TORRES STRAIT PRAWN MANAGEMENT ADVISORY COMMITTEE	Meeting No. 3 9 February 2007
Spencer Gulf prawn fishery visit	Agenda Item No. 12.1

THE TSPMAC NOTES

1. That the planned trip to visit the Spencer Gulf prawn fishery in November 2006 did not occur due to last minute changes in the Spencer Gulf Prawn Fishery Survey timetable.
2. That Greg Palmer, Coordinator at Sea for the Spencer Gulf Prawn Fishery indicated that Torres Strait industry are still welcome to visit the fishery, and proposed that an alternative time be arranged some time in April 2007.

THE TSPMAC RECOMMENDS

The TSPEHA consult licence holders in the Torres Strait Prawn Fishery and advises the AFMA manager by the end of February 2007 if any of its members or other licence holders are available to travel to South Australia to attend potential meetings in April 2007.

BACKGROUND

The Spencer Gulf Prawn Fishery is currently managed using a co-management model that utilise spatial closures. Following the alternative management workshop in 2005, it was proposed that representatives form the Torres Strait Prawn Fishery would visit the fishery to increase awareness of the spatial management systems used.

DISCUSSION

It is recognised that many industry members will be fishing in April 2007 and may not be available to travel to South Australia. However, if industry members are interested/available representatives from PZJA Agency staff and industry representatives could travel to South Australia to speak with fisheries managers and local fishers.

AFMA have indicated that approximately $4000 is available for industry members to participate in such a meeting. It is anticipated that this funding could cover the airfares and accommodation costs for three industry representatives to travel from Cairns to South Australia, with meals and other additional expenses to be paid by the individuals involved.

TORRES STRAIT PRAWN MANAGEMENT ADVISORY COMMITTEE	Meeting No. 3 9 February 2007
Bycatch Reduction Workshop	Agenda Item No. 12.2

RECOMMENDATION

a) That TSPMAC **NOTES** the update on the recent ***Investigating options to improve bycatch reduction in tropical prawn fisheries: a workshop for fishers.***
b) That TSPMAC **NOTES** that a further half day workshop will be held in Darwin prior to the Northern Prawn banana season (March-April 2007).
c) That TSPMAC **NOTES** and reviews the following:
    - Erik Raudzen's preliminary results of the 'Popeye' fishbox testing and consider its application in the TSPF.
    - review the outcomes of the bycatch workshop and, in particular, the options to reduce bycatch in the prawn trawl fisheries.
    - Recommend ways for industry to trial alternate BRDs

BACKGROUND

A FRDC funded project entitled ***Investigating options to improve bycatch reduction in tropical prawn fisheries: a workshop for fishers*** was held in Cairns on the 21st and 22nd of November 2006. The principal investigator of this project is Steve Eayrs formerly from the AMC.

The objective of this workshop was to broaden industry's thinking about bycatch reduction and the possible development and application of new, innovative bycatch reduction devices. The agenda is at Attachment 12.2.1.

Over 60 people attended the meeting with around half of these being industry representatives from the Torres Strait prawn, Northern Prawn, and East Coast trawl fisheries including net makers, fleet managers, company operators and single vessel operators. In addition there were representatives from QDPI&F, GBRMPA, AMC, AFMA, DAFF, FRDC and SeaNet.

A number of presentations were made on various national and international efforts and methods for reducing prawn trawl bycatch. These presentations will be made available to all Torres Strait prawn operators once finalised (hopefully early in 2007) including video footage of developmental BRDs. The workshop developed a number of priorities and ways forward for future bycatch reduction (Attachment 12.2.2).

DISCUSSION

Following the Ministerial Direction of 2005, all Commonwealth managed fisheries are to halve their bycatch by 2008. Whilst the Ministerial Direction does not directly apply to Torres Strait Fisheries, it is expected that they are consistent with the Australian Government position on fisheries management. The TSPF has already made major bycatch reductions over recent years, mainly as a result of the usage of TEDs. However, there are still significant bycatch issues, which need to be addressed.

Scientific observer coverage was carried out over the last three weeks of the Northern Prawn 2006 tiger season of the 'Popeye fishbox'. Results were very encouraging (Attachment 12.2.3). It is recommended that the results of this field trial be further analysed by the TSPMAC with a view to adopting the 'fishbox' as an approved BRD device in the TSPF.

In addition a number of other bycatch ideas were presented at the workshop. There was interest in developing these further. The suggestion was made that there needs to be the ability and

incentive for fishers to trial alternate bycatch reduction techniques out-of-season. AFMA management is amenable to looking at options so long as any new, effective methods/techniques are freely available to other operators and that any testing will not have any adverse impact on stock sustainability or on economics in the fishery.

