



Extension of Fisheries Research and Development Corporation funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

Darren Roy and Eddie Jebreen

FRDC Project No. 2008/101 Final Report



Australian Government
Fisheries Research and
Development Corporation

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**FRDC Project No. 2008/101 Final Report
July 2010**

Darren Roy and Eddie Jebreen



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Report to the Fisheries Research and Development Corporation
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1. Non Technical Summary

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PRINCIPAL INVESTIGATOR: Mr E. Jebreen
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OBJECTIVES:

1. Reduce the capture and mortality of sea snakes through increased use of fisheye bycatch reduction devices within the red spot king prawn sector of the Queensland east coast otter trawl fishery
2. Reduce the capture of bycatch through increased use of square mesh codend bycatch reduction devices within the saucer scallop sector of the Queensland east coast otter trawl fishery
3. Improved turtle exclusion and reduced trawl fishing induced turtle mortality through the use of improved turtle excluder devices within the Queensland east coast otter trawl fishery
4. Further qualification of the associated benefits of fishers using improved bycatch reduction devices

NON TECHNICAL SUMMARY:

OUTCOMES ACHIEVED TO DATE

1. Increased use and awareness of the benefits of fisheye bycatch reduction devices (BRD) to fishers operating in Queensland's East Coast Otter Trawl Fishery particularly the red spot king prawn sector and those operating in the Great Barrier Reef Marine Park.
2. Increased use of square mesh codends in the scallop sector which will lead to significant bycatch reductions.
3. Support from industry for proposals to mandate the use of fisheye BRDs in the red spot king prawn sector and square mesh codends in the scallop sector.
4. Increased use of highly effective turtle excluder devices (TEDs) across the entire Queensland East Coast Trawl Fishery as evidenced by a 75% response rate by licence holders to the TED and SMC rebate scheme.
5. Export accreditation received from the United States recognising the uptake of world's best practice with regards to TED design
6. Development of improved TED and BRD designs through collaboration with fishers and netmakers.
7. Development of a highly effective TED and BRD education and enforcement program through staff training.
8. Increased collaboration between government staff and the fishing industry

Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

9. Implementation of initiatives to supply fisheyes and square mesh codends for the shallow water prawn sector directly to industry for trial and development.
10. Program implemented to collect underwater footage of trawl gear systems in action that may lead to the refinement of current TED and BRD designs.

The East Coast Otter Trawl Fishery (ECOTF) is Queensland's largest commercial fishery producing a wide range of fresh seafood including prawns, scallops, bugs and squid. The Queensland Government together with the commercial fishing industry has reformed the fishery over recent times to improve the sustainability of the fishery and reduce its impacts on the environment. Reducing the incidental catch of non-target fish (also called bycatch) is a major focus for the Queensland fishing industry and the government to meet their sustainability objectives.

In 2006, the Queensland Government committed to 'Taking bycatch off our beaches' by providing funding to assist the commercial fishing industry to reduce its bycatch and its impact on the marine environment. As a component of this commitment, Fisheries Queensland, a service of the Department of Employment, Economic Development and Innovation (DEEDI), was provided with \$1.5m in August 2008 to implement alternative bycatch reduction efficiencies in the Queensland East Coast Trawl Fishery. Fisheries Queensland utilised these funds to introduce the *Trawl Bycatch Reduction Project* to assist fishers in reducing their bycatch rates through the use of more effective turtle excluder devices (TEDs) and bycatch reduction devices (BRDs). The bycatch reduction project included: 1. A Square mesh codend (SMC) and turtle excluder device rebate scheme; 2. Testing for new and improved BRD designs, and 3. An extension and education program.

1. A \$1m rebate scheme was implemented to provide rebates for square mesh codends in the scallop fishery and turtle excluder devices for the entire trawl fishery to assist fishers in the transition to alternative, more effective bycatch reduction devices. Many operators took advantage of the TED rebate with rebates on 1068 new compliant TEDs claimed as part of the rebate scheme. Rebates on 408 Square Mesh Codends (SMC) for use in the scallop fishery were claimed under the rebate scheme.
2. Fishery Independent trawl surveys have been conducted testing modified square mesh codends in both the scallop and shallow water prawn sectors with encouraging results. Industry based testing has also been conducted with commercial fishers trialling modified square mesh codends in the scallop, deepwater and shallow water prawn sectors and fisheye BRDs in the shallow water prawn sector. To encourage the uptake of these devices Fisheries Queensland has supplied devices to industry for trial. Fishers have been very enthusiastic about these trials and have provided constructive feedback on the devices trialled.
3. A \$395 000 DEEDI/FRDC funded extension and education program has been undertaken with the intention to improve the adoption of square mesh codend bycatch reduction devices in the scallop sector of the ECOTF, fisheye BRDs in the red spot king prawn sector and improved turtle excluder device (TED) designs throughout the fishery.

The use of TEDs and BRDs can significantly reduce the amount of non-target fish inadvertently caught in trawl nets. The effective use of these devices in the trawl fishery not only ensures the fishery is undertaken with minimal ecological impact; it can also make fishing operations more efficient and result in a significant improvement in industry wide profitability. Access to new markets, reduced operating costs, improved product quality and a reduced ecological footprint will all contribute to the long term viability of the industry and enable its important role in the community to continue. To convey these messages to the trawl industry the extension program methodology included:

- a. the preparation and extension of construction and use guidelines for TEDs;

- b. provision of independent expert technical advice through working groups and training programs;
- c. preparation of a gear library for display of devices to industry;
- d. port visits to engage industry face to face;
- e. net maker engagement to encourage the flow of information from industry; and
- f. program evaluation assessing the performance of the program.

The extension program, in combination with the other initiatives implemented by Fisheries Queensland, successfully achieved all of the stated objectives and the combination of techniques were effective methods of engagement with the trawl industry. As a result of industry members gaining confidence by having the benefits of effective TEDs and BRDs explained to them through the extension program and the associated rebate schemes delivering financial incentives to improve their gear there was an increase in the use of improved TEDs and SMCs within the fishery. Fishers also have a greater understanding of the need to utilise fisheye BRDs in an effective manner to address their impacts on protected sea snakes. Much has been learnt from this project on how to maximise the benefits of an extension program:

- Regular face to face visits were the most productive method for interaction with fishers especially when trying to describe the complex design elements of TEDs and BRDs
- Hands on workshops whereby gear can be seen and handled was an effective method to discuss the design of gear and generate discussion on concerns industry have with the gear. Staff need to have a thorough knowledge of the devices and have time to spend with individual fishers to build confidence in the devices.
- Fishers require a clear understanding upfront of what their role in the uptake and development of gear is and how they can be involved. It may be difficult to get stakeholders to participate but the rate of uptake of new gear is dependant on their involvement and input. Every effort needs to be taken to get them involved and foster their ideas.
- The industry needs to promote results amongst themselves and to discuss outcomes. Outputs that come from within the industry are far better received and supported
- The best results are likely to be achieved by having a consistent project officer who builds trust and partnership with industry and stakeholders and has the time to focus on the project.

The success of the program has resulted in additional funding being secured to implement new initiatives which will deliver Fisheye BRDs and shallow water prawn square mesh codends to industry for trial and the collection of underwater video footage of TEDs and BRDs in action. The extension program was not seen as a one off and these initiatives will ensure the process of gear development continues. Opportunities exist for fishers to incorporate the existing knowledge into the current fishing activities and continue to implement and refine effective bycatch reduction initiatives into their gear. The new initiatives will see an increase in the use of the two BRDs provided and the refinement and development of the devices through the application of knowledge gained from the footage collected. Fisheries Queensland will engage with fishers to get feedback on the performance of a range of BRDs and the addition of the camera equipment will potentially allow for the ongoing development and trialing of new or improved bycatch reduction devices on board commercial vessels through the industry based BRD testing program. This outcome will provide significant benefits for the drafting of any new legislation for TEDs or BRDs required as part of the review of the trawl plan and into the future.

Broadly stated the project has met its objectives. The extension program has successfully promoted the benefits of utilising the most effective bycatch reduction devices to industry and this has led to the success of the associated rebate scheme and hence significant uptake of these devices by industry. The extension work has also resulted in the implementation of new programs delivering fisheyes and square mesh codends to industry for trial and development in the shallow

water prawn sector. These steps have encouraged stakeholder involvement in the review process for the Fisheries (East Coast Trawl) Management Plan 1999.

KEYWORDS: Bycatch, fisheye, square mesh, turtle excluder device, bycatch reduction device, otter trawl, Queensland.

2. Acknowledgements

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3. Background

Legislation requiring the mandatory use of turtle excluder devices (TEDs) and bycatch reduction devices (BRDs) was introduced in Queensland as part of the *Fisheries (East Coast Trawl) Management Plan 1999*. The legislation was introduced in response to the need to manage fisheries with an ecosystem perspective and growing community concern regarding the impact of benthic trawling on marine ecosystems.

DPI&F has been working closely with the trawl industry in recent times to address a number of issues that have been negatively impacting on the viability of the industry. A trawl industry meeting in June 2008 led to the development of a Trawl Action Plan which identified mechanisms to reduce regulatory burden and increase flexibility and profitability for the trawl industry. Stakeholder consultation was subsequently undertaken on the proposed changes to management contained in the action plan at a series of port meetings in August 2008. As a result, one of the outcomes was the amendment of the specifications for turtle excluder devices (TEDs) in the Fisheries (East Coast Trawl) Management Plan 1999. The new TED legislation came into effect in February 2010.

The changes were made in order to better protect marine turtles from interactions with trawl gear and also to gain accreditation from the United States (US) to allow for the export of Queensland trawl caught product into the US. Gaining access to the US market requires accreditation of the Queensland East Coast Trawl Fishery (QECTF) as meeting strict US TED specification standards. The accreditation acknowledges that the harvesting nation has adopted a program governing the incidental capture of sea turtles in its commercial shrimp fishery comparable to the program in effect in the United States and has an incidental take rate comparable to that of the United States. The QECTF program has involved amending legislation to reflect best practice, providing financial rebates to assist fishers in constructing new TEDs and employing an effective enforcement program demonstrating the uptake by industry of the amended specifications. The accreditation of the QECTF would signify the adoption of world best practice with regard to TED design in this fishery.

With the introduction of the mandatory use of larger TEDs in the East Coast Otter Trawl Fishery (ECOTF), most large bycatch species are eliminated from trawl catch and the focus has been on reducing the proportion of smaller bycatch species. All trawl nets in the East Coast Trawl Fishery

(ECTF) are required to have at least one recognised BRD installed to meet the current BRD use requirement in legislation. BRDs allow for the effective escape of non-target species (including undersized, non-permitted and protected species) that may interact with trawl gear in the fishery.

Fisheries Queensland is looking to mandate the use of square mesh codend bycatch reduction devices (BRDs) in the scallop sector of the Queensland East Coast Otter Trawl Fishery. The benefits of these BRDs has been scientifically proven with bycatch reductions (versus a net with no BRD) of up to 70% achieved when used in conjunction with a TED (Courtney et al. 2007). This further reflects the commitment to identify and implement the use of gear that meets best practice standards within the fishery. Other proven effective BRDs such as fisheyes are being promoted as highly effective options for other sectors of the fishery where interactions with sea snakes are a concern, particularly within the Great Barrier Reef Marine Park area.

A recent FRDC funded research project “Reducing the impact of Queensland's trawl fisheries on protected sea snakes (Project No. 2005/053)” identified the Fisheye BRD to be highly effective at reducing the capture of sea snakes in a shallow water prawn fishery. The fisheye BRD was also equivalent to the square mesh codend BRD as the most effective devices to reduce bycatch tested in the project. These results offer an outstanding opportunity for the trawl fishing industry to significantly reduce an identified ecological impact.

The commercial fishing industry has worked pro-actively to improve its environmental performance with significant advances being made through the adoption of new equipment and techniques to reduce bycatch and the impact of commercial fishing activities on turtles and other marine life. The objective of this project was to further develop and promote best practice with regard to bycatch reduction technologies. The extension methods that were used have been developed from previous experience in similar projects that aimed to extend research results to industry. This project is unique in that it is driven from clear management objectives, provides the capacity for all parties to contribute and can feed directly into the ten year review of the Fisheries (East Coast Trawl) Management Plan 1999.

4. Need

The Queensland Government together with the commercial fishing industry has reformed the fishery over recent times to improve the sustainability of the fishery and reduce its impacts on the environment. Reducing the incidental catch of non-target fish (also called bycatch) is a major focus for the Queensland fishing industry and the government to meet their sustainability objectives.

A unique opportunity exists to capture the results of the recent FRDC funded research project “Reducing the impact of Queensland's trawl fisheries on protected sea snakes (Project No. 2005/053)”, and fast track adoption of these results by the Queensland East Coast Otter Trawl Fishery (ECOTF). The project results estimated the capture of approximately 100,000 sea snakes annually within the ECOTF. The red-spot king prawn sector of the fishery, which is a reef-associated prawn fishery, accounted for about 59% of all sea snake catches and 85% of mortalities. The fisheye bycatch reduction device was shown to reduce sea snake capture by around 62%. Adoption of these devices, including appropriate installation and maintenance, within the red-spot king prawn sector of the ECOTF alone would result in a significant reduction in trawl fishery induced sea snake mortality in Queensland, and the Great Barrier Reef Marine Park. The fisheye BRD was also equivalent to the square mesh codend (SMC) BRD as the most effective devices to reduce bycatch tested in the project. The main difference between the two being that the fisheye is better at excluding large thick snakes than the SMC. These results offer an outstanding opportunity for the trawl fishing industry to significantly reduce an identified ecological impact.

This extension project also built on the results of the FRDC funded research project “A collaborative extension program by the Queensland Department of Primary Industries & Fisheries, SeaNet and Ecofish for the development and adoption of square mesh codends in select prawn and scallop trawl fisheries in Queensland (Project 2005/054)” and provides a unique opportunity to follow up the work with amendments to legislated management arrangements as required through the scheduled review of the *Fishery (East Coast Trawl Fishery) Management Plan 1999*.

The work also aligned with the outcomes of the DEWR assessment of the ECOTF for the purposes of accreditation under Parts 13 (protected species) and 13A (export approval) of the EPBC Act 1999 (DEWR 2007). In particular, the conditions and recommendations to:

- amend the definition of recognised TEDs in the *Fisheries (East Coast Trawl) Management Plan 1999* to allow for the effective escape of those turtle species interacting with trawl gear in the fishery; and ensure that industry has incorporated modified TEDs that comply with the new definition by 15 December 2009 (Condition of Part 13 accreditation);
- continue to pursue a reduction in the amount of bycatch taken in the ECOTF through the implementation of best practice bycatch mitigation technology and the promotion of associated research and development (Recommendation 6); and
- continue to take all reasonable steps to avoid interactions with protected species (including sea snakes, syngnathids and marine turtles), including the promotion of relevant research (Recommendation 7).

5. Objectives

1. Reduce the capture and mortality of sea snakes through increased use of fisheye bycatch reduction devices within the red spot king prawn sector of the Queensland east coast otter trawl fishery
2. Reduce the capture of bycatch through increased use of square mesh codend bycatch reduction devices within the saucer scallop sector of the Queensland east coast otter trawl fishery
3. Improved turtle exclusion and reduced trawl fishing induced turtle mortality through the use of improved turtle excluder devices within the Queensland east coast otter trawl fishery
4. Further qualification of the associated benefits of fishers using improved bycatch reduction devices.

6. Methods

This project included fisheye BRDs into an existing \$300 000 DEEDI funded extension program. The existing extension program was aimed at improving adoption of Square Mesh Codend (SMC) bycatch reduction devices in the scallop sector of the ECOTF, and improved Turtle Excluder Device (TED) designs throughout the fishery. To deliver on the objectives of this project the resultant extension program aims to improve the adoption of fisheye BRDs within the red-spot king prawn sector in addition to the objectives mentioned above.

In 2006, the Queensland Government committed to ‘Taking bycatch off our beaches’ by providing funding to assist the commercial fishing industry to implement alternative bycatch reduction efficiencies in the Queensland East Coast Trawl Fishery.

Learning from past FRDC funded research extension programs, “Monitoring the impact of trawling on sea turtle populations of the Queensland east coast (project 93/229)” and “A collaborative extension program by the Queensland Department of Primary Industries & Fisheries, SeaNet and Ecofish for the development and adoption of square mesh codends in select prawn and scallop trawl fisheries in Queensland (Project 2005/054)”, this project did not rely on field trials with fishers to advertise the benefits of the gear being promoted. Rather, the Queensland Government established a \$1M dollar rebate scheme to subsidise the cost to fishers of purchasing and installing improved TED designs and SMC, and to facilitate the up take of new, more effective devices by industry.

This extension program was accompanied by the following parallel Queensland Government funded elements:

- 1) The creation of clear specifications for each of the mentioned devices in legislation;
- 2) A \$1m rebate scheme for Square Mesh Codends in the scallop fishery and Turtle Excluder Devices for the entire trawl fishery to assist fishers in the transition to alternative, more effective bycatch reduction devices; and
- 3) a \$200,000 testing program for alternative Bycatch Reduction Device designs including proposals to:
 - a) trial square mesh cod ends in the shallow water eastern king prawn sector
 - b) send newly modified TED designs to the USA for testing
 - c) develop improved BRDs for the beam trawl sector of the fishery

6.1. TED/BRD Construction and Use Guidelines

Communication and extension materials were produced including the construction and use guidelines for TEDs and BRDs. The intent of this booklet was to provide an easy to understand source of information on the regulations for TEDs and BRDs for the fishing industry and enforcement officers. By simplifying the legislation for industry it was believed that more fishers would be able to check their own devices for compliance and modify any existing devices to become compliant. Media releases, the DEEDI website and DEEDI trawl newsletters were also used to inform industry of the project, how they could get involved and how they can access the rebate scheme to assist in offsetting the cost of purchasing new TEDs and BRDs if required.

