

**APPLICATION TO THE DEPARTMENT OF THE ENVIRONMENT AND
WATER RESOURCES ON THE
SHARK BAY SCALLOP MANAGED FISHERY**

*Against the Guidelines for the Ecologically Sustainable Management of
Fisheries*

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Department of Fisheries
Government of Western Australia



Fish for the future

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1. BACKGROUND

The purpose of this report is to update the Department of the Environment and Water Resources (DEW) on changes in the Shark Bay Scallop Managed Fishery (the Fishery) to enable its re-assessment against the *Guidelines for Ecologically Sustainable Management of Fisheries* under Part 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In November 2001, the WA Department of Fisheries (DFWA) submitted an application to DEW (then Environment Australia) for assessment of the Fishery against the *Guidelines for the Ecologically Sustainable Management of Fisheries*, under Part 13 and 13A of the EPBC Act.

On 11 February 2003, the (then) Minister for the Environment and Heritage amended the list of exempt native specimens to include all specimens that are or are derived from fish or invertebrates, taken in accordance with the *Shark Bay Scallop Management Plan 1994* effectively declaring the Fishery as exempt from Part 13 and 13A of the EPBC Act for a period of 5 years. The exemption will expire on 1 January 2008.

The exemption came with 11 recommendations, focused on ensuring continued good management practices in the Fishery.

A copy of the DFWA application and the DEW assessment report and letter of approval are available on the DEW website

<http://www.environment.gov.au/coasts/fisheries/wa/scallop/index.html>

Further information on the Fishery can also be obtained from the annual *State of the Fisheries* report. *State of the Fisheries* reports published since the original assessment (2002-03, 2003-04, 2004-05 and 2005-06 are presented as Appendices 1-4 to this report) and can also be downloaded at <http://www.fish.wa.gov.au/docs/sof/>

2. SUMMARY OF KEY CHANGES IN THE FISHERY SINCE ITS LAST ASSESSMENT

- Issues relating to the impact of trawling on bycatch species and possible protected species interactions were raised as issues in DEW's recommendations following the Fishery's original assessment. While progress against specific recommendations is provided in the next section of this report, it is worth noting that bycatch reduction devices (BRDs) (grids) were fully implemented in the Fishery from 2003, following a previous trial (including an observer program).
- In addition, a Fisheries Research and Development Corporation (FRDC) funded project to examine biodiversity in trawled and untrawled areas in Shark Bay has been completed. This found no significant difference in species richness or abundance between these areas. The final report on this project is expected to be available late in 2007 and some further details of the project's findings are presented later in this report.
- DFWA is developing a bycatch action plan for the Fishery.
- In the original application to DEW, DFWA undertook to develop lower end triggers for the Fishery based on biological, rather than economic reference points. Over the last three years, the Fishery has moved from post-spawning fishing to pre and post spawning

fishing using a catch rate cut off threshold determined with the aim of allowing up to 40% of the standing scallop stock (as determined by pre-season surveys) to spawn. Once spawning has occurred, the Class B Shark Bay Scallop licensees (i.e. Shark Bay Prawn Managed Fishery licensees) continue fishing for scallops.

- In association with this change, a catch sharing arrangement between the Class A and B Shark Bay Scallop Managed Fishery Licence holders is being trialled in 2007 and 2008. Under this arrangement, the Class A licensees are managed on the basis of taking 72% of the estimated sustainable catch, while the Class B licensees who fish post spawning are managed around taking 28%. The longer term future of this catch sharing arrangement is being examined as part of a broader strategic review of the Shark Bay Prawn and Scallop Managed Fisheries.
- Also in DFWA's original application, it was indicated that fishery independent research would continue to investigate the environmental influences affecting scallop recruitment in Shark Bay. In line with this commitment, a re-analysis of environmental data up to 2006 was undertaken. This reinforced the previous understanding that scallop recruitment processes are complex. While the state of the Leeuwin current during spawning appears to be important, a favourable Leeuwin current does not, by itself, necessarily guarantee strong recruitment and it appears that other environmental factors are also important.
- Following similar work on other major WA fisheries, a strategic management review is currently underway for the Shark Bay Scallop and Shark Bay Prawn Managed Fisheries. In association with the review process, an FRDC project to investigate the effect of trawling on scallop recruitment has been approved.

3. PROGRESS IN IMPLEMENTING RECOMMENDATIONS

- 1. Opportunity should be provided to conservation, community, recreational fishing and world heritage area management interests to participate in the processes of the main advisory body to the WA Fisheries Minister for this fishery. DFWA should also ensure that any relevant indigenous interests are considered through appropriate consultative mechanisms.**

The Joint Trawl Management Advisory Committee (MAC) was established in January 2002 to provide advice to the Minister on matters relating to the Shark Bay Prawn, Shark Bay Scallop and Exmouth Gulf Prawn Managed Fisheries.

