

# *Australian Coral Reef Society Inc.*

A society promoting scientific study of Australian Coral Reefs

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Monday, 20 January 2003

Dear Ms Shooting Star

The Australian Coral Reef Society welcomes this opportunity to comment on the “Ecological Assessment of the Queensland East Coast Otter Trawl Fishery”.

The Australian Coral Reef Society is a professional scientific organisation with over 300 members who are practising coral reef scientists, and are employed by a variety of governmental and private organisations. The Society is the oldest coral reef society in the world and is over 75 years old. The Society is extremely concerned about the management of the GBR and has commented on all its Zoning Plans since the inception of the Park and is currently heavily involved in the RAP process.

The submission below is a joint one with the Australian Marine Science Association, North Queensland.

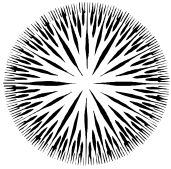
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## **Comments by the ACRS and AMSA NQ on the ‘Ecological Assessment of the Queensland East Coast Otter Trawl Fishery’**

The ACRS and AMSA NQ welcome this opportunity to comment on the ‘Ecological Assessment of the Queensland East Coast Otter Trawl Fishery’ and would like to congratulate the Queensland Department of Primary Industries on this report. However there are some questions and points that we would like to raise arising from this report.

In the Executive Summary – it should include a statement regarding compliance as this is critical in the implementation of the report as well as comments regarding the monitoring programmes which need to be implemented to check that these management options are having the desired effects.

Page iv- discusses limits and reduction in fishing effort, reduction in bycatch and limits on capture and mortality of sea turtles and reduction of bycatch. The Executive Summary should include goals or limits for these points.



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Page 5- It must be mentioned that most of the bycatch is killed and even if discarded will be dead so while it is beneficial to limit species which cannot be retained, in effect most organisms and certainly all colonial sessile epibenthic species are killed as soon as they are landed on deck if not before.

Page 10- The Trawl Plan: while it is admirable that efforts are being made to ensure that the fisheries resources taken in the fishery are taken in ecologically sustainable manner, it does not appear to take into account the loss of epifaunal communities which are destroyed by fishing and which are an integral part of the benthic ecosystem upon which the fisheries depend either directly or indirectly. Also what happens to the infauna which is also impacted on by trawling for which we have no data- the CSIRO's surveys have never considered the infauna.

Page 11- while the mandatory use of bycatch reduction devices is strongly supported this is only effective for the mobile fauna- it doesn't reduce the loss of sessile fauna which once removed from the bottom is destroyed. It is not clear as to how this bycatch is going to be recorded in log books by species? This will be difficult as many of the invertebrates are undescribed species- and again does this just apply to the mobile fauna- needs clarification.

Page 19- while supporting the concept of ecological sustainability through the Trawl Plan- we are unclear as to how we will actually know if this is actually being achieved given the natural fluctuations between years and for several fisheries. Several species are involved which cannot easily be separated and may not have even been formally described, it is difficult to know how the fishers are going to enter these data for the log books- is it just ecological sustainability for the fisheries or of the marine ecosystem?

What are the justifications behind the 70% CPUE level between 1988 and 1997 chosen as an indicator of sustainable harvest? Are there performance criteria for compliance?

Page 21- we strongly support the concept of VMS and would encourage all parties to use this information more often to monitor where boats are fishing and to undertake more compliance activities. We are aware that GBRMPA has recently considered compliance as one of its major tasks as there are in some areas widespread abuse of the system. However, it is unclear if VMS monitoring involves continuous compliance monitoring or random polling by compliance officers. Random polling may have significant disadvantages both in compliance monitoring and as an effective deterrent. This should be clarified.

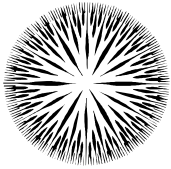
Page 22 – as the outcome of the GBRMPA RAP program is unknown, it cannot be stated with certainty that RAP will result in increased area closures to trawl. Many of the potential highly protected areas may already be unsuitable for trawling and the emphasis of RAP is likely to be in protecting pristine areas as opposed to areas already denuded by trawling. As such, there is no guarantee that the RAP will result in a decrease in the area of trawl active trawl grounds and it may have impacts on the ECOTF, it should not be put forward as a management initiative for the ECOTF. The RAP is a completely separate process with separate objectives.