6.2. Provision of Technical Advice

Contracted services of respected expert net makers and gear designers were employed to provide advice on the construction and installation of the devices. A technical working group was formed at the beginning of the project to provide advice on critical technical aspects of the gear being promoted as part of this project. The group consisted of a core of government representatives, scientists, fishers and netmakers. Other experts were brought in to address specific information requirements depending on the agenda items being discussed. The use of advisors experienced in the development of these gear types from a wide range of fisheries helped facilitate building trust with industry and improved the likelihood of the uptake of the devices.

Training workshops were also provided for the Fisheries Observer program staff and Queensland Boating and Fisheries Patrol (QBFP) officers prior to the amended regulations coming into force. These workshops were aimed at providing interpretation of the TED and BRD regulations and advice on how they should be enforced with the observer workshop covering trawl gear systems more broadly in order to allow the observers to interact more confidently with fishers in regard to their gear. Fisheries Observers play a role in the future education of fishers on the benefits of the

BRDs being promoted throughout this project through the dissemination of results from the BRD trials. The Fisheries Observer Program was largely dedicated to the trawl fishery in 2010 and Observers also provided feedback to the department on the uptake of the preferred devices being promoted throughout the project.

QBFP officers are required to enforce TED and BRD regulations in the field so it is imperative they were given adequate training in the assessment and measurement of these devices to ensure effective enforcement.

6.3. Gear Library

Given the relatively complex nature of TED and BRD legislation, Fisheries Queensland developed a gear library consisting of nets that incorporated BRDs and TEDs that were constructed based on the amended regulations. This provided staff the opportunity to display these codends at port visits and gear workshops. Having examples to show fishers when discussing this gear made it possible to step through the various aspects of the devices as described in the legislation. This was to enable fishers to visualise the design changes and see how the new TEDs compared to their current gear giving them confidence that the design changes were an improvement on their current equipment.

In addition TEDs and BRDs used during scientific gear testing surveys were offered to fishers to trial during the project as part of the DEEDI funded BRD testing program. This equipment was used to compare the performance of the rebated devices against the current BRD being used on the vessel. Fishers were asked to provide verbal feedback on the performance of the devices over the life of the project.

6.4. Port Visits

Project staff and Queensland Seafood Industry Association representatives undertook port visits in the initial stages of the project increasing awareness of the program, explaining the need for updating gear in line with current research and the benefits to industry of adopting improved efficiencies in bycatch reduction. The port visits provided an opportunity to receive feedback from industry regarding their concerns with the program, any impediments to up take of the new devices and in later stages of the program, feedback on the perceived benefits or otherwise of using the devices. Targeted port visits were undertaken at key times over the life of the project including closed seasons to ensure the greatest number of fishers were available.

Fisheries Queensland also conducted targeted gear workshops during the project. These workshops were aimed directly at fishers and were about explaining construction methods and techniques used in the construction of compliant TEDs and BRDs in particular fisheyes and square mesh codends. These visits were timed around the moon phases to ensure the maximum number of attendees. By being able to interact with fishers and discuss their design concerns project staff felt that it would be much easier to allay any of the issues fishers had with the preferred devices being promoted and at the same time give the fishers confidence that the proposed changes were not going to be detrimental to their fishing operations.

6.5. Net Maker Engagement

The engagement of net makers was primarily through the parallel Queensland Government funded rebate scheme for the construction of compliant devices. Through this program the Queensland net making and material supply industry were comprehensively engaged in the development of gear specifications and construction methodology. This was an important aspect of the program as

netmakers speak regularly with fishers and are a trusted source of information regarding the use of effective devices in their gear. Netmakers often make suggestions about the design of TEDs and BRDs. As fishers rely on the judgment of netmakers to inform them of the appropriate BRDs to use, it was important that the netmakers themselves have confidence in the proposed designs. Ongoing feedback from the netmaking industry was sought after the implementation of the rebate schemes as the preferred devices were being used by fishers.

Net makers were also engaged through the BRD Technical Working Group and provided input throughout the rebate scheme and development of the TED design and use guidelines. As netmakers liaise extensively with their clients regarding gear design their input was an important component of the BRD technical working group. Net makers provided suggestions for improving current BRD designs and were an important sounding board for potential design changes, some of which were trialled during dedicated scientific gear surveys as part of the BRD testing component of the project. Successful design changes were then incorporated into BRDs being offered as part of the rebate scheme.

6.6. Program Evaluation

DEEDI through the Fishery Observer Program commenced evaluation of the program from January 2010. Observers were engaged within the ECOTF to collect information on the rate of utilisation of mandatory or preferred devices, fisher's perception of the performance of the devices and the communication and extension methods used in the program. This was achieved through the use of phone surveys. Observers also provided ongoing feedback to the department on the uptake of the preferred devices being promoted throughout this project.

7. Results and Discussion

Gaining access to the US market requires accreditation of the Queensland East Coast Trawl Fishery (QECTF) as meeting strict US TED specification standards. The accreditation acknowledges that the harvesting nation has adopted a program governing the incidental capture of sea turtles in its commercial shrimp fishery comparable to the program in effect in the United States and has an incidental take rate comparable to that of the United States.

The QECTF program has involved amending legislation to reflect best practice, providing financial rebates to assist fishers in constructing new TEDS and employing an effective enforcement program demonstrating the uptake by industry of the amended specifications. These measures have been assessed by representatives from the National Oceanic and Atmospheric Administration (NOAA) in the US and have been approved. NOAA is a recognised world authority on TED design and the accreditation of the (QECTF) signifies the adoption of world best practice with regard to TED design in this fishery.

In addition Fisheries Queensland is also planning to mandate the use of highly effective square mesh codend bycatch reduction devices (BRDs) in the scallop sector of the Queensland East Coast Otter Trawl Fishery. This further reflects the commitment to identify and implement the use of gear that meets best practice standards within the fishery. Other proven effective BRDs such as fisheyes are being promoted as highly effective options for other sectors of the fishery where interactions with sea snakes are a concern, particularly within the Great Barrier Reef Marine Park area. These actions acknowledge that sector specific BRD options are required for the East coast trawl fishery and that a one size fits all approach to bycatch reduction across the different fishery sectors would not be effective

The primary driver for the Bycatch Reduction Device (BRD) rebate scheme was to implement the election commitment to "take bycatch off our beaches" and in doing so bring the Queensland Trawl Fishery into line with international best practice.

The rebate scheme commenced in July 2009 and has been extended until May 2011. The net making industry has struggled to keep up with demand and this led to the extension of the TED rebate until December 2010 to clear TED orders and the extension of the SMC rebate until May 2011. The rebate process has been fully audited and has been approved.

To date the scheme has been well received by the trawl industry with approximately 300 rebate applications lodged (some applications had multiple claims) representing a participation rate of approximately 75% among eligible licence holders.

Table 1. Numbers of Square Mesh Codends (SMC) and Turtle excluder devices (TEDs) constructed as part of the trawl rebate scheme. Numbers in parenthesis indicates numbers of rebate eligible codends on backorder with netmakers but not claimed yet.

| Device | Number of devices | Totals | Number of claims | Eligible Licences (approx) | Participation rate | Overall Mean Participation rate |
|-------------|-------------------|--------|------------------|----------------------------|--------------------|---------------------------------|
| Prawn TED | 759 | 1068 | 209 | 350 | 60% | 75% |
| Scallop TED | 309 | | 81 | 100 | 81% | |
| Scallop SMC | 408 | 408 | 84 | 100 | 84% | |

7.1. TED/BRD Construction and Use Guidelines

A waterproof TED guide was produced as part of the project, describing in simple terms the specifications for the construction of compliant TEDs. The guidelines were produced as a colour booklet containing device specifications, construction materials, construction and installation guidelines, diagrams and photos, techniques for measurement to ensure compliance and tips for ensuring effective use. The booklet addressed grid design, cut-out options, flap options and floatation options. Tables were also included providing mesh counts to work out the angle of the installed grid, required widths of leading edge cuts and the width of flaps as required in the legislation. A copy of the booklet is provided (see Appendix 3).

The booklet was posted to all Queensland trawl operators, netmakers and QBFP offices in June 2010. It was intended that this booklet also cover all BRDs, in particular square mesh codends, contained in the regulations. Due to the high likelihood that the BRD legislation will be amended as part of the trawl plan review it was decided to complete this section of the booklet after the conclusion of the review. This will ensure the information provided is up to date and will avoid any confusion within the industry. Reports from both fishers and patrol officers have indicated that the booklet has been very helpful in the interpretation of TED guidelines. By using mesh counts to describe distance rather than actual measurements fishers have a better understanding of what the requirements are.

In addition to the TED guide, Fisheries Queensland provided information on the project on the DEEDI website. (http://www.dpi.qld.gov.au/28_14252.htm). Regular updates were provided to fishers via the Fisheries Queensland trawl newsletter that was distributed to all licence holders in October 2009, July 2010 and October 2010. The newsletters are presented in Appendix 4. Project

staff also provided regular updates on the project at monthly meetings (Trawl Review Technical Advisory Group and Scientific Advisory Group) with industry representatives. These advisory group meetings were conducted as part of the review process for the East Coast Trawl Management Plan which began in April 2010 and members included industry, conservation, scientific and marketing experts.

7.2. Provision of technical advice

Two meetings of the stakeholder based BRD Technical Working Group were held on 13 October 2008 and 27 November 2009. The working group meetings brought together industry members, researchers, fishery managers and other stakeholders. The purpose of the meetings was to provide advice and feedback on the direction the entire project should take to maximise the benefits to industry. Members initially provided input into the design and administration of the rebate schemes, BRD testing program and the proposed extension methods. At subsequent meeting members gave more detailed advice on issues such as BRD and TED design and how to maximise extension efforts in relation to industry practices. These meetings included discussion on education and extension strategies including:

- a. TED/BRD Design and Use Guidelines
- b. Regional Gear Workshops
- c. Provision of external expert advice
- d. Provision of regular assistance in ports
- e. Options for providing support to industry
- f. Discussion of education options
- g. Video Footage of gear

Minutes from these meetings are contained in appendix 5.

Fisheries Observer TED and BRD training was undertaken in January/February 2010. A recognised gear expert gave a 2 day training course covering all aspects of trawl gear systems. Confidence and knowledge gained from this training enabled the observers to interact more easily with fishers as well as provide technical support to trawler operators on whether their gear was compliant, what needed to be done to make it compliant and how to ensure they are getting the best out of the gear they were using in terms of bycatch reduction and target product retention. The observer program also played a role in the education of fishers on the benefits of the BRDs being promoted throughout this project and through the dissemination of results from trials of their use. The Fisheries Observer Program was largely dedicated to the trawl fishery in 2010 and observers also provided feedback to the department on the uptake of the preferred devices being promoted throughout this project.

A series of gear workshops were presented to Queensland Boating and Fisheries Patrol (QBFP) officers by project staff during February and March 2010. These workshops were held at 8 regional offices between Cairns and Southport. 66 officers attended the training workshops. Patrol officers were provided with a detailed description of the new TED and BRD regulations which covered the terminology used and how this terminology applied in the practical sense. Direction was also provided on the interpretation of the regulations and how they should be enforced. A QBFP compliance report for 2009/2010 (up until January 2010) shows a compliance rate of 98.5% (Appendix 6). Whilst the compliance rate shows a reduction between 2008/2009 and 2009/2010 this could be attributed to the QBFP having a better understanding of TED regulations as a result of specialised training provided as part of this project. This enabled the patrol officers to better enforce the complex regulations surrounding TEDs and identify breaches. The TED legislation also became more specific in 2009/2010 regarding the design of the TEDs that can be used and hence there was some lag with industry recognising the changes and adopting them.

7.3. Gear Library

Two codends were constructed covering examples of the rebated devices in both scallop netting and prawn netting. The design of these codends covered all of the specification options associated with the amended TED legislation and the proposed SMC and fisheye designs. As alternative gear was trialled as part of the BRD testing program it was added to the gear library for display.

The gear library has been used in education sessions for trawl fishers, net makers, fisheries observers and Queensland Fisheries and Boating Patrol officers. The sessions covered construction methods and techniques for installing and checking (measuring) their devices to ensure compliance and to maximise effectiveness in their fishing operations. Feedback from attendees of these sessions has been positive in that they have had an opportunity to have all of their questions on the devices answered and are more confident in the use of the devices in their fishing operations. The face to face components of the extension program were by far the best method for communicating effectively with fishers.

This equipment was also loaned out to other government agencies and SeaNet for use in public displays at seafood festivals.

7.4. Port Visits

Regular port visits were conducted throughout the project. These visits gave Fisheries Queensland staff an opportunity to provide updates on the project and discuss any issues with trawl fishers. The face to face meetings were well received by fishers and generally good attendance was achieved at these meetings. These meetings also provided an opportunity to tie in updates on issues from other areas of the trawl fishery. The November 2009 visits were used to provide an update on the trawl plan review process and also promote the rebate scheme to fishers.

As an outcome of the BRD Technical Working Group meeting in November 2009, a series of 11 gear workshops were held in ports during January 2010. The workshops attracted good numbers of trawler operators and provided information on how to claim rebates on TEDs and SMC and an opportunity to ask any questions about the gear. Fisheries Queensland also provided advice on how to confirm if gear met the minimum specifications as described in the management plan.

Port visits in August 2010 were used to provide updates on the rebate scheme, promote the use of fisheye BRDs and promote new bycatch reduction initiatives such as the trialling of fisheye BRDs and square mesh codends in the shallow water prawn sector and the commencement of the underwater camera project. Table 2 shows attendance numbers at these events. Unfortunately, during the southern component (Hervey Bay down to Tweed Heads) of the August port visits a long spell of good weather meant that attendance numbers were low at these visits due to the majority of vessels being at sea. Other port visit trips coincided more favourably with suitable moon phases or weather events and that meant more vessels were in port when Fisheries Queensland staff were visiting.

Table 2. Attendance numbers at port visits conducted by Fisheries Queensland staff.

| Port | Port Visit Nov 2009 | Gear Workshop Jan 2010 | Port Visit Aug 2010 | Total |
|------------|---------------------|------------------------|---------------------|-------|
| Cairns | 11 | 15 | 9 | 35 |
| Townsville | 23 | 23 | 28 | 74 |
| Mackay | 5 | 7 | 8 | 20 |
| Gladstone | 8 | 3 | 2 | 13 |
| Bundaberg | n/a | 13 | 9 | 22 |
| Hervey Bay | 18 | 8 | 1 | 27 |

| | | | | |
|--------------|------------|------------|-----------|------------|
| Tin Can Bay | n/a | 10 | 3 | 13 |
| Mooloolaba | 27 | 4 | 3 | 34 |
| Scarborough | 19 | 12 | 2 | 33 |
| Southport | n/a | 4 | 1 | 5 |
| Tweed Heads | n/a | 8 | 3 | 11 |
| | | | | |
| Total | 111 | 107 | 69 | 287 |

7.5. Net Maker Engagement

Project staff continually liaised with netmakers regarding TED and BRD design. All eight registered netmaking businesses in Queensland were contacted regularly during the project. Regular visits were conducted to their premises to discuss any feedback on the design and development of the devices. This engagement ensured the latest available information from fishers on the performance of their TEDs or BRDs was made available to project staff. Project staff were also able to clarify any concerns netmakers had over whether their devices were compliant with the amended regulations before supplying the equipment to fishers. Netmakers were also an important avenue for the distribution of information to fishers. Due to the small number of netmaking businesses on the east coast of Queensland each netmaker serves a wide client base of fishers and they are regularly in contact. For this reason netmakers would often act as a conduit for information between Fisheries Queensland and the fishers and were an important link between government and industry.

7.6. Program Evaluation

In January 2010 the Fisheries Observer Program (FOP) administered a short questionnaire (see Appendix 7) to the Queensland trawl fleet. This was 6 months after the commencement of the rebate scheme. Whilst 559 boat marks with T (east coast otter/beam trawl) or M (moreton bay otter trawl) affiliated endorsements were extracted from the Register of Authorities (ROA), a significant proportion had no boat attached to their licence and many fishers were unreachable on the contact numbers recorded in ROA. Information was obtained by the FOP team from 194 boat marks in total.

The data quality was weakened in some instances by the licence holders and not their skippers giving the responses; often they could offer no information on the type of BRD routinely used and even the sectors normally fished. On other occasions communications were interrupted, for example when sometimes talking to a fisher at sea, and the questionnaire was subsequently not completed.

Despite the shortcomings mentioned above, information gathered from administering this questionnaire had very tangible benefits to fishers, Harvest Management and the Observer Program. With few exceptions, the 194 recipients of the questionnaire were appreciative of the call, with 114 claiming to be fully aware of the new TED specifications, 66 partially aware and 20 with no knowledge at all.

With regard to the TED rebate scheme, the licence holders / skippers representing 113 boats reported full awareness, with a further 67 claiming only partial awareness and 17 no knowledge at all. Information on the TED rebate scheme was requested by 88 (boat marks), and declined by 42; in most instances this information was emailed to the fisher immediately after the phone call, providing an efficient service to industry and generating many new email contacts for the fisheries contacts database.

When asked the question concerning the compliance status of the boat's TEDs, this survey found that 84 fishers believed that their TEDs were compliant and 64 non-compliant. The main reason

(27 out of 57 responses) given by fishers for compliance was that their TEDs had been made to the new specifications, with checking against these specs by themselves (14) or Fisheries Queensland personnel (6) being the next most common responses. In total, interviewees representing 53 boats requested assistance in determining the compliance status of their TEDS. In addition to addressing fishers' questions directly and sending out information packs, the FOP provided licence holders / skippers with the January dates of port presentations, as appropriate, thus promoting attendance at these events.