Commercial, conservation and recreational interests are included in the consultative process through membership of the MAC. The committee meets 1 to 2 times per year.

Currently, the structure of the committee is as follows:

- Independent chair
- 8 members with expertise in the commercial prawn and scallop fishing industry
- 1 member with recreational fishing sector expertise
- 1 member with community sector expertise
- 1 member with conservation sector expertise
- Chief Executive Officer (ex officio) or nominee

The Committee does not include a specific position for a world heritage area representative or a member of the indigenous sector. However, to ensure that world heritage and indigenous interests are included in the MAC consultation process, when relevant or deemed

appropriate they are consulted. DFWA is also represented at World Heritage scientific and community advisory committee meetings, providing the opportunity for World Heritage interests to raise any issues of concern with DFWA.

- 2. The ESD report, including all performance measures, responses and information requirements, should be formally incorporated into the management regime and decision making process within one year, with a clear timeframe for implementation.**

DFWA reports against the performance measures for the Fishery in the annual *State of the Fisheries Report*. DFWA liaises with Industry on an annual basis to determine the fishing arrangements and catch rate thresholds for the coming year. This regular review ensures management arrangements are conducive with maintaining resource sustainability.

- 3. DEW should be informed of any changes to the management plan or managerial commitments in the ESD report.**

There have been no major amendments to the management plan since accreditation.

However, a trial of quad gear has been underway for the past 2 years in the Shark Bay Prawn Managed Fishery and for Class B Shark Bay Scallop Managed Fishery licensees under a *Fish Resources Management Act 1994* Exemption. As Class B Scallop licensees are also Shark Bay Prawn licensees, this type of gear is used to take scallops.

The 375 boat unit rule is to be formally abolished by a management plan amendment. An FRMA exemption is currently in place that allows boats greater than 375 boat units to operate within the Fishery.

DFWA and industry are currently working together to undertake strategic management reviews of the Shark Bay Prawn and Shark Bay Scallop Managed Fisheries. The Steering Committee formed to undertake the review has released a draft report in the form of *Fisheries Management Paper 222* (Appendix 5) which can be downloaded from <http://www.fish.wa.gov.au/docs/mp/>. It is anticipated that the review will be finalized in the coming months.

- 4. The ESD report should be amended to incorporate timeframes for all management responses to breaches of performance measures.**

Over the last 3 years, the Fishery has developed a real time management response program to ensure sustainability and also to enhance economic return to the Fishery through maximising scallop meat weight and condition.

The DFWA undertakes an annual pre season abundance survey and based on the outcomes of the survey the DFWA works with industry to set catch rate thresholds and fishing arrangements for the coming year within the context of the management objectives for the Fishery. Based on real time information on catch and catch rates immediate action is taken to control operations in the Fishery.

- 5. The implementation of a decision rule to close the fishery or prevent commencement of the fishing season, when recruitment of scallops is sufficiently low, should be pursued as a priority.**

Over the past 2 years the Shark Bay Scallop Managed Fishery has moved from post spawning fishing with a pre-determined season closing date to a combination of pre and post spawning fishing using a catch rate cut-off threshold to close the Fishery as well as setting

different catch rate thresholds for different parts of the Fishery (ie Denham Sound catch rate threshold is higher than north Shark Bay due to only daylight fishing being permitted in this area).

The catch rate cut-off threshold for the season is determined following pre-season research surveys (which determine the size and abundance of scallops in the fishing grounds) and through discussion with industry,. The pre-spawning catch rate level is chosen to ensure that up to 40% of the standing scallop stock will be left to spawn. When recruitment of scallops is low, the Fishery will only open for a short period of time. The DFWA's Research Division monitors the catch rate throughout the season, and when the fleet reaches the threshold catch rate over two consecutive days, the boats cease fishing for scallops. This allows spawning to occur with the remaining stock. The B Class scallop licensees (prawn fleet) then continue fishing after the spawning period (July in 2006 and August or September in 2007) until either the catch rate cut off, or the proportional scallop catch sharing limit, is reached.

Legislatively, the *Shark Bay Scallop Managed Fishery Management Plan 1994* allows for the CEO to make a determination to prohibit fishing in the Fishery at any time, when it is in the better interest of the fishery to do so, thereby providing a quick and efficient mechanism for giving effect to season opening and closing times.

- 6. Permitted byproduct should be limited to species currently harvested, with a robust system developed to add or remove species as appropriate. Suitable catch triggers should be developed to ensure any change in targeting behaviour can be detected and addressed as it occurs. Management responses should be clarified, with timeframes for implementation, to address such changes, so that the management arrangements are able to minimise threats to byproduct species.**

A draft Fisheries Management Paper titled "Managing the Take of Byproduct in Managed Fisheries in Western Australia" is being developed as part of the process of meeting this recommendation (and dealing with byproduct issues generally in WA Fisheries).