A number of potential projects could be developed by the fishery to progress the development of new and/or improved BRDs for the fishery.

Attachment 12.2.1: Bycatch reduction workshop agenda

Investigating options to improve bycatch reduction in tropical prawn fisheries: a workshop for fishers

Cairns Yacht Squadron, Cairns, Qld
November 21 – 22, 2006

Workshop program – Day 1

Session 1 – Case study accounts by fishers and others of BRD design, performance and uptake (Chair – Steve Eayrs; Rapporteurs – Adrianne Burke, John Wakeford)

	Session 1	***Speakers***
0830 - 0835	• Workshop welcome, objectives & proposed outcomes	Steve Eayrs (Australian Maritime College)
0835 - 0845	• Drivers for improvement in bycatch reduction	Wade Whitelaw (AFMA)
0845 - 0945	• Current status of existing BRDs including catching performance & uptake	• Steve Eayrs (Australian Maritime College) – *Results of NPF TED & BRD industry questionnaire* • Tony Courtney , Matthew Campbell & Shane Gaddes (QDPI&F) – *Research and extension on TEDs and BRDs in the QLD trawl fishery since 2001* • Popeye (Popeye Netmaking) – *Design, rigging and operation of the Popeye fish excluder (fishbox)* • Others TBA
0945 - 1015	• Coffee break	
1015 - 1145	• Case-study accounts by fishers and others involved in BRD design, catching and handling performance	• Erik Raudzens (AMFA) – *The performance of the Popeye fish excluder (fishbox) in the NPF* • Jim Yarrow (NPF fisher) - *Design, rigging and operation of the Yarrow fisheye* • Andy Prendergast (Newfishing Aust.) – *Design, rigging and performance of the T90 mesh panel* • Phil Robson (A. Raptis & Sons) - *Design, rigging and performance of the shark shield and the application of glow sticks to attract fish towards a BRD* • Others TBA
1145 - 1245	• Open discussion of options to improve performance of existing BRD designs	• Group discussion
1245 - 1330	• Lunch	

Session 2 – International progress in bycatch reduction and innovative options to reduce bycatch in tropical prawn fisheries (Chair – Wade Whitelaw; Rapporteurs – David Sterling, Eric Raudzens)

	Session 2	Speakers
1330 - 1430	• Presentation by international experts in progress in bycatch reduction	• Chris Glass (University of New Hampshire, USA) – *Bycatch reduction research in N. American & European fisheries: a review* • Dan Foster (National Marine Fisheries Service, USA) - *Bycatch reduction research in the Gulf of Mexico, USA* • Bundit Chokesanguan (SEAFDEC Thailand) - *Application of the Juvenile & Trash Excluder Device in S.E. Asia* • Others TBA
1430 - 1500	• Open discussion of outstanding issues and future goals to improve BRD performance	• Group discussion
1500 - 1530	• Coffee break	
1530 - 1630	• Application of innovative options to reduce bycatch in prawn trawl fisheries	• Dan Foster (National Marine Fisheries Service, USA) - *Application of electricity to reduce bycatch in shrimp trawl fisheries* • David Maynard (AMC) - *Application of light stimuli to reduce bycatch in prawn trawl fisheries* • Chris Glass (University of New Hampshire, USA) – *Status of knowledge of fish behaviour in demersal trawl fisheries*
1630 - 1645	• Electronic logbooks	• Dieter Bohm (Catchlog) – *Use & benefits of electronic logbooks in commercial fisheries*

Workshop program – Day 2

Session 3 – Innovative options to reduce bycatch (Chair – Tony Courtney; Rapporteurs – Matthew Campbell, David Maynard)

	Session 3	*Speakers*
0830 - 1030	• Application of innovative options to reduce bycatch in prawn trawl fisheries	• Steve Eayrs (Australian Maritime College) - *Status of knowledge of prawn behaviour in prawn trawl fisheries* • Steve Eayrs (Australian Maritime College) – *Potential application of headline modification to reduce bycatch* • David Sterling (Director, Sterling Fisheries, QLD) – *Performance of innovative otter boards and ground gear to reduce bycatch and seabed impact* • Rob McCauley (Curtin University, W.A.) & Geoff McPherson (QDPI) - *Application of acoustics to reduce bycatch in prawn trawl fisheries* • John Wakeford (Australian Maritime College) – *Flow field studies in and around TEDs & BRDs: potential to improve BRD performance*
1030 - 1100	• Coffee break	
1100 - 1230	• Open discussion on the potential use and application of these options to reduce bycatch in Australian fisheries	• Group discussion
1230 - 1330	Lunch	