The FOP finished administering this questionnaire by January 25th 2010. At this point in time, 52 boats had orders placed for new TEDs, 28 had already applied for the TED rebate and 102 were intending to apply. The 60 'no' responses largely relate to those who had no existing knowledge of the scheme or who believed the TED legislation was not relevant to them (e.g. beam or non-Queensland fishers); a few fishers remarked that they did not consider the TED rebate to be sufficient to warrant the paperwork involved.

BRD information was obtained for 174 trawlers, with 33 routinely using two types of BRD. Of the 207 BRDs stated, 116 were Fish Eyes (56%), 29 Big Eyes (14%), 21 Square Mesh Panels (10%), 20 Square Mesh Codends (9.7%) and 10 V-Cut / Flapper (5%). No Radial Escape Sections were reported. Where two BRDs were reported, one invariably was used in one trawl sector and the other in another trawl sector.

Not all licence holders were asked about their awareness of the square mesh codend rebate for scallop gear. However, of the 181 responses obtained, 133 (73%) were favorable, with only 48 claiming no knowledge of the scheme. Information on this rebate scheme was requested by people associated with 57 different boat marks. Nine boats had already applied for this rebate, 55 were intending to and 104 gave a 'no' response when asked if they had applied for the rebate.

8. Benefits and Adoption

This project contributed to the increased adoption of improved bycatch reduction devices in the Queensland ECOTF including fisheye and square mesh codend BRDs and improved TEDs. By extending results from previous research and working directly with industry participants to effectively demonstrate the efficiencies of the devices there has been an improvement in industry's understanding on how to use these devices in an effective manner. This has given trawl operators more confidence in installing these devices into their codends.

The effective use of TEDs and BRDs can result in a significant improvement in industry wide profitability. Access to new markets, reduced operating costs, improved product quality and a reduced ecological footprint will contribute to the long term viability of the industry and the future of the important role it has in the community.

As a result of the rebate scheme and associated extension program, 1068 new and improved TEDs have been introduced into the fishery. Legislation has been amended to reflect these improvements and an effective enforcement program is backing these changes. The adoption of TEDs compliant with US import requirements will benefit the ECOTF through the creation of new marketing opportunities for prawns. The ECOTF is a significant regional employer and improvements in profitability of fishing operations translate directly to improved regional employment options. The community will benefit from the existence of a strong regional employer, and through the knowledge that this industry is striving to ensure it adopts world best practice fishing operations.

The adoption of fisheye and SMC BRDs has a number of beneficiaries. By using these BRDs effectively the ECOTF will reduce the ecological footprint of its fishing operations and significantly reduce the trawl fishing induced mortality of protected sea snakes and other bycatch species. The

ECOTF will benefit directly from improved product quality through reduced levels of soft and broken prawns and reduced handling of sea snakes. Improved levels of bycatch reduction also mean less weight to tow, cleaner shots, less sorting, improved fuel economy and increased gear lifespan. Access to the technology is also likely to benefit trawl fishers and managers in Western Australia and other Australian prawn and scallop fisheries through the development and refinement of these effective devices. With the introduction of 408 square mesh codends into the scallop sector as a result of the ongoing rebate scheme, 267 shallow water prawn square mesh codends via industry trials and the provision of 6232 fisheye BRDs to the entire fleet (up to 12 per licence), the trawl industry is in a position to realise significant bycatch reductions across the fishery.

The continued improvement in bycatch reduction strategies also ensures that accreditation by DEWHA for export trade approvals in the ECOTF is also maintained.

9. Further Development

Industry Trials of Fisheyes and Square Mesh Codends

Previous research has shown square mesh codends (SMCs) to be highly effective BRDs in both the scallop and deepwater prawn sectors of the East Coast trawl fishery. Due to the success of SMCs in other sectors of the fishery and the relatively high levels of bycatch and effort encountered in the shallow water prawn sector, Fisheries Queensland trialled different square mesh codend sizes and designs in this sector. Preliminary results from the structured scientific surveys indicate that 48mm square mesh codends can reduce bycatch by up to 43% when compared to a diamond codend with no BRD however suffered prawn losses of up to 20%. (Darren Roy pers comm.)

To encourage the uptake and development of these devices in the shallow water prawn sector Fisheries Queensland has implemented a scheme for the purchase and distribution of two hundred and sixty-seven (267) 43mm and 38mm prawn square mesh codends for voluntary trial by fishers in the East coast otter trawl fishery. Mesh sizes were reduced to mitigate against the loss of prawns observed in the surveys however it was assumed bycatch reductions would also be less than the 48mm codends tested. To offset this an additional 300mm x 300mm panel of 60mm square mesh was trialled in some codends to allow the escapement of larger fish species which dominate the shallow water bycatch in some areas. Underwater camera footage has shown this panel to be an effective addition to the smaller square mesh codends and it is particularly effective for releasing stout whiting from the codend.

The purchase and distribution of square mesh codends was run in conjunction with another program supplying 6232 fisheye BRDs directly to all licence holders. These two programs will ensure that trawl fishers have access to the two most effective BRDs completely free of charge and may encourage the use of multiple BRDs in codends.

By supplying the devices directly to industry as opposed to running additional rebate schemes, it is expected a higher proportion of vessels will install the devices into their nets and the administration costs to Fisheries Queensland will be greatly reduced. The administration required for the rebate scheme was significant as the majority of the applications were incomplete when submitted. Feedback during port visits also indicated that industry participants had some difficulty completing the paperwork required to claim their rebates. Through the increased use of effective BRDs, fishers will be able to provide feedback on the performance of the devices. Fisheries Queensland will continue to seek feedback on the performance and uptake of these devices through until the conclusion of the project. This feedback on the design and performance of the BRDs can feed directly in the trawl plan review and will be an important component in finalising the specifications for the gear moving forward.

Underwater Camera Project

It is important that management and industry considers BRD design and performance relative to the fishery sector in question. This ensures BRDs continue to effectively reduce bycatch (non-target species) while also retaining catches of target and permitted species. Until recently the main source on information of the performance of BRDs has been through the scientific testing of devices on board commercial vessels and via industry based testing programs. This testing has identified the bycatch reduction potential of various BRDs but provided little information on how the device actually functions.

Fisheries Queensland has recently purchased underwater video equipment which will enable fishers to get a better understanding of how their trawl gear system performs as well as how specific components of the gear, including TEDs and BRDs function under fishing conditions. In **Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery**

the past fishers have used various indicators to assess how their gear is fishing and how it can be improved but to a degree this has consisted of a lot of guesswork. By being able to watch their gear function underwater and learn how certain adjustments can affect its performance, fishers will be in a much better position to develop and refine their gear to be even more effective into the future. Issues like where certain BRDs need to be located to be most effective, what bycatch species escape specific BRDs, how animals behave in the codend, how their TEDs perform and how they can be improved will all help industry develop and refine their current suite of gear. In addition the project will offer the ability for fishers to view how their boards perform, how these relate to the ground chain and how their nets are spreading to ensure maximum efficiency.

Preliminary discussions held with fishers have indicated that the overwhelming majority fully support the provision of this gear to industry and are excited about the potential the filming of their gear has for its development. This footage will also be a key component in the promotion of the trawl industry to the wider public via online media and represents an exciting extension opportunity for Fisheries Queensland.

10. Planned Outcomes

The planned outcomes as specified in the project agreement are as follows:

1. The project contributes to the increased adoption of improved bycatch reduction devices in the Queensland ECOTF including fisheye and square mesh codend BRDs and improved TEDs.

408 scallop square mesh codends and 1068 improved TEDs have been introduced into the fishery as a result of this extension work undertaken. A new initiative implemented as a result of this project will deliver approximately 6232 fisheye BRDs to industry and provide 267 square mesh codends to trawl operators in the shallow water prawn sector for trial. The trawl plan review process is recommending that square mesh codends be mandated in the scallop fishery and fisheye BRDs be mandated in the red spot king prawn fishery. Square mesh codends and fisheye BRDs are proposed as the main BRD options in all other sectors of the fishery.

2. The project contributes to the ECOTF reducing the ecological footprint of its fishing operations and significantly reduces the mortality of protected sea snakes and other bycatch species.

By utilising effective TEDs and BRDs, as has been demonstrated through the response to the rebate scheme, the provision of fisheye BRDs to all licence holders and the ongoing industry trials of shallow water prawn square mesh codends, the ECOTF is taking steps towards significantly reducing the mortality of protected sea snakes and other bycatch species.

3. The project contributes to the adoption of improved TEDs and subsequent accreditation of the ECOTF for the export of prawns to the United States of America, by complying with rigorous TED specifications.

DPI&F has been working closely with the trawl industry in recent times to address a number of issues that have been negatively impacting on the viability of the industry. A trawl industry meeting in June 2008 led to the development of a Trawl Action Plan which identified mechanisms to reduce regulatory burden and increase flexibility and profitability for the trawl industry. Stakeholder consultation was subsequently undertaken on the proposed changes to management contained in the action plan at a series of port meetings in August 2008. As a result, one of the outcomes was the amendment of the specifications for turtle excluder devices (TEDs) in the Fisheries (East Coast Trawl) Management Plan 1999. The new TED legislation came into effect in February 2010.

The changes to TED legislation helped gain accreditation from the United States (US) to allow for the export of Queensland trawl caught product into the US. The accreditation was approved in May 2010 and acknowledges that the harvesting nation has adopted a program governing the incidental capture of sea turtles in its commercial shrimp fishery comparable to the program in effect in the United States and has an incidental take rate comparable to that of the United States.. The accreditation of the QECTF signifies the adoption of world best practice with regard to TED design in this fishery.

4. The continued improvement in bycatch reduction strategies also ensures that accreditation by DEWHA for export trade approval in the ECOTF is maintained.

The initiatives implemented by Fisheries Queensland to distribute fisheyes and prawn square mesh codends directly to licence holders for trial and the purchase of underwater camera equipment for filming TEDs and BRDs in action will build on the achievements of this project (improved TEDs and scallop SMCs) and will lead to the continued improvement in bycatch reduction devices. In addition the trawl plan review is recommending a reduction in the number of BRD options in legislation retaining only the most effective devices for use in the fishery.

11. Conclusion

All of the projects objectives were achieved.

Objective 1. *Reduce the capture and mortality of sea snakes through increased use of fisheye bycatch reduction devices within the red spot king prawn sector of the Queensland east coast otter trawl fishery*

This objective has been achieved. Fisheye BRDs have been promoted to fishers throughout the extension program using various techniques and these devices have been provided to all licence holders for use in their nets. Gear workshops were held explaining the benefits of the devices and how best to install them in trawl nets with this type of hands on, face to face interaction being well received by fishers. Fishers now recognise the need to address their impacts on protected sea snake populations and have been more enthusiastic about installing fisheyes into their codends with results from the phone survey showing 56% of operators interviewed were using Fisheye BRDs. Recommendations have arisen from the trawl plan review process to mandate the use of fisheye BRDs in the red spot king prawn sector. These steps should see a significant increase in the use of Fisheye BRDs not only within the red spot king prawn sector but throughout the tiger/endeavour and eastern king prawn sectors of the fishery, thus meeting the objective.

Objective 2. *Reduce the capture of bycatch through increased use of square mesh codend bycatch reduction devices within the saucer scallop sector of the Queensland east coast otter trawl fishery*

This objective has been achieved. At the time of writing 408 scallop square mesh codends have been claimed as part of the rebate scheme with this component of the scheme ongoing until May 2011. The extension program was used to promote the benefits of square mesh codends in the saucer scallop sector. These devices were displayed during gear workshops so fishers could see the specifications for themselves. Seeing the devices encouraged fishers to trial them as part of their normal fishing activities. The implementation of the rebate scheme meant that square mesh codends were very close to cost neutral and this further enhanced the take up of these devices. Initially fishers reported some problems with the design of the codends, in particularly the wear and tear they were experiencing on the netting. Fisheries Queensland trialled modifications suggested by fishers and implemented these changes into the codends delivered as part of the rebate scheme. The designs of the codends were improved significantly without compromising their bycatch reduction potential. The length of square mesh was reduced from 40 down to 33 bars in length and the diamond mesh section aft of the square mesh was increased from 5 to 15 meshes

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in length to reduce the contact between the scallops and the square mesh which was causing many of the wear problems. These changes did not affect the performance of the SMCs as a bycatch reducer and they will further enhance the suitability of these devices in the scallop fishery. The trawl review process has recommended that square mesh codends be mandated for use in the scallop sector.

Objective 3. *Improved turtle exclusion and reduced trawl fishing induced turtle mortality through the use of improved turtle excluder devices within the Queensland east coast otter trawl fishery*

This objective has been achieved. The trawl rebate scheme resulted in 1068 improved TEDs being introduced into the fishery. This was a result of the rebates available, the amendment of TED legislation, the provision of technical advice and information to fishers and an effective education and enforcement program. As a result of these achievements the United States officially accredited the Queensland ECOTF for the export of prawns into United States markets. This accreditation acknowledges the use of world's best practice with regard to TED design and implementation. Compliance with the new specifications has been around 98% demonstrating that the objective has been met.

Objective 4. *Further qualification of the associated benefits of fishers using improved bycatch reduction devices.*

This objective has been achieved. Through the wide range of extension techniques used as part of this project fishers have a greater understanding for the need to use effective bycatch reduction devices and the associated benefits of doing so. This has been shown through the response by fishers to the voluntary trialling of square mesh codends in the shallow water prawn sector. Traditionally these devices have been shunned by fishers in the shallow water due to the perceived prawn loss from the codends. However Fisheries Queensland has had requests for 267 shallow water codends to be supplied to industry for trial. This is an indication that fishers realise the associated benefits of using these devices such as reduced bycatch levels, improved product quality, less sorting time, longer towing times and improved water flow through their nets. Many fishers are also utilising two BRDs in their codends to address specific bycatch issues in their fishing area. Many are combining both fisheyes and square mesh codends effectively. Previously fishers were averse to using one BRD yet the fact that some fishers are now installing more than one BRD into their codends indicates the understanding and acceptance of the benefits of utilising these effective devices. Feedback will continue to be collected on the performance of these devices through face to face surveys conducted with fishers in port during May and June 2011. Industry representation on the various working groups formed as part of the trawl plan review will ensure that information gathered from the ongoing use and refinement of these devices into the future will be available for use during the review process.

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13. Appendices

Appendix 1 – Intellectual property

There is no intellectual property arising from this project

Appendix 2 – Staff

| Staff | Role | Organisation |
|---------------|------------------------|----------------------|
| Eddie Jebreen | Principal Investigator | Fisheries Queensland |
| Anita Ramage | Co Investigator | Fisheries Queensland |
| Richard Marsh | Management Officer | Fisheries Queensland |
| Darren Roy | Management Officer | Fisheries Queensland |
| Ian Jacobsen | Management Officer | Fisheries Queensland |

Appendix 3 – TED Technical information guide for commercial fish and net makers

Department of Employment,
Economic Development and Innovation



Turtle excluder devices (TEDs)

Technical information guide for commercial fishers and net makers



PR10-4726

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About this guide

Fisheries Queensland, part of the Department of Employment, Economic Development and Innovation, has developed this guide to provide technical information on turtle excluder devices (TEDs).

TEDs allow for the effective escape of turtles and other large non-target species (including sea sponges, sharks and large rays) that interact with trawl gear.

This guide has been developed to ensure TEDs are made to a consistent standard—for fitting to trawl nets used throughout the Queensland east coast trawl fishery.

The guide and the standardised design specifications contained within it will help both net makers (to construct TEDs) and fishers (to fit and use TEDs). This will ensure TEDs effectively reduce bycatch (non-target species) while also retaining catches of target and permitted species.

Introduction

The appropriate use of recognised TEDs has significantly improved the escape of bycatch from codends of trawl nets. The benefits of using TEDs are improved product quality through reduced levels of soft and broken prawns, reduced handling (sorting) of bycatch and increased water flow through commercial trawl nets, which can lead to less drag and improved fuel economy.

Legislation requirements

A recognised TED and a recognised bycatch reduction device (BRD) are mandatory in all otter trawl nets of vessels fishing in the Queensland east coast trawl fishery.

BRDs are also required in all beam trawl nets of vessels fishing in the Queensland east coast trawl fishery.

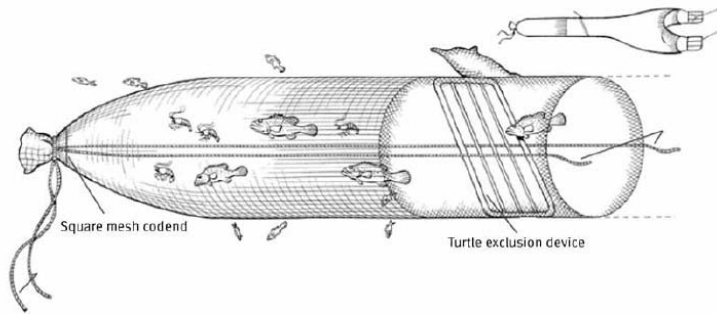


Figure 1. Artist's impression of a TED and a square mesh codend configuration within a net

TED specifications

Grids

TED grids can be any shape but must have the following specifications:

- at least 81 cm wide and at least 81 cm high
- vertical bars extending from the top to the bottom of the grid
- vertical bars no more than 12 cm apart (inside measurement)
- constructed of rigid material
- constructed as a single solid unit with no hinged or collapsible parts
- attached to the entire circumference of the net (preferably with rope or twine)
- installed and maintained at a 30–55° angle in the net.