Again we need to have some information as to how the review into Fishing Effort will be undertaken and the data which it will have to consider- the short time frames may make this very difficult to achieve. The fishery independent long term monitoring program is in its infancy and until reliable trend data are available, the precautionary principle should be exercised when using these data.

It is encouraging that fishery independent monitoring has been initiated for priority fisheries to address the complications involved with fishery dependant monitoring. The use of fishery independent monitoring should be widened to provide accurate more accurate stock assessment data.

Page 33 - does biological diversity refer to the entire benthic community? Including the infauna and epifauna of the inter reefal areas? If it doesn't it should.

Stock assessments should use a variety of data sources that include fishery independent data. As is correctly pointed out, CPUE is not necessarily an accurate indicator of stock condition and it much is still unknown about the population dynamics and abundance of many fished species. Caution is urged.



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Page 35- States that the harvest of saucer scallops has varied between 600- 2200 tons between 1988 and 2000 and yet this is regarded as stable. Elsewhere such variation is an indication that the population is declining, as currently stated this seems unlikely that the population is stable.

Page 37- a point of clarification. Presumably the use of BRDs is responsible for the declining bug catches as a component of the bycatch or alternatively, that there is a decline in the numbers caught in the fisheries. If the latter is the case, it could mean that the populations are declining.

Minimum size limitations on bugs are likely to be ineffective if they have a high discard mortality rate. Are there any data about long-term discard survival rates? Nevertheless, in the absence of such data the maximum size restriction and ban on the take of berried females to help ensure sustainability is strongly supported as an appropriate precautionary measure.

Page 38 – It is very difficult to evaluate the management responses to the multispecies fisheries when have no real idea of which species are being caught or their numbers. Even closely related species may have very different reproductive strategies and behaviour patterns. While some of these management options may be effective we are not given the data upon which these statements are presumably based upon.

Validation of logbook data is critical, it is unfortunate that this has not been initiated in the 14 years of logbook data. Was an assessment of the consistency of catch data undertaken in the 2000 review?

Page 39- need clarification as to whether discards are by species or just by bulk?

Page 42 – the CPUE trigger (70% of the average CPUE between 1988 and 1997) appears to be artificial and arbitrary. There are no data provided to explain how this trigger is biologically relevant. It is also of more concern if these data have not been standardised against spatial and temporal variations or changes in fishing efficiency. Essentially, this critical review trigger and sustainability target appears to be based on a set of historical, non standardised, fishery dependant and unvalidated data. This needs to be considered when assessing the efficacy of these management objectives and review points.

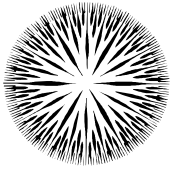
Page 44 – is there any information about changes in fishing efficiency and how this translates to changes in effort? Increased efficiency may increase or maintain catch levels even if the number of fishing days decreases. This needs to be considered when using CPUE.

Page 47 – records of by-product need to be accurate, it may be necessary to train fishers to accurately identify these species. The document does not provide any information as to how QFS will help fishers fill out logbooks accurately. This needs to be addressed if logbooks are to be used as proxy records of by-product stocks (which in itself is *not recommended*). According to logbook shown (appendix 5), fishers do not record by-catch species. This would be beneficial wherever possible. In the absence of such bycatch reporting, the use of both validated fishery dependant and fishery independent methods for assessing bycatch are critical.

Page 51- regarding pipe fishes. A bag limit has been given which means that once this limit is reached any more individuals caught must be returned. However, the discard mortality rate is high and this would appear to be a poor means of reducing the impact on these species.

Again with the cuttlefish, they have a very low survival when they are thrown back into the water- so while the bag limit is good we need other measures to restrict their capture or increase discard survival rates. Furthermore, we again have several species involved which have very different reproductive strategies.

Page 51 - Octopuses- with the fishery consisting of several species for which we have little information how are you going to know if they are being fished in an ecologically sustainable way?



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Page 52- The prohibition of take of permitted female crustacean species is supported. While all shark species have been removed from the permitted list they will still be caught and they are very vulnerable and unlikely to survive. It is important to consider other measures to reduce them being caught- they are slow growers with low fecundity. The use of TED's and BRDs is supported but research on elasmobranch bycatch is necessary, especially considering the relative risk to this group of animals and the implementation of the National Plan of Action – Sharks.