It is proposed to manage the take of byproduct in managed fisheries by including a schedule within the management plan which specifies a list of byproduct species historically caught in the fishery where the take of those species is not otherwise prohibited as well as catch limits for each species. The Minister has given his in-principal support for this strategy to deal with the take of byproduct.

The DFWA's Research Division is in the progress of examining byproduct catch data for all of the trawl fisheries in order to produce schedules specific to each fishery.

The results of the Fisheries Research and Development Corporation (FRDC) Biodiversity project (see Recommendation 8) have also provided an inventory of bycatch (including byproduct) species caught at fixed sites throughout Shark Bay and provides information on the spatial and distribution of byproduct species. This report will be completed by late 2007.

- 7. DFWA should participate in any cross-jurisdictional activities regarding relevant target and byproduct species, including squid.**

DFWA currently participates in various cross-jurisdictional activities in order to ensure sustainability of the State's fish stocks. For example, DFWA regularly engages DEW regarding interaction with protected species and also consults with the Department of Agriculture, Forestry and Fisheries regarding the Offshore Constitutional Settlement and with the Australian Fisheries Management Authority (AFMA) on cross-jurisdictional fishery issues.

DFWA has not had the need to consider any cross-jurisdictional activities regarding species taken or activities within the Fishery.

8. Ongoing monitoring should be implemented sufficient to identify long-term trends in bycatch between fished and unfished areas to ensure that information used in the risk assessment for the fishery remains based on accurate and current data.

The FRDC Biodiversity project is working toward meeting this recommendation. The final report will be out in late 2007 but preliminary results indicate high species richness occurred in trawled sites as well as untrawled sites. The maximum fish and invertebrate species richness was found in the northern and southern extremes of the scallop trawl grounds, and the minimum was found at the northern limits of Shark Bay. Similarly, no consistent patterns were observed with species evenness and diversity indices when comparing trawled and untrawled sites. Differences in diversity measures were observed both between sites and sites within assemblages at a given point in time (spatial differences), and from year to year at each sample location (temporal differences). However these differences were not consistent and were not attributable to whether a site was trawled or not. This indicates that many other factors in addition to trawl impacts are important in species richness and diversity.

One of the main objectives of this study was to compare the faunal composition between trawled and untrawled areas and if the faunal composition was similar, then it was highly likely that closed areas act as refuges for the majority of those species impacted by trawling. Faunal composition was similar in trawled and untrawled areas in general and therefore it is sufficient that the principal form of monitoring (and indeed management) of species diversity matters in the Shark Bay fisheries is the extent of the trawled areas. The percentage of area trawled should not exceed that observed in recent years (5-25% of area of the fishery open to trawling).

Furthermore, the bycatch in the Fishery is relatively low due to the A-class boats using larger mesh size (100mm). (Note: issues related to bycatch by B-class licensees [i.e. prawn licensees] need to be considered in the context of that fishery).

A new FRDC project, which will commence in 2008, will trial larger mesh and square mesh cod ends in the scallop fishery. If these net configurations are ultimately adopted in the Fishery, this will potentially reduce bycatch even further.

9. The importance of specific areas and habitats to applicable bycatch species during all stages of their life cycle should be considered when applying the results of biodiversity research to management arrangements.

The FRDC Biodiversity project addresses this recommendation. It is considered that the substantial permanent area closures and other temporal closures that are applied in the Fishery provide protection to the key life history stages of the majority of the bycatch species caught. The project identified that the 10-20 most common species of fish and invertebrates could be used as indicator species (for trends in abundance and diversity measures) in Shark Bay. These are all relatively short-lived, abundant and widespread in both trawled and untrawled areas.

Therefore, the permanently closed nursery areas and other closures already in place in the Fishery will afford protection to habitats important for key bycatch species.

10. A mechanism should be developed to enable the amendment of management arrangements to respond to new information or future Government plans and policies.

Section 65 of the FRMA provides for the amendment of management plans.

The *Shark Bay Scallop Managed Fishery Management Plan 1994* (clause 9) also provides for the ability to alter the management arrangements (season opening and closing dates, area closures, etc.) from year to year according to what is considered to be in the better interests of the fishery.

11. All protected species interactions by commercial operations should be reported and coupled with an education program to ensure industry has the capacity to make accurate reports.

The Research logbooks completed by licence holders within the Fishery include provisions to report any interactions with protected species.

Reporting requirements are included as a standing item on the agenda for annual pre-season briefings. Fishers' are also given a Protected Marine Species Identification Guide that contains:

- pictures and a brief description of relevant protected species; and
- specific details to include in interaction reports.

4. CONCLUSION

This report should provide sufficient information for DEW to re-assess the Fishery against the *Guidelines for the Ecologically Sustainable Management of Fisheries*, under Part 13 and 13A of the *EPBC Act 1999*. However, should you require any further information please contact Joanne Kennedy on (08) 9482 7394 or via email Joanne.Kennedy@fish.wa.gov.au