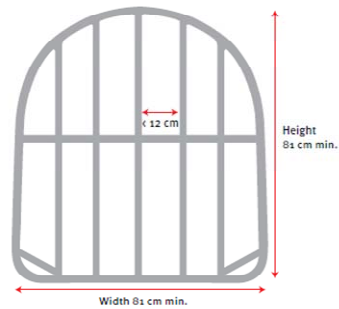


Figure 2. Minimum external TED grid dimensions and maximum bar spacing dimension

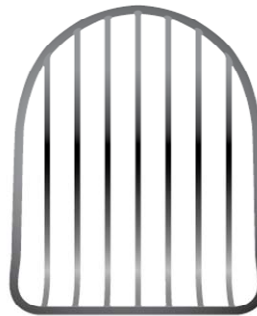


Figure 3. A typical stainless steel TED

Grid angle

The angle at which the TED is installed is crucial for directing large bycatch species to the escape opening. Too steep and animals will jam on the grid; too acute and the nets will collapse and close up (resulting in product loss). The more acute the grid angle the larger the grid needs to be to maintain net height. Figure 4b shows the minimum and maximum grid angles required.



Figure 4a. Acceptable TED installation angle

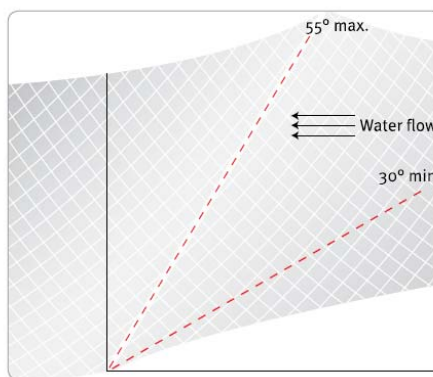


Figure 4b. The TED must be installed in the net at an angle between 30° and 55° from the normal horizontal flow through the net

TED angle formula

To work out the angle of a TED installed in a net, you will need to count the number of meshes difference between the top of the grid and the bottom. Count along a row of meshes from the top of the grid to a point half way around the circumference of the net. The mesh count is the number of meshes between this point and the attachment point of the bottom of the grid (see Figure 5).

Mesh counts provide a guide for the grid's angle of installation and vary according to grid height and mesh size.

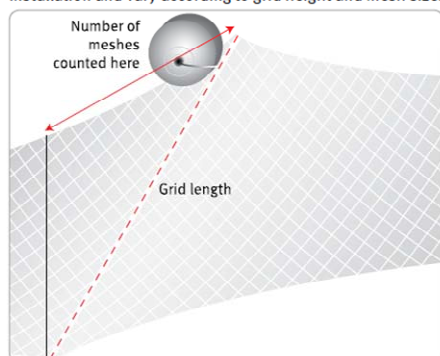


Figure 5. Where to count meshes on a bottom-shooting TED to determine grid angle

$$\text{No. of meshes} = \frac{\text{Grid length} \times \text{Cos angle } (\theta)}{\text{Mesh size}}$$

For example, if a grid measuring 810 mm was inserted at 60° (this allows for the stretch of the net after installation) into a codend with a mesh size of 38 mm, the number of meshes required would be:

$$\begin{aligned} \text{No. of meshes} &= \frac{810 \text{ mm} \times \text{Cos } 60}{38 \text{ mm}} = \frac{810 \text{ mm} \times 0.5}{38 \text{ mm}} \\ &= 10 \text{ meshes} \end{aligned}$$

Note: 60° angle allows for net stretching to 55° angle.

Table 1. Number of meshes required for a 30°, 55° and 60° angle TED (grid size = 810 mm) layover

| Mesh size – centre of knot to centre of knot (millimetres) | Mesh size (inches) | 30° angle (0.866) | 55° angle (0.574) | 60° angle (0.5) |
|------------------------------------------------------------|--------------------|----------------------------------|-------------------------------------|-----------------------------------------------------|
| 28 | 1.1 | 25 | 17 | 14 |
| 32 | 1.25 | 22 | 15 | 12 |
| 36 | 1.4 | 19 | 13 | 11 |
| 38 | 1.5 | 18 | 12 | 10 |
| 43 | 1.7 | 16 | 11 | 9 |
| 44 | 1.75 | 16 | 11 | 9 |
| 48 | 1.875 | 15 | 10 | 8 |
| 51 | 2 | 14 | 9 | 7 |
| 57 | 2.25 | 12 | 8 | 7 |
| 60 | 2.36 | 12 | 8 | 6 |
| 64 | 2.5 | 11 | 7 | 6 |
| 75 | 2.95 | 9 | 6 | 5 |
| 76 | 3 | 9 | 6 | 5 |
| 89 | 3.5 | 8 | 5 | 4 |
| 102 | 4 | 7 | 5 | 3 |
| | | Max. meshes (more = too flat) | Min. meshes (less = too upright) | 5° margin on min. mesh (to allow for stretch) |

See Appendix for TED 60° angle measurement table for other grid sizes.

Single flap nets

Escape openings

There are three recognised openings for a single flap net:

1. Rectangle configuration

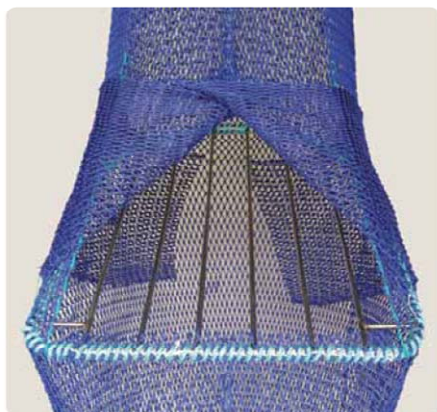


Figure 6a. Single flap, rectangular escape hole opening

Note: Single flap rectangular opening dimensions differ from the double flap rectangular opening dimensions.

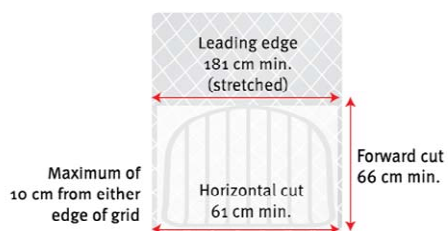


Figure 6b. Minimum requirements for a single flap, rectangular escape hole opening

2. Triangle configuration

- Single and double flap triangle escape opening configurations are identical.



Figure 7a. Single flap, triangle escape hole opening. The TED is attached to the circumference of the net with heavy twine

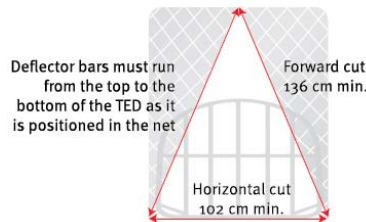


Figure 7b. Minimum requirements for a single flap, triangle escape hole opening

∞ Turtle excluder devices (TEDs)



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3. Combination configuration

- A horizontal cut immediately forward of the grid that is not narrower than the grid—except for 10 cm at either side of the grid—and a minimum of 61 cm, with two combination forward cuts perpendicular from the grid of not less than 51 cm along all points and not less than 50 cm made as an all bar taper—and a resulting leading edge cut of not less than 40 cm stretched—and a stretched measurement of not less than 181 cm when measured between the forward ends of the all point cut at least 51 cm forward of the grid.

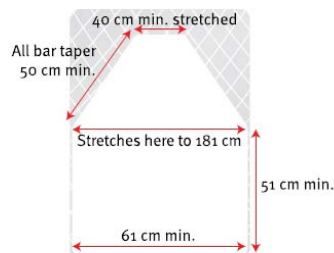


Figure 8. Minimum requirements for a single flap, combination escape hole opening

Single flap

Single flap specifications:

- Must be on the outside of the trawl.
- Must have a maximum mesh size of 50 mm.
- Must be a panel not less than 338 cm x 132 cm, with the 338 cm edge attached to the forward edge of the opening.
- Must not overlap the escape hole cut by more than 13 cm on either side.
- May be sewn down the outside edges no more than 15 cm past the posterior edge of the grid.
- Trailing edge of each panel must not extend more than 61 cm behind the posterior edge of the grid.

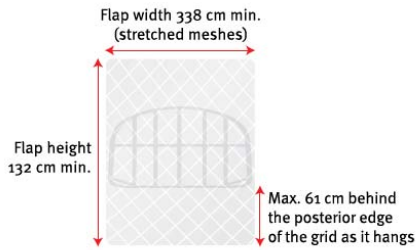


Figure 9a. Minimum flap measurements for a single flap



Figure 9b. Single flap

Turtle excluder devices (TEDs)

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As a guide, the stretched width of the flaps can be measured by counting meshes. That is, flap size (cm) / mesh size (cm) = no. of meshes.

$$338 \text{ cm} / 5 \text{ cm} = 67 \text{ meshes}$$

67 meshes is therefore the minimum number of meshes required in 50 mm mesh to achieve a 338 cm wide (stretched) flap.

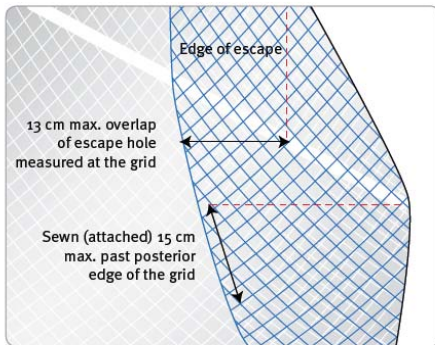


Figure 10a. Maximum flap attachments for a single flap

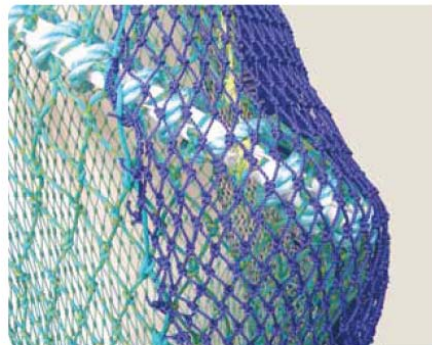


Figure 10b. Single flap

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Double flap nets

Escape openings

There are three recognised opening options for a double flap net:

1. Rectangle configuration

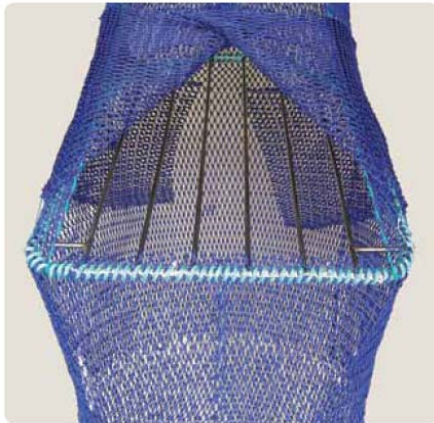


Figure 11a. Rectangular escape opening with double flaps

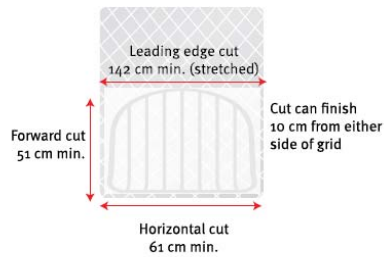


Figure 11b. Measurements for rectangular escape opening with double flaps

2. Triangle configuration

- Triangle escape openings are identical for single and double flap nets (as shown in Figure 6a).

3. Combination configuration

- Double flap combination escape openings are similar to single flap openings except they require a stretched measurement of only 142 cm at a position of 51 cm forward of the grid.

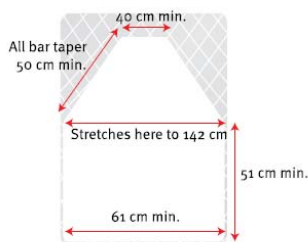


Figure 12. Minimum requirements for a double flap, combination escape hole opening

Double flap

Double flap specifications:

- Must be on the outside of the trawl.
- Must have a maximum mesh size of 50 mm.
- Must have two equal size rectangular panels, each a minimum 147 cm wide.
- Panels may overlap no more than 38 cm.
- Panels may be sewn together only along the leading edge of the cut.
- Panels may be sewn down the entire length of the outside edge of each panel.
- Trailing edge of each panel must not extend more than 61 cm behind the posterior edge of the grid.

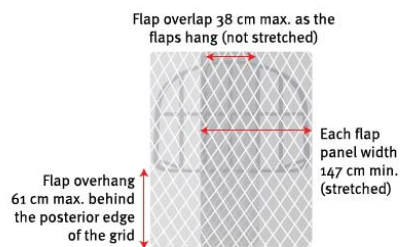


Figure 13a. Measurements for double flap configuration



Figure 13b. Double flap configuration

Helpful flaps hints

- Larger flap width with smaller mesh size helps to close the flap and retain target species—a result of having more knots for water to flow over. Ideally, flaps should be 1.5–2 times the minimum width. The 38 cm overlap can have as many meshes as required (as it is a physical distance of overlap and isn't restricted by the number of meshes).
- Knot orientation of the escape flaps is important, ensuring a 'snug' fit and reduced product loss. The knots should be oriented so the water pressure forces the escape flaps to sit tightly over the escape opening.
- 'Chunky' knots may result in better flap performance.

Floatation

Floats **must** be attached to the top half of all grids with bottom escape openings.

- Floats may be attached inside or outside the net but not to the flap.
- Floats attached inside the net must be behind the grid (see Figure 16).
- The floatation requirements must be satisfied by compliance with either the dimension requirements of paragraph (i) or the buoyancy requirements of paragraph (ii) below.

Float dimension requirements

- For TEDs with a circumference less than or equal to 305 cm, at least:
 - one ethylene vinyl acetate (EVA) or polyvinyl chloride (PVC) float 17.2 cm in diameter × 22.2 cm in length or two EVA or PVC floats 14.7 cm in diameter × 18 cm in length.
 - one hard plastic float 25 cm (10") in diameter or two hard plastic floats 20 cm (8") in diameter or three hard plastic floats 15 cm (6") in diameter.

- For TEDs with a circumference greater than 305 cm, at least:
 - two EVA or PVC floats 17.2 cm in diameter × 22.2 cm in length or four EVA or PVC floats 14.7 cm in diameter × 18 cm in length.
 - one hard plastic float 25 cm (10") in diameter or two hard plastic floats 20 cm (8") in diameter or three hard plastic floats 15 cm (6") in diameter.



Figure 14. Examples of PVC/EVA floats (left) and hard plastic floats (right)

Buoyancy requirements

- Where the buoyancy requirement of the TED is satisfied without the need for additional floatation (i.e. plastic grids), the name of the manufacturer of the TED and density of the material used must be clearly and permanently marked on the TED. The marking must identify the density of the TED material to be less than or equal to seawater (1.025 g/cm³). Where the density of the material is less than that of seawater, no floats are required.
- Where floats are required to meet buoyancy requirements, they may be used in any combination of size and buoyancy such that the combined buoyancy of the floats equals or exceeds the weight of the TED.
 - Floats must be marked in legible raised or recessed lettering that specifies the buoyancy of the float in water (expressed in grams or kilograms).
 - TEDs must be marked in legible raised or recessed lettering that specifies the weight of the TED in air (expressed in grams or kilograms).

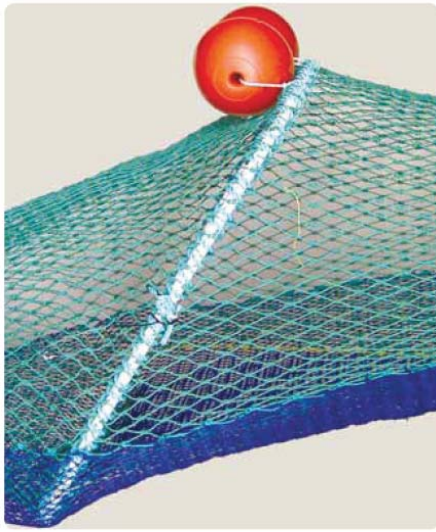


Figure 15. Required attachment and positioning of floats on TEDs. Floats may be attached inside or outside the net but not to the flap



Figure 16. Floats attached inside the net must be behind the grid

Turtle excluder devices (TEDs)

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TED maintenance schedule

Table 2. Schedules required to maintain TEDs during the fishing season

| Component | Inspection details | Inspection frequency | Suggested action |
|----------------|-------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| Grid bars | Bent or damaged bars, bar spacing | Daily | Straighten if possible or replace |
| Grid angle | Loss of angle | In the first week, daily for new grid then weekly | Reattach grid to codend at correct angle |
| Grid bindings | Check for abrasion, frayed rope strands and loose bindings | Weekly | Replace or retighten if necessary |
| Escape opening | Damaged meshes adjacent the opening; mesh slippage around frame of grid | Daily | Repair or reattach adjacent meshes to grid frame |
| Escape flap | Stretched or worn meshes and attachment to codend | Daily | Replace or reattach to codend |
| Floats | Check strong attachment to grid or codend | Weekly | Reattach to grid and codend |

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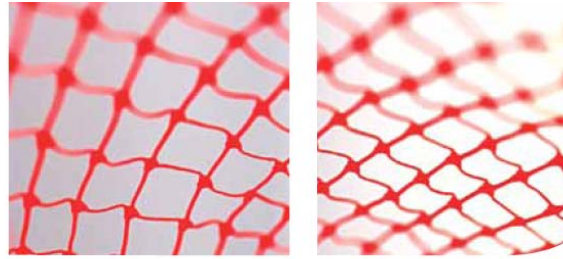
Appendix