Session 4 - Options to improve fuel efficiency, and planning for the future (Chair – Steve Eayrs; Rapporteurs – Eric Raudzens, Adrianne Burke)

	Session 4	**Speakers**
1330 - 1400	• Presentation on fuel efficiency options for prawn trawlers	• David Sterling (Director, Sterling Fisheries, QLD) – *Fishing gear modifications to improve fuel efficiency*
1400 - 1600	• Planning and prioritisation of future efforts to reduce bycatch for o Industry o Management o Research Organisations	• Group discussion

1600 - 1700	• Discussion on reporting and dissemination of information and outcomes from the workshop; description of future projects; future R&D; concluding remarks	• Group discussion

ATTACHMENT 12.2.2: Summary of discussions on ways forward to reduce bycatch in prawn trawl fisheries

Issue/objective	*How to implement*	*Who to implement*	*Funding options*
Improved understanding of bycatch behaviour	Acoustic means – can be put on boat.		
Convert bycatch into byproduct rather than discard this component of the catch.	Look at 'trash species' and change management rules that have a blanket ban on landing bycatch species. Improved marketing/processing of bycatch species.	Government and Industry Industry	
Improved public perception of the fishing industry and approach to bycatch and bycatch reduction.	Industry bodies should respond to this challenge. Improved education to public/kids – better communication	Industry Industry and Government	
Research into the percentage of assemblage that ends up as bycatch and disseminate this information.	GBRMPA is doing with AIMS/CSIRO	GBRMPA, AIMS and CSIRO	
Research needs to include industry knowledge of the fisheries.	Tie research to commercial fisheries	Government and Industry	
Develop and trial new or different BRDs or methods to reduce bycatch.	Industry preference to test out of season with options of keeping catch, nights back (QLD), expenses, including fuel, covered. Government funded observer, improved education	Government and Industry	
Improved understanding of research and management objectives	Dissemination of research information to industry	Government and research	
Work done out of season to develop BRDS etc – combine b/w NPF TS, ECTF	Scientific permits Management changes	Government and Industry	
Further testing of Fishbox .	Water flow/flume tank testing Testing in banana season	Industry and AFMA, AMC	Government and Industry NHT
List of interested parties (fishers and companies)	Need scientific and industry rigor	Industry	

willing to trial innovative options.			
Composite fisheye (fisheye and square mesh panel with plastic film around the fisheye creating low-flow area)	Disseminate information to fishers Further testing	AMC and AFMA AMC	AMC and AFMA Government
Using a black plastic tunnel behind the Square Mesh Panel	Out of season testing with options of keeping catch, nights back (QLD), fuel payed for, Government funded observer, improved education	Industry, Government and AMC	Industry, Government
How to encourage industry participation in future workshops	Forward information to fishers 2 months before the workshop then again 2 weeks before Incl. WA and SA trawl fisheries – Exmouth, Kimberley and Spencer Gulf fisheries	Government, Industry	
Testing of T90	Trialling in fisheries	Industry	US
Dissemination of final report	A hardcopy of papers and outcomes and a CD of presentations will be sent to workshop attendees, industry organisations, GBRMPA, QDPI&F, AFMA, DAFF, to SeaNet for dissemination and distributed at NPF pre-season briefings in 2007 Summary of workshop to: • FRDC • AFMA Fishing Future • Trade-a-boat magazine • MCCN – Waves (other green groups) • TS and NPF handbooks • Media releases	AMC, AFMA, QDPI&F, SeaNet, Industry	

COMMENTS

Bycatch species low value and not viable to keep

JW – west coast snapper. Focus on one bycatch species for industry to get mileage on rather than contend with too many

WW – bycatch limits b/c of arrangements with states not to target finfish – prawn fishery only

BI – need to know about what isn't being caught, what jumps over the headrope, goes under the net, the seabed

AT- GBR seabed biodiversity project, moon phase built into it. Sled, baited video, videoed trawl

SE – have to get that info to the wider community

DM – need knowledge of background fish assemblage

RM - projects funded for research on fishing has to involve fishing
SE/AP – that already happens
WW any research happening is ticked off by bodies with industry reps- MACs, IOs, govt

Sharee – need to get more information out to the public and communication between industry and specialists
Denis – initial fishbox trial QDPI payed for fuel, vessel kept catch, observer onboard, got nights back that were used.

AP – struggled getting crew to trial quad gear. Need incentives we had to give bonus and employ more crew.
JW – could use scientific type people to help out and other side industry gets involved in the research side.