Page 53- while we congratulate the Dept in reducing the number of fishing boats and reducing potential fishing effort, in reality how much of this was latent? Are we in a situation now where what we have left are the active fishers without any real reduction in effort?

The introduction of mandatory TEDs and BRDs is welcomed as are the introduction of VMS and the mix of management regimes that include spatial and temporal closures. Nevertheless, the use of un-validated, fishery dependant, historical data as a management objective and reference point (ie: 70% of 1988-1997 average) is of concern. While this may allow some correction for inter annual variability in recruitment, it would seem advantages to have clear fishery objectives based on biological, stock based reference points. For example, AFMA have clear and stock based management objectives for the Southern Shark Fishery, ie: The level of school shark stocks in the Southern Shark Fishery will be rebuilt to a mature biomass level in excess of the 1996 levels by the year 2011 and gummy shark stocks will be maintained at the 1994 level. Research to refine key reference points is critical.

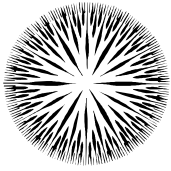
Page 56- it is extremely difficult to manage multispecies fisheries It is essential that funds are made available to accurately identify the species involved and obtain some information on their reproductive strategies, and to develop appropriate biological reference points Same comments as for Page 53 and same problems with the use of CPUE data as a management objective and review point (comments about page 42). Furthermore, the use of these review points and indicators to assert that the stocks are not depleted is an issue for the same reasons – the assumption stocks are not depleted because current CPUE remains below 70% of the average 1988-1997 CPUE is a significant assumption to make. The review and development of other reference points and scientifically driven, fishery independent stock assessments is critical, as is refining the use of CPUE data for stock assessment and performance monitoring. Page 58- while a lot of effort and funds were spent on the CSIRO project into the effects of fishing- little attempt was made to actually identify to species units the range of invertebrates killed during their sampling program other than in a fairly crude manner of weighing the animals. Furthermore, only limited amount of material was actually deposited in a museum for subsequent species identification- such information would have been invaluable for the forthcoming studies by AIMS, CSIRO and CRC – where again large amounts of material will be collected and which must be properly vouchered if we are ever to really begin to document the benthic diversity of these inter reefal areas and the potential impact of trawling on these species.

The intent to record all bycatch species of concern is welcomed, however this must include ongoing support for fishers to ensure that identification and recording of these species is accurate.

Page- 59-when it is stated that there has been a 55% reduction in bycatch does this include the epifaunal species and is this a reduction by bulk, species numbers or numbers of individuals- needs clarification. There have been anecdotal reports of the successful use of hoppers in the Northern Territory to both reduce discard mortality of bycatch and reduce damage to the target species (thereby increasing catch value). Has QFS assessed the use of hoppers in the ECOTF?

Page 60 most of the reports cited are concerned with mobile epifauna- still need to reduce the amount of epifauna removed. Epifauna are vital to maintaining interconnectivity between habitats across the Great Barrier Reef lagoon.

Page 61- a major component of the benthic ecosystem has been ignored by the CSIRO studies, ie the infauna. The problem with removal of the epifauna (as Sainsbury et al showed on the NW shelf) is that it radically changes the fish species caught. Even moderate trawling has a significant impact on the sessile epifauna much of which is slow growing and long lived. Once the epifauna is removed this may have follow on effects for the sediment and associated infaunal composition and additionally, have significant impacts on interconnectivity between habitats



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Even if only a relatively small area of the GBR is extensively trawled, it is recognised that the GBR contains many distinct regions and in this respect, a significant proportion of certain regions or habitats may be subjected to intensive trawling. If half these regions are already closed to trawling, the distribution of trawl effort and its potential impact should be assessed against the size and resilience of the subset of habitat types where intensive trawling occurs.

Page 64 – Regarding the use of hoppers, refer to comments about page 59. Research on the use of hoppers is encouraged.

Page 62-64 – discusses the use of BRDs in the ECOTF. Elsewhere in the document reference is made to both BRDs and TEDs, this should be clarified as the Trawl Plan specifies that both BRDs and TEDS are mandatory in the ECOTF.

Page 66 – again, reference should be made to both BRD's and TEDs, not just BRDs. Similar questions regarding the use of VMS raised in comments about page 21.

Pages 68 – 69: Independent monitoring of bycatch of protected species would also be valuable, especially considering the paucity of data currently available and lack of monitoring programs for some species. Where fishery dependant monitoring programs are initiated, they must be validated and fishers given adequate training and support.