Table A. Minimum mesh counts required to meet 55° TED angle. The matrix accounts for variations in grid height and mesh size (centre to centre) and allows the user to calculate the minimum number of meshes required to meet grid angle specifications

| Mesh size (inches) (centre of knot) | 1.5 | 1.7 | 1.75 | 1.875 | 2 | 2.25 | 2.36 | 2.5 | 3 | 3.5 | 4 |
|------------------------------------------|-----|-----|------|-------|----|------|------|-----|----|-----|-----|
| Mesh size (millimetres) (centre of knot) | 38 | 43 | 44 | 48 | 51 | 57 | 60 | 64 | 76 | 89 | 102 |
| TED height (mm) | 11 | 9 | 9 | 8 | 8 | 7 | 7 | 6 | 5 | 5 | 4 |
| 810 | | | | | | | | | | | |
| 820 | 11 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 5 | 4 |
| 830 | 11 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 5 | 4 |
| 840 | 11 | 10 | 10 | 9 | 8 | 7 | 7 | 7 | 6 | 5 | 4 |
| 850 | 11 | 10 | 10 | 9 | 8 | 7 | 7 | 7 | 6 | 5 | 4 |
| 860 | 11 | 10 | 10 | 9 | 8 | 8 | 7 | 7 | 6 | 5 | 4 |
| 870 | 11 | 10 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 4 |
| 880 | 12 | 10 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 4 |
| 890 | 12 | 10 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 5 | 4 |
| 900 | 12 | 10 | 10 | 9 | 9 | 8 | 8 | 7 | 6 | 5 | 4 |
| 910 | 12 | 11 | 10 | 9 | 9 | 8 | 8 | 7 | 6 | 5 | 4 |
| 920 | 12 | 11 | 10 | 10 | 9 | 8 | 8 | 7 | 6 | 5 | 5 |
| 930 | 12 | 11 | 11 | 10 | 9 | 8 | 8 | 7 | 6 | 5 | 5 |
| 940 | 12 | 11 | 11 | 10 | 9 | 8 | 8 | 7 | 6 | 5 | 5 |
| 950 | 13 | 11 | 11 | 10 | 9 | 8 | 8 | 7 | 6 | 5 | 5 |
| 960 | 13 | 11 | 11 | 10 | 9 | 8 | 8 | 8 | 6 | 5 | 5 |
| 970 | 13 | 11 | 11 | 10 | 10 | 9 | 8 | 8 | 6 | 5 | 5 |
| 980 | 13 | 11 | 11 | 10 | 10 | 9 | 8 | 8 | 6 | 6 | 5 |
| 990 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 8 | 7 | 6 | 5 |
| 1000 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 8 | 7 | 6 | 5 |
| 1010 | 13 | 12 | 11 | 11 | 10 | 9 | 8 | 8 | 7 | 6 | 5 |
| 1020 | 13 | 12 | 12 | 11 | 10 | 9 | 9 | 8 | 7 | 6 | 5 |
| 1030 | 14 | 12 | 12 | 11 | 10 | 9 | 9 | 8 | 7 | 6 | 5 |
| 1040 | 14 | 12 | 12 | 11 | 10 | 9 | 9 | 8 | 7 | 6 | 5 |

Optimising TED performance

- Where possible, stretch the meshes around the grid so they remain open during trawling; this has the potential to reduce bycatch and, in the event of a blockage, may prevent water exiting through the escape hole opening. This design may be effective in scallop and deepwater prawn fisheries. To stretch meshes, place the grid in a section of net with a reduced circumference.
- A smaller bar spacing will exclude more bycatch species.
- Bent-bar grids can improve the speed of large animal exclusion and, consequently, reduce product loss.
- Grid orientation can be altered to exclude particular non-targeted groups. For example, downward-excluding grids are most suitable for excluding heavy, negatively buoyant items (such as large sponges or rocks).
- Wrong grid angle can cause prawn and scallop loss or poor bycatch reduction. The relationship between grid angle and size ensures efficient operation. Grid angle should be 30–55°.
- Larger escape openings improve the exclusion speed of large animals and reduce prawn and scallop loss.
- Maintaining the flap material is critical to ensure the flaps close over the escape hole opening effectively.

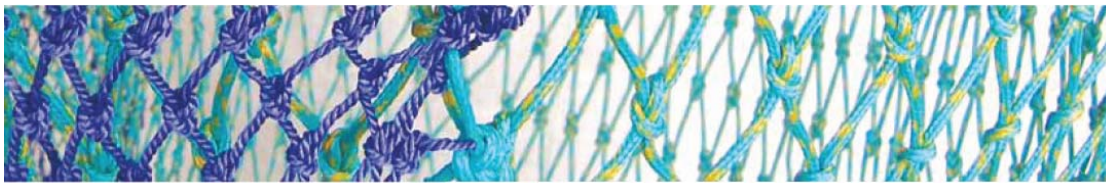


Further information

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Fisheries Queensland
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| | | | | | | | | | | |
|------|----|----|----|----|----|----|----|---|---|---|
| 1050 | 14 | 12 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
| 1060 | 14 | 12 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
| 1070 | 14 | 12 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
| 1080 | 14 | 13 | 12 | 11 | 11 | 9 | 8 | 7 | 6 | 5 |
| 1090 | 14 | 13 | 12 | 11 | 11 | 10 | 9 | 7 | 6 | 5 |
| 1100 | 14 | 13 | 13 | 11 | 11 | 10 | 9 | 7 | 6 | 5 |
| 1110 | 15 | 13 | 13 | 12 | 11 | 10 | 9 | 7 | 6 | 5 |
| 1120 | 15 | 13 | 13 | 12 | 11 | 10 | 9 | 7 | 6 | 5 |
| 1130 | 15 | 13 | 13 | 12 | 11 | 10 | 9 | 7 | 6 | 6 |
| 1140 | 15 | 13 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 6 |
| 1150 | 15 | 13 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 6 |
| 1160 | 15 | 13 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 7 |
| 1170 | 15 | 14 | 13 | 12 | 11 | 10 | 10 | 9 | 8 | 7 |
| 1180 | 16 | 14 | 13 | 12 | 12 | 10 | 10 | 9 | 8 | 7 |
| 1190 | 16 | 14 | 14 | 12 | 12 | 10 | 10 | 9 | 8 | 7 |
| 1200 | 16 | 14 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |

Table B. Mesh counts required to meet minimum flap width dimensions for single and double flaps

| Flap type | Minimum stretched width (each flap) | Max mesh size (centre to centre) | Minimum number of meshes required in 50 mm mesh |
|--------------|-------------------------------------|----------------------------------|-------------------------------------------------|
| Single flap | 338 cm | 50 mm | 66 |
| Double flaps | 147 cm | 50 mm | 28 |

Table C. Mesh counts to be used as a guide for determining the minimum width of leading edge cuts for various mesh sizes for single and double flap configurations (the leading edge cannot be selvaged)

| Flap configuration | Minimum leading edge width (stretched) | Mesh size (mm) – centre of knot to centre of knot | | | | | | | | | | |
|--------------------|----------------------------------------|---------------------------------------------------|----|----|----|----|----|----|----|----|----|-----|
| | | 38 | 43 | 44 | 48 | 51 | 57 | 60 | 64 | 76 | 89 | 102 |
| Single | 181 cm | 47 | 42 | 41 | 37 | 35 | 31 | 30 | 28 | 23 | 20 | 17 |
| Double | 142 cm | 37 | 33 | 32 | 29 | 27 | 24 | 23 | 22 | 18 | 15 | 13 |

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Appendix 4 – Trawl Newsletters



In this edition:

1. Rebate scheme update
2. FINs for TEDs and BRDs
3. BRD extension
4. Legislative amendments
5. Trawl plan review
6. Trawl port meetings
7. Stout Whiting update
8. Beam trawl strategy

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Observer Coordinator
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Ph: 1800 017 116

October 2009

Rebate scheme update

In July 2009, the Honourable Tim Mulherin, Minister for Primary Industries, Fisheries and Rural and Regional Queensland, launched a \$1 million rebate scheme to help reduce bycatch in Queensland's trawl fisheries.

Queensland Primary Industries and Fisheries (QPIF), part of the Department of Employment, Economic Development and Innovation (DEEDI) sent an information pack on the trawl bycatch reduction project and associated rebate scheme to all relevant East Coast Trawl operators prior to the launch.

QPIF has been impressed with the level of interest in the rebate scheme since its release in early July. All East Coast Trawl operators are encouraged to take advantage of the rebate and the chance to adopt the improved TED and BRD designs.

The rebate details are:

- Scallop Square Mesh Codends (SMC) - \$450 for each scallop SMC from 1 July 2009 to 30 June 2010, then this amount reduces to \$225 for each scallop SMC from 1 July 2010 to 31 Dec 2010 (to a maximum of \$2250).
- TEDs - \$250 for each TED from 1 July 2009 to 31 January 2010 (to a maximum of \$2000).

Gear trials on commercial vessels have proven that the new designs reduce the amount of bycatch in trawl shots - by up to 77% in some cases - without significant loss in marketable product. Reducing bycatch in the trawl fishery not only ensures the fishery causes minimal ecological impact, it can improve the efficiency of fishing operations. A reduction in bycatch also results in:

- improved product quality as large non-target species are prevented from entering nets and damaging product
- reduced operating costs due to reduced drag and better fuel efficiency
- cleaner shots, which reduces sorting time

- safer working conditions as handling of large and sometimes dangerous non-target species is reduced.

Additional registered net makers

There are now more places you can purchase TEDs and BRDs to be eligible for the rebate:

- **Fisheries Supply** (Bunleigh Heads)
Ph: 5593 4661
- **Allan Joblin** (Tinana)
Ph: 4123 1002
M: 0417 749 177
- **Darren Fishery** (Callepo)
Ph: 4975 7332
M: 0417 751 298
- **Schultz Fisheries** (Urangan)
Ph: 4125 1485

Further information on the rebate scheme including copies of the scheme guidelines and application forms are available through the QPIF website at www.deedi.qld.gov.au.

For more details on the trawl rebate scheme please contact Anita Ramage on 07 3247 5009.

FINs for non-compliance with TED and BRD specifications

With the launch of the rebate scheme it seems timely to remind fishers of the FINs for non-compliance with TED and BRD specifications currently in legislation.

The penalty for failing to comply with the licence condition to use compliant TEDs and BRDs is \$1000. It is also worth noting that a FIN can be issued without prior warning, that is, on the first detected offence.



BRD Extension

A further boost to the East Coast otter trawl fishery has come from the support of the Fisheries Research and Development Corporation (FRDC) through its funding of a major BRD and TED education and extension project to be run in conjunction with the rebate scheme.

The objective of the project is to promote the use of fisheyes, square mesh codends (SMC) and effective TED designs and to demonstrate to trawl operators the efficiencies of these improved devices. The intention is to improve the uptake of effective devices in the fishery.

The project will use the expert knowledge of net makers and fishers to inform industry participants about improved BRD and TED designs. These people will be engaged to provide assistance on how to construct the devices, and provide tips to ensure their effective use. A user friendly TED and BRD guideline document will be produced to assist operators in the use of these devices. Port visits by QPIF staff will be undertaken to promote the new TEDs and BRDs and to gather feedback on their design.

Have Your Say.....

The BRD technical working group is planning to meet in October to discuss progress on both the trawl rebate scheme and the FRDC extension project. In particular the working group will focus on how best to deliver education components, identifying BRD design elements that may require further testing and deciding the best way to proceed with this testing.

QPIF are asking for feedback from trawl operators regarding the current SMC and Fisheye specifications as listed in the trawl management plan and recent trawl plan amendments (see below):

General Specifications for all SMC's (deep/shallow EKP and scallop)

1. The codend's entire circumference must be square mesh.
2. The square mesh net is no more than 5 meshes from the codend drawstrings of the net.

3. The codend must contain four evenly spaced belly ropes which run the length of the cod end made from at least 12mm polyethylene rope.
4. Nothing may cover any of the square meshes during trawling with the exception of (5).
5. A chaffing mat may be attached to the bottom half of the circumference of the codend but may only be secured to the codend along the leading edge of the mat and half-way along the length of each side of the mat and no more than half of the length of the codend.

Sector Specific SMC Requirements

| | Shallow water EKP | Deep water EKP | Scallop |
|------------------------------|-------------------|----------------|---------|
| Minimum mesh size | 35mm | 45mm | 60mm |
| Minimum codend circumference | 100 bars | 80 bars | 50 bars |
| Minimum codend length | 100 bars | 75 bars | 40 bars |

Fisheye Specifications

1. the opening -
 - (i) is held open by a rigid frame; and
 - (ii) is at least 35cm wide and 45cm long; and
2. the opening is no more than -
 - (i) for a net used to take prawns - 100 meshes from the codend drawstrings of the net; or
 - (ii) for a net used to take scallops - 50 meshes from the codend drawstrings of the net; and
3. nothing covers any part of the opening during trawling.

Please let us know the main issues you have with these specifications (particularly the location of the fisheye and its potential to be combined with other BRDs) to help direct the future testing of gear modifications. Your feedback will be discussed during the next working group meeting and needs to be provided by Friday 8 November.

To have your say, phone Darren Roy on 0428 112 917 or email damen.roy@deedi.qld.gov.au

Legislative amendments

The Government has recently considered a number of changes to the Fisheries (East Coast Trawl) Management Plan 1999 (The Plan). All of these changes have been consulted upon with and agreed on by industry through either the Regulatory Impact Statement (RIS) process or at subsequent port meetings. Recent changes under The Plan and the reasons for them include:

- **Change:** Amendment of the definition of a recognised TED to apply from 1 February 2010.
- **Reason:** The amendment is required to bring Queensland TED specifications in line with international best practice and those required for accreditation to allow export of trawl fishery products to the United States of America (USA). This amendment further refines the existing specifications that mandate the use of TEDs in the Queensland Trawl Fishery. Uptake by industry of the new TED specifications will continue to result in reductions to bycatch including marine turtles.

- **Change:** Redefinition of the boundary for the Southern Trawl Fishery Area.

Reason: This amendment redefines the boundary to capture the major area where fishing for eastern king prawns (EKP) occurs. Redefining the area ensures that if a closure was applied for sustainability reasons the main areas where EKP are caught would be incorporated in the closure.

- **Change:** Redefinition of the threshold limit for the EKP effort restriction.

Reason: Redefining the trigger limit based on the most recent stock assessment and redefined fishing season and area enables better management of effort within the EKP fishery.

- **Change:** Redefinition of the relevant period for the threshold limit for the EKP effort restriction to 1 November to 31 March each year.



Reason: The relevant period has been amended to more accurately reflect the fishing season and the key fishing effort that is undertaken in the defined area.

- **Change:** Redefinition of square mesh codend (SMC) bycatch reduction devices.

Reason: To reflect the most recent research into SMC design and application. The amendment provides legal means for the use of appropriate SMC mesh sizes in the scallop and the shallow and deepwater prawn trawl fisheries.

- **Change:** Amendment of size limits for Balmain bugs. Now divided into three regulated species (rather than one species group)

Smooth bug (Garlic bug)

Ibacus chacei – 10.5cm

Deepwater bug (Velvet bug)

Ibacus altorenanus – 7.5cm

Shovel-nosed lobster (Honey Bug)

Ibacus brucei – 7.5cm.

Reason: Changes to the minimum legal size (MLS) for the three species of Balmain bugs, reflects recent research conducted on the biology of these species, size at maturity and yield per recruit modeling. The proposed MLS are either at or above that required for optimal yield per recruit. The prohibition on possessing berried Balmain bugs will remain.

- **Change:** Removing the prohibition on the take of berried female Moreton Bay bugs.

Reason: Recent research estimates only approximately 23% of bug population is exposed to fishing, and current fishing levels are approximately 31% of maximum sustainable yield. In light of these research findings, QPIF believe the setting of a 7.5cm MLS for berried female Moreton Bay bugs, which is above the size at first maturity, is appropriately precautionary for this species.

As a number of other trawl management arrangements have also been amended over the past 12

months, a complete list of changes is enclosed for your information.

Trawl plan review

A review of the trawl management plan will be announced by QPIF shortly. This will be your opportunity to help shape the future of the Queensland trawl fishery.

For more details on the trawl plan review process please contact Eddie Jebreen on 07 3225 1842.

Trawl port meetings

QPIF officers are coming to a town near you. A series of port meetings are scheduled for late October and early November to discuss the upcoming trawl plan review, industry development and the TED and BRD project.

This is your opportunity to input into the future direction of the trawl industry. See table on the following page for dates and locations of meetings.

Stout whiting update

It is planned that from early November stout whiting licence holders will be able to apply for a general fisheries permit that will allow them to operate in a trial southern expansion area for the remainder of the 2009 season and the entire 2010 season. The expansion area will be a continuation of the current regulated fishing ground as defined by the 20 fathom and 50 fathom lines respectively in a southerly direction to the New South Wales border.

The justification for the trial expansion is based upon investigation into and development of more effective and efficient fishing arrangements for the T4 fishery. This permit period will culminate in a comprehensive review of all data gathered from the T4 fishery and consequently provide direction for future fishing arrangements, including evaluation of permitted gear types and discard species.

As part of the provision of a permit to operate in this area, the T4 industry have agreed to a host of additional monitoring and observer conditions. These conditions are aimed at mitigating potential issues raised by stakeholders during the consultation process conducted prior to this proposal being approved. The T4 industry has once again demonstrated their commitment to a co-management style approach to fishery management via the process they have adhered to in developing and advancing this proposal.

Finally, it should be noted that under current arrangements T4 operators are authorized to operate in southern regulated waters during the 20 September to 1 November closure period.

For more details on the stout whiting fishery please contact Shane Fava on 07 3225 1896.

Beam trawl strategy

QPIF has completed a series of interviews/surveys with Brisbane River beam trawl operators. The spatial and effort information captured from the surveys has been utilised to construct a "weighted river value" map, which reflects the value to the fishery within the Brisbane River.

This preliminary map and a letter outlining the process behind the maps attributes will be sent out to the operators who participated in the survey process for comment. Operator comments are due back on the 14 October.

The operator comments will be fed back into the mapping process to refine map effort values. The final map will be the primary basis for any future developmental compensation/offsetting process.