Sharee – CMOs get grief from other crew that they are handing AFMA a loaded gun. CMO named by industry as an AFMA spy.
Positive outcomes for sharee – collecting sea snakes for museums, taking photos of animals researches need.

Phil – need to have more out of season work – concentrated effort with better involvement form industry (no worries about catching, crew problems, economics). We should try this then show others how it has worked

Emma – there are crew that would be happy to help if you can pay for stores, fuel and wages out of season

Shane – that can cause problems in that budget can blow out significantly

Shane – trialling fishbox and V cut only 3 out of 70 operators volunteered to assist

Mick P – if testing fishbox in a flume tank we need to test it with lazy lines etc – all the other gear too under normal tow speed about 3.8knt

Phil R – fishbox currently isn't working for both seasons. We need to work on combining it with something else to make it work in bananas

Dan – has budget that includes 5 days a year to dive on and test BRDs. Has offered for Aust trawl fishers to send over new BRDs to be tested as US fishers aren't taking to opportunity to do so.

Bundit/DM - don't write off other BRDs because not every device will suit each fishery eg bananas v tigers. Need to be able to move between types to suit the fishing

DESSIMINATION OF WORKSHOP INFO
A lot of good stuff at this workshop

- hardcopy of papers and outcomes
- CD/DVD of presentations

Send to:

- IOs

- Govt depts.- GMRMPA, QDPIF, AFMA etc
- SeaNet for dissemination

Summary of workshop to:

- FRDC
- AFMA Fishing Future
- Trade-a-boat
- MCCN – Waves (green groups)
- WWF ?
- TS and NPF handbooks
- Media releases

Funding for future workshops – annual, including fuel efficiency issues, need critical mass
QLD hopper implementation funding??
NORMAC approved funding?
TS funding

Positive outcomes need to get out to the wider community !!

Attachment 12.2.3: Preliminary results of 'Popeye fishbox' testing.

Preliminary Results of at-sea testing of the 'Popeye Fishbox' Bycatch Reduction Device Oct-Nov 2006

During the last three weeks the of 2006 tiger prawn season the 'Popeye Fishbox' Bycatch Reduction Device (BRD) was assessed by Erik Raudzens (AFMA) using the NPF Bycatch sub-committee's performance criteria. The Popeye Fishbox was assessed on the *FV Adelaide Pearl* during normal industry operations for 82 trawls, with 54 trawls trialled with the BRD positioned at a distance of 70 meshes from the codend draw strings and a further 28 trawls trialled at 100 meshes.

Methods

During the assessment twin trawl nets containing standard Turtle Excluder Devices (TEDs) were compared. One net contained the Popeye Fishbox with the other net did containing a BRD. All small bycatch (including sharks and rays) from both nets was separated and weighed in lug baskets. All prawn catch was also weighed separately to assess for potential prawn escapement. The BRD was swapped from starboard to port side nets twice during the trial to account for potential differences in both nets performance.

Results

The following results are sourced from raw data. Further statistical analyses will be presented in a final report to be completed in January 2007.

70 Meshes from the codend drawstring

- The Popeye Fishbox captured **52.1 % less small bycatch** with a 1.7 % reduction in prawn catch (probably not statistically significant).
- The Popeye Fishbox captured **85.7 % less sea snakes.**
- The number of small **sharks and rays was approximately 10.9 % less** in the Popeye Fishbox.

100 Meshes from the codend drawstring

- The Popeye Fishbox captured **28.7% less small bycatch** with a 2.2% increase in prawn catch (probably not statistically significant).
- Causes for a decreased reduction in the capture of small bycatch at 100 meshes are still being investigated.

Twilight versus night shots

- Twilight shots for nets with and without BRDs had a higher amount of small bycatch (approx. 50% higher) and smaller prawn catches (approx. 50% lower).

Other Issues

- During the trial at 70 meshes 6 shots targeted banana prawns.
- During these shots there was a 17.6% reduction in prawn catch with a 50.2% reduction in small bycatch.
- This is most likely due to the codend over-filling, as catch was seen escaping the BRD by crew during these shots when being hauled.

Preliminary Conclusions

- Popeye's Fishbox results in a substantial reduction in the amount of small bycatch.

- Further analyses are required to determine whether the distance from the codend is crucial in reducing the amount of small bycatch.

- The 17.6% reduction in prawn catch when targeting banana prawns may suggest that the BRD is best applied during the tiger prawn season, although current data is limited.

- Further analyses on catch compositions, twilight versus night trawls and sharks and rays will be presented in the final report.

Acknowledgements: Thanks go to the skipper and crew of the *FV Adelaide Pearl* and A Raptis & Sons Pty Ltd for their efforts and the opportunity to trial the ‘fishbox’.