Page 75 – assessment of hoppers is encouraged. However, as the distribution of pipefish is uncertain, monitoring of incidental catch is critical. Fishery independent monitoring to validate the data should also be undertaken. As with other fishery dependant monitoring, support and training must be provided to fishers if this is to be useful.

Page 76 – it appears that the reference point for turtle bycatch is based on unvalidated, fishery dependant data and not on biological, population assessment data. While this may be the only data available, review of this reference point should be seen as a priority.

Page 76 and 77 – sea snakes: there are no hard data to support the ascertation that the level of risk to sea snakes is moderate. These are inferences drawn from incomplete data and assumptions that spatial and temporal closures and effort reduction (none of which are designed to specifically reduce bycatch) will be effective. Have reef associated sea snakes been recorded as bycatch?

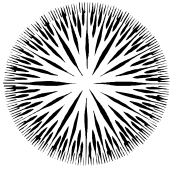
Page 80 – these studies do not account for the potential risk to adjacent habitats and fauna from disruption of interconnectivity.

Page 81 – Any trawling activity removes some of the epibenthic fauna and the cumulative effects are certainly not “may be substantial” they are substantial. And as much of it is undescribed really difficult to know how long these communities will take to recover if they do- as trawling not only removes the epifauna will also change local currents and small pieces of hard substrate which the epifauna needs to attach itself to may also be removed by trawling.

Page 82- BRD's are almost certainly completely ineffective in avoiding the capture of sessile invertebrates.

This plan highlights the lack of knowledge of many of our commercially important invertebrates for a more comprehensive review of this see the following [http://www.amonline.net.au/invertebrates/marine\\_overview/index.html](http://www.amonline.net.au/invertebrates/marine_overview/index.html)

Page 83 – research into highly mobile and large marine fauna such as dolphins and sharks is extremely complicated. Unless research programs are designed specifically to monitor these animals (as opposed to general observations of the fate of discards by onboard observers), it cannot be stated that whether discards are or are not having an effect on these animals. The statement based on Hill 1998 appears to contradict the statement based on Gribble 2001.



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Page 85- not sure how the Trawl Plan will go about monitoring the target of reducing the impact of 25% on the benthos from trawling as we do not know the structure of the community now and how therefore can we assess whether or not we have reduced the impact by this amount. The CSIRO report does not really provide an adequate 1999 baseline on which to make these assumptions.

Page 86 – the capping of effort at 1996 levels is welcomed. However there is no justification provided as to why this level was appropriate or how it was derived. There is no information about how the success of the effort cap in ensuring both ecological sustainability for the environment, or economic sustainability for the fishery, will be assessed or reviewed.

## General Comments

In general, the document is very process oriented. It describes management and research processes at the expense of describing specific management objectives, or evidence as to why the management initiatives are likely to be successful. Although this may be attributable to the lack of key data and the relatively recent introduction of the Trawl Plan, it makes it difficult to assess the sustainability of these fisheries or the probability of the various management strategies being successful. It states *what* is being done or *will be done* but offers little as to *how* these initiatives will be successful in addressing the issue of sustainability.

The document is heavily reliant on research, reviews and management initiatives that are yet to be undertaken. EA will need to monitor the situation closely to ensure these projects, reviews and initiatives are actually completed in satisfaction with the requirements of the EPBC Act.

It is evident that much research is currently underway to provide information required to manage the fishery in an ecologically and economically sustainable manner. While the outcomes of these projects may be some years away, in the interim it is essential to manage the fishery with due caution until these projects provide more detailed information. It should also be noted that the report makes many inferences about the fishery based on incomplete datasets associated with these projects. Until these projects are completed and subject to independent scientific peer review, drawing conclusions, inferences and extrapolations from these projects is premature and could be argued as misleading. Caution is urged.

Management is heavily based on fishery dependant data. This needs to be validated and compliance with reporting requirements assessed if this is to be the primary management tool and basis for setting performance indicators.

Based on the information contained in the QFS report, it is apparent that the fishery should be regarded as WTO until such time as ongoing research and management reviews can provide answers to the critical issues of sustainability of bycatch, habitats and the fishery itself.

The ACRS and AMSA NQ would be happy to expand on any of the points raised in this letter and can be contacted through either Pat Hutchings: (02 9320 6243) or Andrew Chin (07) 4750 0810 or by email:

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Yours sincerely

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