For more details on the beam trawl strategy please contact Richard Marsh on 07 3225 1870.

Trawl Fishery Newsletter

July 2010

In this edition:

1. US TED Accreditation
2. Stout whiting season 2010
3. Trawl plan review
4. Beam trawl strategy
5. BRD testing
6. TED and SMC rebate scheme update
7. Port meetings schedule

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Observers
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Fishwatch complaints hotline
Ph: 1800 017 116

1. US TED accreditation

The application for approval to export Queensland trawl caught product to the United States of America has been successful.

The US imports more than 540,000 metric tons of prawns each year. This approval gives Queensland trawl fishers access to what will hopefully become an important destination for our sustainably caught prawns.

Since late 2008 the Queensland trawl fishery manager has been working directly with representatives from the United States National Oceanic and Atmospheric Administration, to progress an application for export accreditation for the Queensland trawl fishery.

The Queensland trawl fishing industry has advised Fisheries Queensland that the results of recent market testing for Queensland prawns has been positive with several Queensland trawl fishing industry members actively seeking approvals to export their product to the United States.

People wishing to export prawns to the United States under the new approvals should contact Albert Folmer on (07) 3227 8751 or email albert.folmer@deedil.qld.gov.au to ensure they comply with the relevant conditions.

2. Stout whiting season 2010

At the annual Stout Whiting Industry meeting held on 11 March it was agreed that the TAC for the fishery would be raised to 300 ton per licence for the 2010 season. It was also agreed at this meeting that the annual closure period from 31 December until 1 April would be reintroduced for the 2011 season.

3. Trawl plan review

Fisheries Queensland has formed a number of consultative groups tasked with providing advice on a range of issues critical to the review. One of these groups is the department's Technical Advisory Group (TAG). It comprises of 13 members who were

selected to form the East Coast Trawl Plan review TAG.

To date this group has met twice and discussed a range of issues relevant to the plan's review and focused on feedback from last November's trawl port visits.

The formation of sub-working groups such as the Scientific Advisory Group (SAG), from which advice on specific issues is fed back into the TAG, also remains a central component of the review process. The SAG consists of eight members from a variety of stakeholders and had its first meeting on 8 June 2010.

Advice provided by the TAG will be considered by the Queensland Government and used in the development of the Regulatory Assessment Statement (RAS) and draft Public Benefit Test (PBT) which sets out potential future management arrangements.

For enquires on the trawl plan review process contact Shane Fava on (07) 3225 1896 or email shane.fava@deedil.qld.gov.au

4. Beam trawl strategy

Following the completion of the final round of industry consultation, Fisheries Queensland has used captured spatial and effort information to construct a final "river value" map. The primary purpose of the map is to reflect the value of areas within the Brisbane River to the beam trawl fishery.

This map will be the primary basis for any future development and educational mitigation. Developers are required to consider alternative options prior to the discussion of any agreements.

The strategy has also facilitated communication between developers and the beam trawl industry. An example of this is the beam trawl industry and the Brisbane City Council's City Cat operators meeting to discuss and resolve Brisbane River traffic issues.

For more details on the beam trawl strategy please contact Richard Marsh on (07) 3225 1870 or email richard.marsh@deedil.qld.gov.au



Queensland Government

5. BRD testing

Fisheries Queensland continues to encourage members of the trawl industry to develop new and innovative designs for BRDs. The continual refinement of current devices and the development of new ones are central to minimising non-target bycatch without compromising the economic viability of the fishing industry.

Feedback provided by industry on the performance of SMCs in the scallop fishery has led to Fisheries Queensland testing proposed changes to the devices.

Fisheries Queensland staff spent four nights testing the impact of reducing the length of the square mesh codend to 33 bars, increasing the amount of diamond mesh at the rear of the square mesh section to 15 meshes and removing belly ropes from knotless netting, all of which industry suggested. Preliminary results indicate that these design changes do not reduce the bycatch reduction capabilities of the scallop SMCs.

SMCs were also trialed in the shallow water prawn fishery to determine if there was potential to develop this device as an effective BRD within this sector. Various mesh sizes were trialed (35, 38, 48 and 63mm) along with a half round SMC. These codends have been provided to industry for further testing and results will be provided once finalised.

To provide feedback on alternative BRD designs or to participate in the BRD industry testing program please contact Darren Roy on 0428 112 917 or email darren.roy@desd.qld.gov.au.

6. TED and SMC rebate scheme update

All East Coast Trawl operators are encouraged to take advantage of the rebates and the chance to adopt the improved TED and BRD designs.

TEDs

An objective of the rebate scheme was to assist fishers in meeting the costs of complying with new TED specifications. These specifications were introduced to obtain accreditation to export Queensland trawl-caught product to the United States of America.

At the end of June, Fisheries Queensland had received 160 TED rebate applications and a further 50 orders are with netmakers but are still outstanding. Approximately 350 licence holders on the East Coast have participated in the scheme. This has been a fantastic response and is expected to provide industry with an estimated \$260,000 in assistance.

The TED component of the rebate scheme concluded on 31 January 2010. Netmakers however have received an extension to clear order backlogs that resulted from interest in the scheme. All fishers not holding an official order for compliant TED's should now be using TED's that comply with the new designs. Registered netmakers have provided Fisheries Queensland with a list of fishers who are holding official TED orders. If you are in doubt about the authenticity of your order please contact Darren Roy.

The current compliance exemption for individuals holding official TED order forms will expire on 31 December 2010. After this date full enforcement of TED legislation will occur and order forms which currently grant a TED compliance exemption to individuals will become invalid.

All licence holders will be required to meet TED legislation in full on 1 January 2011; in addition, no TED rebate scheme applications will be accepted by Fisheries Queensland after 31 December 2010.

Fisheries Queensland has produced the accompanying booklet that summarises the TED legislation currently enforced in the East Coast Trawl Fishery. The booklet aims to explain and clarify the legislation.

Square Mesh Codends

The advantages of Square Mesh Codend (SMC) bycatch reduction devices in the sauer scallop fishery have been scientifically proven.

The current rebate scheme for the purchase of scallop SMC is an opportunity for fishers to trial the devices and provide any feedback to Fisheries Queensland prior to them becoming mandatory in the sauer scallop fishery. To assist fishers in this, the rebate scheme for scallop SMC has been extended until 31 December 2010.

Fishers will be eligible for the full \$450 rebate per SMC right through until 31 December 2010.

Eligible licence holders can claim a rebate on up to five scallop SMCs per licence. They can claim for SMCs they have constructed themselves provided they have registered as a net maker.

Fishers constructing their own gear are eligible to claim rebates and should contact Darren Roy on 0428 112 917 or email darren.roy@desd.qld.gov.au to find out how.

Given the current demand on net makers it is essential that SMC orders are placed well in advance of the rebate deadline to ensure the gear is completed and paid for before the rebate period ends.

Port meetings

A series of trawl port meetings are planned for 19 – 26 August. The purpose of these meetings is for Fisheries Queensland to provide feedback on the TED rebate scheme, promote the scallop SMC rebate scheme and fishery BRDs, as well as discuss options for BRD testing programs.

The meeting schedule is contained on the following page.

7. Port meetings schedule

| Date | Location | Time | Venue |
|---------------------------|-------------|------|-----------------------------------------------------|
| Wednesday, 18 August 2010 | Cairns | 10am | Park at the old trawler base behind sugar terminal |
| Thursday, 19 August 2010 | Townsville | 10am | Park at the end of wharf, Ross River Marina |
| Friday, 20 August 2010 | Mackay | 10am | Mackay Fish Market, River St |
| Saturday, 21 August 2010 | Gladstone | 10am | Trawl Wharf, Alf O'Rourke Drive |
| Sunday, 22 August 2010 | Bundaberg | 10am | Midtown Marinas |
| Monday, 23 August 2010 | Hervey Bay | 10am | Park at the end of the wharf |
| Tuesday, 24 August 2010 | Tin Can Bay | 10am | Trawl Wharf, first shed, on grass section |
| Wednesday, 25 August 2010 | Mooloolaba | 9am | Browns Slipway Wharf, near office |
| Wednesday, 25 August 2010 | Scarborough | 2pm | Park Opposite Morgans Seafoods |
| Thursday, 26 August 2010 | Southport | 9am | Trawler Basin Car Park, Southport |
| Thursday, 26 August 2010 | Tweed Heads | 2pm | Fishermans Car Park Boat Harbour Drive, Tweed Heads |

Trawl Fishery Newsletter

October 2010

In this edition:

1. Get your TED and SMC rebate now
2. Port visits
3. Trawl plan review
4. Trawl Industry Development Plan
5. SMS notification of VMS polling
6. EPBC export approvals
7. East Coast Trawl Fishery logbook (OT09) – reminder
8. Beam trawl strategy
9. Future trawl news

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Licensing
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EPBC approvals
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Observers
Dr Julia Davies
Observer Coordinator
Ph: (07) 3225 1898

**Fishwatch complaints
hotline**
Ph: 1800 017 116

1. Get your TED and SMC rebate now

The cutoff date for complete TED rebate applications is 31 December 2010.

Fishers who have not yet submitted their eligible TED rebate application forms or have outstanding information being requested by Fisheries Queensland need to finalise their applications and submit them to Fisheries Queensland by 31 December 2010.

No new applications will be accepted after this date and any incomplete applications will no longer be eligible for the rebate money.

Fishers ordering their scallop SMCs through a professional net maker need to have placed their order with the net maker by 31 December 2010.

Net makers will have until 15 May 2011 to fill orders. Fishers will be eligible for rebate money up until this date.

Fishers constructing their own square mesh codends need to have their complete SMC rebate application submitted by 31 December 2010.

To be eligible for a rebate for making their own gear, fishers need to register as a net maker (if they have not already done so) and have their application lodged prior to December 31 2010.

To check on your application, register as a net maker, or to have any queries answered please contact Darren Roy on 0428 112 917 or email Darren.Roy@deedi.qld.gov.au

2. Port visits

Fisheries Queensland has recently completed 11 port visits between Cairns and Tweed Heads. A total of 69 people attended the meetings with the majority of the people being from the northern ports of Cairns, Townsville and Mackay. The aim of the visits was to:

1. Provide industry with a wrap-up on the TED rebate scheme and providing clarification on the updated TED specifications and legislative requirements
2. Promote the scallop SMC rebate scheme which runs until 31 December 2010
3. Promote the use of Fisheye BRDs, prawn SMC testing and underwater cameras
4. Provide updates on the trawl plan review process and how fishers can get involved in the review process.

The gear related issues raised during the port visits included:

- Locating fisheyes at 50 meshes from drawstrings
- The use of square mesh codends in shallow water fisheries
- Shallow water prawn SMC product selection prior to the Christmas period
- The length of scallop SMCs on small boats and their ability to be able to spill them effectively due to lifting height restriction

- Operators wanting more flexibility to be able to trial design changes to BRDs.

Where to from here:

Fisheries Queensland is planning to provide fishers with free fisheyes to trial and will seek feedback regarding their optimal location in the codend to be an effective bycatch reduction device.

Fisheries Queensland plans to contact trawl licence holders and operators to participate in the underwater camera program, to gather footage of functioning fisheyes, SMCs and TEDs and any other gear tuning they would like to do. During daylight, Fisheries Queensland can provide fishers with the opportunity to tune boards and chains and to view the TED and BRD in the codend. At night under fishing conditions Fisheries Queensland will be looking at gathering footage of functioning TEDs and BRDs to help refine and develop the devices. Water clarity is a key factor in determining the quality of footage.

3. Trawl plan review

The Trawl Plan Review Technical Advisory Group (TAG) has continued their schedule of regular meetings over the past months as they work through a host of issues relevant to the trawl fishery.

The TAG has had significant input into a number of discussion papers on which TAG members are currently seeking feedback on. The papers cover issues such as bycatch reduction

devices (BRD), permitted species, and alternative symbol use on board licensed trawl vessels. The intent of the papers has been to provide TAG members and stakeholders with an avenue for the preparation of advice to Fisheries Queensland on specific items being considered in the review of the management arrangements. If you have any questions about these issues please contact your local QSLA trawl representative for further information or Shane.Fava@deedi.qld.gov.au

More recently the TAG had the opportunity to work through an exercise aimed at determining the strengths and weaknesses of a range of different governance scenarios. Four "extreme" management scenarios were developed by the Trawl Plan Review Scientific Advisory Group (SAG) solely for the purpose of "pulling them apart" to test their theoretical strengths and weaknesses.

In brief, the concept behind this approach allows for the comparison of numerous issues and options for potential change within the trawl plan and identifies the impact such changes may have across the whole fishery. This technique provides many benefits over approaches that are capable only of addressing singular issues independently of each other.

At this stage we are awaiting the results of the analysis, when available it is the intent of FQ to organise a larger stakeholder workshop tasked with considering the results of this analysis and the development of workable future management scenarios for the trawl fishery.

4. Trawl Industry Development Plan

The East Coast Trawl Industry Development Plan is due for release soon.

To keep up to date with activities relating to the plan and to be able to contribute to its implementation, please register your interest by sending an email to cfou@deedi.qld.gov.au or calling 07 3239 0081.

5. SMS notification of VMS polling

Fisheries Queensland is currently trialing an automated system whereby licence holders operating in commercial fisheries requiring VMS can be notified via SMS in the event of the vessel's VMS unit failing to poll. Immediate SMS notification will allow fishers the opportunity to check their unit and, if possible, rectify the problem. Once the VMS unit proceeds to function properly again, the fisher will receive a confirmation SMS notifying them of this.

Invitations to participate in this trial beginning Friday, 1 October 2010 are being extended to all licence holders currently using VMS. If you would like to receive SMS notifications of your VMS unit failing to poll please contact 07 3224 8883.

6. EPBC export approvals

The current Commonwealth export approval for the ECOTF is valid until 29 November 2010 and the fishery is now due for assessment for ongoing export accreditation.

In September 2010, Fisheries Queensland provided a submission to the former Department of Environment, Water, Heritage and the Arts (DEWHA). The submission was to address the Australian Government Guidelines for the Ecologically Sustainable Management of Fisheries, 2nd edition (the Guidelines) and to provide updates on the implementation of the recommendations made in the original DEWHA assessment.

The submission will be used to assess the operation of the fishery for the purposes of parts 13 and 13A of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

To register your feedback on the submission visit <http://www.environment.gov.au>. The final date for public comment is 15 October 2010.

7. East Coast Trawl Fishery logbook (OT09) – reminder

Fishers are reminded that a new Gear Description Sheet is to be

completed at the end of January each year and whenever you change gear configuration or change your vessel details.

The 'Trawl Gear Code' must also be reported in your logbook on each fishing day. This code comes from the bottom of your Gear Description Form in the front of your logbook.

All effort information should be completed in the East Coast Trawl Fishery Logbook for each fishing day. This includes the trawl gear code, time shot away (24 hour time), number of shots, total hours trawled and the depth.

8. Beam trawl strategy

As part of the Brisbane River Beam Trawl Strategy process, consultation with licence holders and relevant stakeholders is required. This is to provide direction on how any available funds resulting from the mitigation of proposed developments should be utilised.

In line with the Brisbane River Beam Trawl Strategy, the intent of these funds is to provide the maximum long term benefit to RIBTF licence holders/operators who are affected by increased foreshore and in-stream development in the Brisbane River.

Following recent discussions between Queensland Fisheries and representatives of the Queensland River and Inshore Beam Trawl Fishery (RIBTF) a

number of options for the utilisation of funds have been identified. The options that have been discussed are:

- Removal of low effort (buyback of T5 symbols)
- Increased infrastructure and mooring facilities
- Rehabilitation of degraded trawl areas
- Allocation of monies to beam trawl operators/licence holders based on historic catch effort

Fisheries Queensland wants your feedback and comments as to which approach you believe will provide the greatest long term benefit to industry. To provide your feedback contact Shane Fava on 07 3225 1898 or email shane.fava@deedi.qld.gov.au

9. Future trawl news

Fisheries Queensland has taken a fresh approach to the way we interact with Queenslanders by offering a new customised information service, *direct*. *direct* allows the latest fisheries news to be delivered straight to your email inbox. Receive information on the topics that interest you by subscribing to this free service via our website at www.dpi.qld.gov.au and click on 'latest info – direct'

Appendix 5 – Minutes from BRD Technical Advisory Group

Technical Working Group

MEETING 1/2008

13 October 2008

Room 2A, 2nd Floor
Primary Industries Building

RECORD OF MEETING

1.0 PROCEDURAL MATTERS

1.1. Welcome and open meeting

The meeting was opened at 9:45 am by the Chair Mr Lightowler

1.2. Apologies

Nil.

1.3. Confirmation of Agenda

Nothing further was added to the agenda.

1.4. Introductory comments from Chair

Mr Lightowler noted all of the meeting attendees:

Mark Lightowler (Chair - DPI&F)

Greg McCaughey (EPA)

Matt Campbell (DPI&F)

Marty Hicks (QSIA)

Mike Soady (Net maker)

Robert (Blue) Elkerton (Net maker)

Col Flaherty (Fisher)

Dave Sterling (Fisher)

Amy Jones (DPI&F)

Cameron L'Estrange (EPA)

Eddie Jebreen (currently EPA to be DPI&F)

EPA REBATE SCHEME

1.5. Update from EPA - oral

GM noted that as a part of the Beattie Government election commitment in 2006 EPA was given incentives worth \$4 million over four years to fund design and demonstration of hoppers and a rebate for trawl operators to purchase and install these devices.

It was noted that at present trawlers are not mandated, the rebate has been reduced to a single tier of \$30 thousand and the EPA are still waiting on ministerial approval to commence using the funding.

Industry member DS took this opportunity to note that a crisis meeting was held between DPI&F and industry at the end of Aug (?) and many from industry believe that this money is not being directed where it is needed most. GM acknowledged the view however noted that the funding had already been allocated.

ACTION:

- **Amy Jones to find the results and record of this meeting and make available to all.**

QDPI&F REBATE SCHEME

Prior to discussion of the agenda the Chair took this opportunity to note the vision and role of the technical working group. DPI&F has received \$1.5 million of the \$4 million that was allocated to EPA to spend on bycatch reduction devices. This includes a rebate scheme for Square Mesh Codends (SMCs), Turtle Exclusion Devices (TEDs) and other bycatch reduction devices (BRDs). The \$1.5 million will also be used to organise operational support and education for bycatch reduction devices.

It was confirmed that currently SMCs have not been made mandatory. Within the scope of this working group it was clarified that the SMCs only referred to the scallop fishery.

Industry noted that there was a recognised problem and they would rather have the money go towards lights and videos on the trawls to document what is actually happening on the sea floor.

Industry members questioned why Qld should move towards USA TED standards.

Morning Tea 10:40 am.

3.1. Square Mesh Codends (SMCs)

Net makers agreed that to make a scallop SMC without a TED would cost between \$600-900.

There are presently around 200 fishers in the scallop industry that would need to have SMC to continue operations. The Chair proposed that the rebate scheme commence 1 January 09 and this was supported by all members. The group discussed that fishers would need to be able to claim the rebate for at least 5 nets.

Industry suggested a phase in period with a decreased percentage of the rebate after one year to encourage industry individuals to change over quickly.

The group also discussed the option of changing legislation regarding mesh size from its current minimum 75mm to a new minimum of 90mm. Very few fishers are actually using such a small size however they are allowed to in the legislation. This may cause a problem when a standardised design is created which will be used when making decision on allocation of the rebate.

Several options were considered:

OPTION 1:

The net maker claims the rebate directly, then in turn takes this amount off the price they charge for the net.

OPTION 2:

The Fisher pays the full price for the net and then provides information to DPI&F to claim the rebate back.

- ⇒ Fisher will be required to send in an application form
- ⇒ Fisher will be required to send in receipt of sale
- ⇒ Is there a need for a list of registered net makers who could make the SMCs in conjunction with the DPI&F rebate?
- ⇒ The net maker will need to complete an order form so those who order before the rebate is decreased will not be disadvantaged if their net is not made in time.

OPTION 3:

The Fisher makes his own nets which would have to be inspected by a knowledgeable field officer before any rebate is given.

- ⇒ would be extremely costly to have a field officer having to conduct site visits
- ⇒ field officer would have to be adequately knowledgeable, probably not DPI&F staff
- ⇒ would likely need a tagging system to make sure officer isn't checking the same net in a different location (cheating the system)
- ⇒ the design is important to the SMC working effectively and aiding the fisherman and this would not be standardised if fishers are making their own nets

OPTION 4:

Bulk SMC construction project goes out for tenure and then ultimate sale at cheaper price due to cheaper materials bought in bulk.

- ⇒ Problem of nets requiring making and distribution along entire east coast of Qld.
- ⇒ Concern about if it is a cheap product
- ⇒ Huge amount of work for few net makers to complete
- ⇒ Those who would put in for the tenure would be looking to maximise their profits and would be less concerned with quality
- ⇒ Many fishers already have their own net makers who they know to produce quality product

RESOLUTIONS:

- **Rebate parameters:**
 - **1st 12 month period from 1 January 2009 rebate at 50% of net cost**
 - **2nd 12 month period from 1 January 2010 rebate at 25% of net cost**
- **Maximum of 5 nets per license holder can be claimed back**
- **Maximum rebate per license holder is \$4, 500.00**
- **SMC must be similar and based off the standardised design to be eligible for rebate**
- **Fisher to pay full price to net maker and claim the rebate through DPI&F after**
- **Only nets made through registered net makers will be eligible for rebate**
- **Rebates not available for nets purchased prior to commencement of the rebate scheme.**

Maximum spent on SMC is \$450, 000.00 of the \$1.5 million

ACTIONS:

- **DPI&F to design an application form (include: general information, attach receipt note, area for cost, net information [number of: bars, diamond mesh on ends, bras around; material specs i.e. diameter, knotless/knotted, belly ropes])**

- **A minimum standard or guideline to be developed. Mike Soady to work with net makers to achieve a standard design/pattern for SMC within two weeks of the meeting (completed by 27 October 2008)**
- **Matthew Campbell to distribute information on BRD research to everyone in group**
- **DPI&F to consider appropriate mesh size**

Eddie Jebreen left the meeting at 12:00 pm.

Lunch break 12:35 – 12:55 pm

3.2. Turtle Exclusion Devices (TEDs)

The working group discussion was based on the assumption that at the beginning of 2009 something will be introduced regarding TED designs which will then be mandatory in 12 months.

There was discussion regarding the cost of old TEDs to be converted. DPI&F had been led to believe at port visits that a good proportion of TEDs met the USA standard. Working group members advised that all TEDs would need to be changed to meet USA standards. Consequently all assumptions and allocation of costs were based on there being 400 working boats in Qld that would need TEDs. The working group initially was looking at a rebate of 25%, however increased this to 33%.

All calculations are based on a cost price of \$650 for a new TED.

RESOLUTIONS:

- **Rebate parameters:**
 - **Wanting scallop and prawn types of nets fitted with TEDs - approx. 100**
 - **DPI&F to reimburse 33% of TED cost for a maximum of 8 nets per license holder**
 - **Wanting one type of net fitted with TEDs – approx. 300**
 - **DPI&F to reimburse 33% of TED cost for a maximum of 4 nets per license holder**
- **Fisher to pay full price for nets and claim rebate through DPI&F after**
- **Only nets made through registered net makers will be eligible for rebate**
- **Rebates not available for nets purchased prior to commencement of the rebate scheme.**

Maximum spent on TED is \$429, 000.00 of the \$1.5 million

ACTIONS:

- **DPI&F to design an application form (include: general information, attach receipt note, area for cost, net information)**
- **A minimum standard or guideline to be developed. Mike Soady to work with net makers to achieve a standard design/pattern for SMC within two weeks of the meeting (completed by 27 October 2008)**

It is worth noting that this decision is still to be based on the results of the RIS.

3.3. Other Bycatch Reduction Devices (BRDs)

The working group agreed that in general testing of new BRDs would cost around \$30 000 per device. Mr Campbell noted that he would be surprised to see more than 3 new devices needing to be tested in one year. However to be effective in testing these new devices and to ensure they work as efficiently as possible camera shots are highly desirable.

RESOLUTIONS:

Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

- **DPI&F contribution:**
 - **A total of \$200, 000 will go towards DPI&F to allow for adequate testing of new ideas**
 - **This will cover the cost of new equipment (Cameras), accurate DPI&F testing of innovative ideas and also a small amount will be designated to aiding fishers in implementing ideas for bycatch reduction devices**

Maximum to be spent on Other BRDs is \$200, 000.00 of the \$1.5 million

OPERATIONAL

See Agenda item 5.0.

EDUCATION/TESTING

Agenda items 4 and 5 were joined together in discussion and dealt with at the same time due to their similarities.

The options and problems encountered are detailed below:

OPTION 1:

An operations manual or a 'guide for dummies', including information on how to maximise use of nets, possible causes of problems, etc.

- ⇒ Fishers would not use it
- ⇒ Fishers would not have faith in it
- ⇒ The fishers would not need a beginners guide as they are not starting out in the fishery
- ⇒ Industry agreed that fishers would probably have very little response to a book like this

OPTION 2:

Operational support could be given as a dedicated staff member available by phone to answer fishers' questions and advise where necessary (i.e. how to install devices, possible solutions for any problems encountered)

- ⇒ Problems arise with trying to describe problems over the phone to someone that doesn't know the boat
- ⇒ Would need to have someone with suitable knowledge of the boat setup
- ⇒ Fishers more likely to contact their net maker for advice

OPTION 3:

Industry recommended that this money could be spent on marketing and other good news stories to help the general public better understand the Qld trawl industry.

- ⇒ The money was specifically allocated to be spent on bycatch reduction devices not the trawl fishery as a whole.

OPTION 4:

An individual member of industry suggested production reports where fishers would write in with how much of each species of fish (including bycatch) that they caught over the last year. These reports were suggested to occur only once a year and it was suggested that these documents are audited to ensure accuracy of data collected.

- ⇒ This was voted against by almost all meeting attendees as there are too many issues with accuracy of information, and added paperwork pressures on fishers.

OPTION 5:

Regional Workshops could be organised to educate fishers about the different types of bycatch reduction devices that can be used in each fishery, and to provide a forum to talk about the benefits and problems which users may find.

- ⇒ Industry pressed to have this as a non-DPI&F event as they felt that fishers would be more likely to attend if they did not think this was an occasion for “preaching” from the department.
- ⇒ There were concerns raised about whether the event would manage to keep consistency along the coastline without DPI&F organising.

OPTION 6:

The Chair revised whether the working group considered it would be of benefit to industry to have an accredited bycatch friendly fishery. Industry supported the idea but recognised further work is needed to develop the concept.

- ⇒ Also there was initial talk about the EPA EcoBiz management opportunity which will also be addressed at the next meeting.
- ⇒ It was suggested that there could be financial incentives at each step of the EPA Eco Biz program.

RESOLUTIONS:

- **DPI&F is to give more thought to accreditation and EcoBiz management.**
- **Options 5 and 6 will be discussed in more detail at the next meeting**

Maximum spent on Operational/Educational will be the remainder of the \$1.5 million

Maximum to be spent on External Administration is \$100 000 of the \$1.5 million.

Marty Hicks left the meeting at 2:45 pm.

The meeting was officially closed at 3:20 pm with afternoon tea served afterwards.

6.0 NEXT MEETING

It was noted that no details of the next meeting were organised. Prior to the next meeting there will be a change over in the Chair to Mr Jebreen and he will then organise the next gathering of the technical working group for bycatch reduction devices.

Expense List:

Maximum spent on SMC is \$450, 000.00 of the \$1.5 million

Maximum spent on TED is \$429, 000.00 of the \$1.5 million

Maximum to be spent on Other BRDs is \$200, 000.00 of the \$1.5 million

Maximum spent on Operational/Educational is 321, 000.00 of the \$1.5 million

Maximum to be spent on External Administration is \$100 000 of the \$1.5 million.

**BY CATCH REDUCTION DEVICES
TECHNICAL WORKING GROUP**

**27 NOVEMBER 2009
09:00AM – 04:00PM**

**PRIMARY INDUSTRIES BUILDING
("The Space") Ground Floor, 80 ANN ST, BRISBANE**

Minutes of Meeting

Attendees: Darren Roy (Fisheries Queensland, Chair), Eddie Jebreen (Fisheries Queensland), Anita Ramage (Fisheries Queensland), , Matt Campbell (QPIF), Tony Courtney (QPIF), Mike Soady (net maker), Blue Elkerton (net maker), Wally Hill (net maker), Darren Flaherty (fisher/nets), Dave Sterling (fisher), Fiona Hill (NSW Fisheries), Dave Brewer (CSIRO), Winston Harris (QSIA), Kev Baker (fisher, QSIA).

Apologies: Greg McCaughey (EPA)

Introductions: Attendees were introduced and supplementary documentation was tabled under agenda item 5.2 by Mr Roy describing a charter proposal by Dr Courtney and various other BRD designs from industry for consideration for further testing. The agenda was confirmed by all attendees. Mr Roy provided some background information about the rebate scheme and stated that only 15 claims had been received so far.

AGENDA

1 PROCEDURAL MATTERS

- 1.1 Welcome and open meeting
- 1.2 Apologies
- 1.3 Confirmation of Agenda
- 1.4 Introductory comments from Chair
- 1.5 Matters arising from BRD TWG Meeting 1 – 13 October 2008

2 UPDATE FROM NORTHERN PRAWN FISHERY – TEDs and BRDs (Dave Brewer)

3 UPDATE FROM NSW FISHERIES – BRDs (Fiona Hill)

4 TED BRD REBATE SCHEME

- 4.1 Discussion of rebate scheme progress and current deadlines.

----- Morning Tea (10:30am – 11:00am) -----

5 TESTING

- 5.1 Evaluation of feedback on current specifications
- 5.2 Prioritising TED/BRD design elements for further testing
- 5.3 Discussion on the strategy for further testing of BRD designs
- 5.4 Strategy for further testing of TED designs

----- Lunch (1:00pm – 1:45pm) -----

6 EDUCATION AND EXTENSION

- 6.1 TED/BRD Design and Use Guidelines
- 6.2 Regional Gear Workshops
- 6.3 Provision of external expert advice
- 6.4 Provision of regular assistance in ports
- 6.5 Video Footage of gear
- 6.6 Other Ideas

7 NEXT MEETING

MS raised some issues regarding the use of Fisheyes in the trawl fishery. He stated that in short codends where pressure reaches fish eye this siphons product out. Need longer codend to be effective. TC stated research at 50 meshes from end showed no loss of product.

2. Update from NPF – Dave Brewer

- TEDs introduced in 2000
- Bigeyes introduced in 2001 – trials undertaken, not doing much, lost a bit of prawn, didn't exclude much bycatch. Moved towards square mesh panels and fisheyes
- Fisheyes 120 meshes from drawstring in NPF.

Been stagnant for a while in terms of research and monitoring but recently some momentum for development of new devices.

NPF program for new devices – 3 stage process

1. submit design
2. give us some information from use on their boat
3. AFMA observer on board

Eg, devices that have been through this process -popeye, wally's bigger codends, lights on head rope, witches hat designs (trials just completed on witches hat just in front of a square mesh panel). Use flume tanks for testing before taking gear trials out onto boats.

- Most people use square mesh or fish eyes. Better sea snake reduction if the fisheye is up closer to the catch.
- Objectives from a comfrab proposal
Identifying reference values for mapping success of bycatch mitigation. Will help to benchmark

Objectives:

1. Review and document current BRDs
2. Review current standards for approving new TEDs and BRDs
Eg. Achieve more than 10% bycatch reduction (compared with standard diamond mesh
No requirement for US testing before a new TED can be introduced. This is a bit of a loophole.
3. Assess effectiveness of current BRDs

Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

4. Recommend appropriate targets for bycatch reduction in order to meet NPF objectives

Use risk assessments for bycatch species

DS - Utilisation of bycatch?? DB - Comes down to cost

EJ – largest community concern is that trawlers can target these other species. Need to deal with the regulated waste issue. If gear is selective enough to prevent effective targeting of other species – then could argue that it is genuine bycatch and is wasted if cannot be kept.

May not be through the addition of species to the permitted species list, may be administered through a bycatch policy.

All tiers or government is interested in waste/discard reduction.

AFMA has a no discard policy.

DB – European fisheries allowed to keep everything

MC – recreational anglers would not support a position to allow trawlers to keep everything.

TC – report on global trend in reduction of bycatch – improved gear, better use of byproduct – really it is just greater utilisation of bycatch

3. NSW UPDATE – Fiona Hill

Don't consider SMC a bycatch reduction device

No TEDs

Compulsory in the estuary prawn fishery – very prescriptive.

Put straight into legislation and then had to extend the implementation date numerous times

Ocean trawl fishery – whiting is now very important, the size of target species have changed since the original research was done

33 meshes place for BRD but

Fishers saying: SMC mesh a lot of fish which is saleable; losing product through the BRDs; SMC attract sharks.

Currently have to close estuarine fishery when it floods due to bycatch issues. Considering option to allow fishing to continue if grids are used as a BRD.

TC – need targets for bycatch reduction, over arching policy position to be included in the new trawl plan. Looks like our original target (20% reduction) may have been met but largely due to the reduction in trawl fishing effort. Was not robustly assessed. Need to look at new objective and decide whether you consider effort as well as bycatch or use catch rates

EJ – doesn't see value in percentage values for bycatch reduction. Difficult to deliver as it is up to industry. Don't want these sort of targets in legislation, would be done through policy.

4. TED Rebate scheme

Limited rebates have been processed to date. Recognise there are significant back orders but after talking to net makers, currently there would only be approximately 100 net orders outstanding as of 1 February 2010 (based on orders as of Monday 23 November)

What are the reasons for such a low uptake?? Is industry already compliant? Perhaps people to make their own nets are not aware they can claim. If they register they can = media release is being sent out today so industry will be advised through that they are eligible for the rebate.

Industry do not agree with the angle of the grids and so they may be holding back hoping that the angle of the grid will be changed. If the TEDs are designed properly, the angle of the grid should

work. If you change the angles of the grid you will also have to change the length of the grid to not change the size of the throat of the net which changes the water pressure and flow.

EJ – the grid angle will not be changed.

Issues:

- Subsidy to net makers and then the net makers can pass on the rebate to the fishers.
- Net makers agreed that if they called around to fishers they would get a lot of additional business.
- Concerned that people that make their own gear are making gear that is not effective and then rubbish the specifications but it may be that they have not constructed them correctly.

Reasons for limited uptake

1. back log with net makers
2. industry not aware they can claim rebate if they make their own nets
3. industry not happy with grid angle
4. Some issues with availability of preferred material
5. industry not aware (despite being sent the documents, port meetings etc)
6. people who make their own nets may be worried that the gear they make does not comply
7. a number of the teds inspected were already compliant or only needed small tweaks.
8. the specifications are too complicated for fishers to understand – need for simplified guidelines
9. Moreton Bay boats oppose having to use larger TEDs

Audit report – worried about the money not being spent need to develop options

Options include:

1. allowing rebates to be paid to people that have formal orders placed by the deadline of 31 January. Cannot pay the rebate until the order is paid in full – until 30 June 2010. QBFP will provide a leniency if they have the evidence that they have tried to obtain compliant gear. If you make your own nets, must be made by 31 January. Net makers will have to give fishers a “receipt” that shows they have placed an order.
2. increase extension
 - more media
 - Almost have to walk people through the process, help them to see the benefits, help them fill out forms, get them to fill in forms etc.
 - QSIA will help with extension – contact each licence holder
 - Another round of port visits in January prior to deadline of 31 January
 - Take a net maker around for the port visits as well (use local net makers for each port)
 - Would need notification to go out to industry in the next few weeks
 - QBFP should also go to the port visits
 - Measure gear and inform people that they will have to comply with new specs by 1 Feb 2010.
3. providing a service for people to take their gear to get measured (QBFP is not being trained until February)

SMC how many meshes from the drawstring. If not enough meshes, no give in the codend when lifting nets which increases wear on the codends.

Inform net makers of updated requirements for providing receipts for orders if they will not be filled prior to 1 February.

Options for expenditure of rebate funding that may not be spent by the deadline

1. extension of rebate for SMC for deepwater prawn.
2. fisheye rebates
3. second round of access to the rebate if fishers have used them for the entire season and need to replace them

Look at amending the specifications for fisheyes to include an additional strut for support

Recommendations

Put it to the GM FHM that rebates be paid to people that have formal orders placed by the deadline of 31 January

Provide extension through port visits in conjunction with QSIA

Provide QSIA with fishers contact details??

Train 1 or 2 QBFP officers early and get them to do port visits

Develop a diagram that can be distributed to net makers and fishers.

Get a codend made up that would be suitable for MBay boats with 81 x 81 grids

Start port visits in Moreton Bay and then head up north for the rest of the port visits (may be largest component of fleet requiring new TEDs – involve MBSIA)

5.1 Evaluation of feedback on current BRD specifications

We want fishers to use the gear so as long as the amendments to design do not impact on the ability of the devices to exclude bycatch

SMC - scallop

1. Extension of diamond mesh section from drawstring to SMC
 - Makes it easier to mend
 - Some cannot use more meshes at the back due to net clearance
 - Leaves more of the square mesh open to allow bycatch out
2. Length of codend
 - Test the efficiency of SMC of different lengths eg 40 meshes versus 30 meshes
3. Remove belly ropes for ultracross knotless mesh (it is better to use ropes but not essential). Test SMC without belly ropes.

The testing component of this project can be used to trial these tweaks with the view of improving bycatch reduction and useability of the gear.

MS - We are still discussing changing gear but we are putting out all of these SMCs with the current specs. Some people will like them but some people will not like them, it will be a challenge to get those people to try them again even if the design gets amended down the track.

EJ - The industry testing component of the program will aim to address this. If gear fails, then the fisher should inform Fisheries, we can give a permit to allow the changes they think would fix it, and we'll get observers on the boat. We will pay for fixing the gear and get it back on their boat and get them using it again. Need to keep industry on board.

Run into the issue that other people will then want that gear on their boat but the net makers can't give it to them as it is non-compliant. They can also apply for permits. Need to trial gear types on a number of boats in different areas.

Gear being trailed may continually require tweaking – how does the permit provide for this.

Complex problem. Want to keep prawn and remove bycatch but the bycatch is bigger than the prawn

Belly ropes - discussed the options for removing requirement for belly ropes for SMC made from knotless material. If it is not ultracross then the square mesh will tear, so fishers will put belly ropes in. MC – does not believe that we should take the requirements out except for ultracross as this would be endorsing an inferior device.

FH – NSW will legislate for sustainability purposes and not for industry viability eg durability of gear which is left up to industry.

We can legislate that knotted SM does need belly ropes and knotless does not but we need to determine if that is the right thing to do.

DS - Why do we need to undertake industry testing when strength testing of net in the lab can answer the question on whether belly ropes are required to prevent knots slipping or nets distorting. EJ – this may end up being a low risk so it may not end up going through the testing process.

What is the ratio of meshes to bars when attaching SMC to diamond mesh?

KB – trial with MBSIA for SMC in shallow water prawn – comparative trial. MBSIA have not released the data

Fisheyes - prawn

1. Add strut to the fisheye for increased strength – durability – eg. yarrow.
2. Position of the fisheye in codend

NPF trials show that sea snakes will exit through a square mesh panel if put in the right place. QLD research showed that square mesh panel was not particularly effective in eliminating sea snakes.

Will look at mandating a BRD that will be effective in excluding sea snakes. It may not necessarily end up being fisheyes.

NPF have chosen BRDs to test prioritised on where the biggest impact on bycatch is eg tiger fishery. What is driving the priorities setting process here?

Other

1. SMC – prawn - Bell end on codend for diamond mesh (length and diameter of the diamond mesh at the back of the codend)
2. Large mesh around the TED grid as a BRD
3. Combining SMC and fisheye
4. fisheye combined in TED

WH - Increase mesh size immediately around grid. MS that is the opposite to the US who have smaller mesh around the grid. EJ – this is to prevent bycatch being meshed around the grid.

MS - Industry trials are good as there are concerns about research undertaken over short shots that are used in research charters. Have to overcome the fear of fishers that they are going to lose product by agreeing to trial gear on their boat. TC try to do shots at the average speed of the fleet for that component of the fishery.

Recommendations

Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

Include mending techniques in port visits/education session

Supported further testing of large mesh around grids

SMC in scallop and fisheye – Needs

SMC in prawn and TEDs – Wants

5.2/5.3 Which designs should be undertaken as industry testing and scientific testing

Ability to impact on bycatch rates – scientific testing

Durability – feedback from industry

MS – results from all scientific testing should also then be passed on to industry to trial to test in real word scenarios on boats (eg longer shots)

As long as each codend has one recognised BRD, a permit should not be required to trial other tweaks to codends. The permit system allows us to get the feedback, Fisheries Queensland will pay for the gear that will be trialled.

TC and MC have developed a proposal for a charter to trial a number of new gear initiatives.

5.4 Priorities for testing TEDs

Have an opportunity to test TED design in the US in June 2010. Fisheries Queensland would cover the cost

1. flaps
 - a. overlap – full double flap wrapped right around and not sewn down – has a bigger opening (currently being used on most of the scallop fleet, no sponges are caught so achieving good bycatch outcomes)

Other issues raised – not idea that require testing in the US:

- flap mesh size – should have option of smaller prawn mesh or scallop mesh in scallop TEDs
- size of the single flap
- triangular opening doesn't need to be an all bar taper
- float specifications too prescriptive
- requirements for floats on plastic grids
- include fisheye in TED
- WH - grid angle (the US have tested this extensively and are not likely to test grid angles further).
- can we move from a stretched measure to a mesh count?
- Should have float requirements on top shooters as well.

Moreton bay boats currently use smaller grids and have raised the issue that the new specifications may not be appropriate on smaller boats. Turtles are common in Moreton Bay and therefore boats must have effective TEDs. Involve MBSIA in education and extension for TEDs for Bay boats.

Outcome

DRoy to develop a testing plan that will go back to the committee including permit process, which components will be scientific testing and which will be industry tested and designs that will be sent to the US.

6. EXTENSION AND EDUCATION

6.1 Design and use guidelines

Useful for net makers and QBFP

Waterproof paper or at least the front and back covers

Need to provide different sources for education eg web, print, visual

Supported by working group.

6.2 Regional gear workshops

- 14 ports planning on visiting
- Leaving a set of gear at local QBFP offices so fishers who can't make it to the workshop can go and have a look at it.
- Net makers from different areas as well as the local net maker. Sharing of ideas between regions. Fisheries has the budget to send people to different areas.
- TC willing to present research findings. EJ – don't necessarily think fishers will want to hear from scientists.
- Net makers have been talking to each other a lot more and sharing ideas

Action

Ask registered net makers if they would be willing to attend for their local area or travel to other ports

DRoy to put together a plan for workshops.

6.3 Provision of expert technical advice

Contracted net makers/gear designers to assist with advice on construction and installation of the devices.

Recognise this is a time burden and Fisheries Queensland would remunerate

Action

Start off with getting fishers to the gear workshops and determine whether this would be necessary.

6.4 Provision of regular assistance in ports

Spends 2h a week or so down at the port to ask if fishers have ordered their new gear, or applied for their rebate and to help fishers fill in application forms etc.

- Possibly QSIA trawl reps?? MBSIA. Recognise this is also a burden on these people who also have their own businesses to run.
- Tweed areas often gets missed.

- Seanet extension services – Woody (Michael Wooden) – Tweed area

6.5 Video footage of gear

- Would be a good way to show fishers how their gear is working. Want to get coverage on different gear types in different fishery sectors
- Is it possible to use in a commercial setting or is it too deep and too dark?? Low light cameras
- For good resolution etc you need to run cable back to the boat which can cause interference with the trawling of the net. DF - Need to have gear independent of the net.
- \$5000 – cable, power supply box, low light black and white camera, infrared lights
- Also need a monitor and video recorder to view and record the footage
- Can tow the camera independently of the gear and just manipulate the position of the camera by letting the cable in or out. Real time allows you to see if the camera is collecting the right information and it can be moved around to ensure the right footage is being collected.
- Or can use a handycam in housing fitted to the gear. This is self contained and doesn't provide real time footage. Have to wait until the trawl is over before seeing what the footage is like.
- MBSIA system which has the flexibility to record remotely in shallow waters but can plug it in for deeper shots.
- Develop a DVD to send to fishers. Put it on u-tube

Recommendation

Support the collection of additional video information

Investigate the use of handycam option and check out limitations

Look into MBSIA system

Next meeting – March-April 2010

Appendix 6 – QBFP Compliance Report

Compliance report – East Coast Trawl Fishery Turtle Excluder Devices (TED)

Background

Fisheries Queensland, a service of the Queensland Department of Employment, Economic Development and Innovation (DEEDI), Australia, has been working with the Queensland East Coast Trawl Fishery to gain accreditation from the United States of America (the US) in order to allow export of Queensland caught trawl product into the US. The main focus of this work has been to amend the regulations relating to Turtle Excluder Devices (TED) to meet the strict US accreditation guidelines.

Queensland Fisheries legislation has required since 2000 that all licensed commercial fishing vessels, engaged in otter trawl activities on the East Coast fishery comply with having Turtle Excluder Devices (TEDs) and prescribed Bycatch Reduction Devices (BRDs) fitted to all trawl nets. Similarly, vessels engaged in the River and Beam Trawl Fishery must have BRDs fitted and also require TEDs when operating outside of rivers.

During 2009, Fisheries Queensland liaised with officers from the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA) to develop a set of provisional TED specifications that would meet the US standards. These new, more detailed and rigorous specifications were approved to become law in Queensland on 9 October 2009 and the provisions came into force on 1 February 2010.

The lag time between approval and implementation was necessary to provide industry with some time to gear up to meet the new requirements. The Queensland Government also funded a rebate scheme to assist fishers who needed to purchase new TEDs in order to comply with the revised regulations.

Enforcement

Queensland Boating and Fisheries Patrol (QBFP) enforce all Queensland fisheries legislation including provisions relating to the East Coast Trawl Fishery. State-wide at-sea and in-port inspections of these vessels for catch and apparatus, including assessment of compliance with TED specifications, are undertaken by the QBFP during both routine and dedicated monitoring operations, including enforcement patrols.

All QBFP officers have recently undertaken a training session in identification and measuring of compliant TEDs to meet the new specifications and a reference booklet has been developed which will further assist officers with their enforcement activities relating to TEDs.

TED compliance is rated as one of the highest priorities for enforcement in the East Coast Trawl Fishery in the Compliance Risk Assessment of the fishery. Therefore this issue is a high priority for QBFP. Strategies adopted by Fisheries Queensland to address TED compliance include:

- At-sea inspections of trawlers (QBFP).
- In-port inspections of TEDs/BRDs to gather intelligence (QBFP).
- Inspections and education will be increased when new regulations are introduced regarding TED specifications (QBFP and Harvest Management).

A Fisheries Infringement Notice (FIN), on-the-spot fine, can be issued for a non-compliant TED attracting a fine of \$1000 for each offence or the matter can be taken to court. This decision is at

the QBFP officer's discretion. Instances where the matter is taken to court may include repeat offenders, no TED in the nets at all or if the non-compliant TED is one of a number of other offences.

Enforcement and compliance data

In the East Coast Trawl Fishery (otter and beam trawl) there are currently 563 licenses with approximately 425 licenses being fished in 2008 and 429* in 2009.

(There are currently 448 otter trawl licenses with approximately 337 licenses being fished in 2008 and 341* in 2009)

* at the time this report was produced, logbook data for 2009 had not all been entered into the database so these figures may be a slight underestimate.

2008 TED Compliance

| Fishery | Commercial Vessel Inspections | TED Offences | Compliance (%) |
|--------------------------------------|-------------------------------|--------------|----------------|
| East Coast Otter Trawl | 336 | 2 | 99.4 |
| Moreton Bay Otter Trawl | 29 | 0 | 100 |
| River and Inshore Beam Trawl Fishery | 28 | 0 | 100 |

Note: Both offences were successfully prosecuted with a conviction recorded in one case. One defendant received a fine of \$1,000 plus costs for contravening a condition of an authority (TED opening wired shut); the other received a fine of \$2,000 for the TED offence (sewing TED closed) and a total combined fine of \$11,800 for a number of related fisheries offences.

2009 TED Compliance (including January 2010)

| Fishery | Commercial Vessel Inspections | TED Offences | Compliance (%) |
|--------------------------------------|-------------------------------|--------------|----------------|
| East Coast Otter Trawl | 325 | 5 | 98.5 |
| Moreton Bay Otter Trawl | 99 | 0 | 100 |
| River and Inshore Beam Trawl Fishery | 28 | 0 | 100 |

Note: FINs were issued for all five offences, \$1,000 each.

Ongoing enforcement activities for 2010

As TED compliance remains rated as one of the highest priorities for enforcement in the East Coast Trawl Fishery, in 2010 enforcement activities will continue to be undertaken in a manner similar to previous years with similar numbers of inspections expected to occur. Activities will continue to include:

- At-sea inspections of trawlers (QBFP).
- In-port inspections of TEDs/BRDs to gather intelligence (QBFP).
- Education and informal inspections regarding TED specifications (QBFP and Harvest Management).

The Fisheries Observer Program is also largely being dedicated to the East Coast Trawl Fishery for 2010 and Observers will play a role in the education of skippers on TED compliance issues.

Extension of Fisheries Research and Development funded research results on improved bycatch reduction devices to the Queensland East Coast Otter Trawl Fishery

Appendix 7 - Phone Survey Questionnaire

Questionnaire for East Coast Trawl Fishers

Introduce yourself as a Fisheries Observer and ask if they can spare a few minute of their time.

“We are currently contacting all fishers who hold a Queensland trawl licence to ask for your cooperation in completing a ten minute telephone survey, designed to evaluate the performance to date of the current TED / BRD rebate scheme and to identify areas for future improvement. We are also keen to identify opportunities where we can help you as an individual, whether through providing you with assistance to become compliant with the new regulations, trialling an alternative BRD design, answering your questions or simply relaying your concerns to a Fisheries Manager.

The information we wish to collect is basic and will not be shared with anyone outside of Fisheries Queensland without your consent, even though it is generally of a non-confidential nature. Participating in this short survey may save you thousands of dollars¹.”

1. Are you the skipper of your vessel? Y / N
2. Are you the appropriate person to talk to regarding this survey? Y / N
If not, who should I talk to? (the skipper?)

Name: Position: Ph:

Inform the above contact of the situation and their referral by the owner. Resume this questionnaire with above introduction and commence questions at #3.

3. Mooring location
4. Which trawl sector do you mainly fish?

| | | |
|----------------------|-------------|----------------|
| EKP – deep / shallow | Tiger / End | Red Spot Kings |
| Banana | Scallop | Bay |
5. Between which months do you fish this sector / sectors?
.....
6. Besides net repair work, is there a time of the year when you do not usually trawl?
.....
7. Are you aware of the new TED specifications due to commence on 1 February 2010?

| | | |
|-------------|-----------------|-----------------|
| Yes - fully | Yes - partially | No – not at all |
|-------------|-----------------|-----------------|

ⁱ This saving could be by receiving the benefits of the rebate scheme or through not incurring possible future infringement notices by QBFP because of not being compliant with the new regulation.

8. Do you believe that your TEDs are currently compliant? **Y / N / unsure**

If yes, how do you know?

If no, have you placed an order with a net marker? **Y / N / unsure**

If unsure, would you like to receive some assistance in determining this?

Y / N / maybe

9. Are you aware of the current rebate scheme in place for compliant TEDs?

Yes - fully

Yes - partially

No – not at all

If yes, have you applied for this rebate?

Y / N / intend to

If no, would you like to receive some information on this scheme?

Y / N

10. What design(s) of BRDs do you routinely use?

Fish Eye

Square Mesh Panel

Square Mesh
Codend

Big Eye

Pop Eye

V-Cut / Flapper

Other

Radical Escape Section

None

11. Are you aware of the current rebate scheme for Square Mesh Codends in scallop? **Y / N**

If yes, have you applied for this rebate?

Y / N / intend to

If no, would you like to receive some information on this scheme?

Y / N

12. Would you be interested in trialling alternative BRD designs under a General Fisheries Permit? **Y / N**

If yes, would you like to receive some information on this from a fisheries manager?

Y / N / maybe

13. Are you aware that the Queensland Fisheries Observer Program enables fishers to export product through helping their fisheries to achieve / maintain WTO approval? **Y / N**

14. Fisheries observers join vessels at sea and observe normal fishing operations. They do not have a compliance role. Would you be interested in having an observer onboard for a trip?

Y / N / maybe

If yes, how many persons is your boat surveyed to carry?

How many crew members do you usually have, excluding the skipper?

.....

How long are your usual fishing trips?

.....

