

**APPLICATION TO THE DEPARTMENT OF THE ENVIRONMENT,
WATER, HERITAGE AND THE ARTS ON THE
NORTHERN DEMERSAL SCALEFISH MANAGED FISHERY**

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

August 2009



Government of Western Australia
Department of Fisheries

**DEPARTMENT OF FISHERIES, WESTERN AUSTRALIA
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BACKGROUND

The purpose of this report is to update the Department of the Environment, Water, Heritage and the Arts (DEWHA) on changes in the Northern Demersal Scalefish Managed Fishery (NDSF) to enable the re-assessment of the NDSF against the *Guidelines for the Ecologically Sustainable Management of Fisheries*, under Part 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Previous Assessment

In June 2004, the Western Australian Department of Fisheries (the Department) submitted an application to DEWHA for assessment of the NDSF against the *Guidelines for the Ecologically Sustainable Management of Fisheries*.

On 11 November 2004, the (then) Minister for the Environment and Heritage amended the list of exempt native specimens to include all species taken in accordance with the *Northern Demersal Scalefish Fishery Management Plan 2000* effectively declaring the Fishery as exempt from Part 13 and Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* for a period of five years. The exemption will expire on 11 November 2009.

The exemption came with 11 recommendations, to further strengthen the effectiveness of the management arrangements for the NDSF and minimise environmental risks in the medium and longer terms.

A copy of the Department's application and the DEWHA assessment report and letter of approval are available on the DEWHA website at:
<http://www.environment.gov.au/coasts/fisheries/wa/northern-demersal/index.html>

Re- Assessment Process

The documentation attached to enable the re-assessment of the NDSF consists of:

1. a summary of the key changes that have occurred in the NDSF in the past five years;
2. a report addressing the progress of the NDSF against each of the 11 recommendations;
3. a copy of the NDSF annual reports, published in the annual State of the Fisheries Report (SoF Report) over the past five years (see North Coast Bioregion; Appendix 1);
4. a copy of Dr Jim Prescott and Mr Nokome Bentley's NDSF independent review report; and
5. other ancillary information to assist in and complement the re-assessment process.

Should you require any further information, please contact Rachel Green on (08) 9193 8618 or via email to Rachel.Green@fish.wa.gov.au.

1. SUMMARY OF KEY CHANGES IN THE NDSF SINCE 2004

- In the first eight years following the introduction of management controls in the NDSF (1998-2005), the fleet only achieved its 800t notional Total Allowable Catch (TAC) in Area 2 in 2005, recording 922t. Despite meeting the notional TAC, a large amount of the allocated effort remained unutilised in 2005.
- Analysis of the geographical area within Area 2 of the NDSF where the reported catch had been taken showed that fishing effort had been concentrated within restricted traditional fishing grounds, and that there were offshore and inshore waters within Area 2 that were not being fished.
- In 2006, NDSF licence holders agreed on a number of management arrangements aimed at reducing latent fishing effort within the historically fished region of Area 2, and to develop the lesser-fished waters of Area 2.
- Under the 2006 NDSF licence holder industry agreement, Area 2 of the NDSF was separated into three separate Zones, to limit the effort in the traditional fishing grounds (Zone B) to within an estimated sustainable total allowable catch (800t), and to encourage exploration of the lesser-fished inshore waters (Zone A) and offshore waters (Zone C) of Area 2 of the NDSF. A map illustrating the three zones of Area 2 is at **Appendix 1**.
- The 2006 NDSF industry agreement included:
 - An effort determination of 1760 fishing days for Area 2 of the NDSF, divided under the industry agreement between Zone B (1144 standard fishing days) and Zone A (616 standard fishing days);
 - An additional 50 standard fishing days per 160 unit licence (550 standard fishing days) in Zone C via an Instrument of Exemption, to provide an incentive to develop the lesser-fished waters of Area 2;
 - Changes to the VMS nominations for Area 2 of the NDSF (nomination of fishing zone, fishing commencement and cease fishing on each trip using VMS), and the way fishing time is calculated in the fishery (including the abolishment of travel days). These changes were agreed to, as the VMS nominations and calculation of the extent of fishing under the *Northern Demersal Scalefish Fishery Management Plan 2000*, were outdated and did not reflect the way the fishery operated.
- The 2006 industry agreement continued in the 2007 and 2008 licensing periods, in order to provide additional time for the Department's Research Division to collect further data in which to more accurately assess the Fishery's status.
- In October 2008, the NDSF Annual Effort Allocation Meeting was held in order to facilitate NDSF licence holder consultation and discussion on the proposed effort determination for Area 2 of the NDSF for the 2009 licensing period.
- The outcomes from the NDSF stock assessment model indicated that the breeding stock levels for the two indicator species (goldband snapper and red emperor) in the NDSF were continuing to trend downwards.
- The total reported catch of Area 2 of the NDSF was 908t in 2007, of which 817t was taken in Zone B. Results from the stock assessment model indicated that, if catches remained at the 2007 level or higher in Zone B, that it would be likely to result in the virgin spawning stock biomass of the two indicator species (red emperor and goldband snapper) falling below the target reference point of 40% some time in the future.
- In 2008, a proportion of NDSF licence holders funded Dr Walter Starck to develop a critique report released on October 2008 '*The Northern Demersal Scalefish Fishery; A review and recommendations*' (**Appendix 2**) that disputed the virgin stock spawning biomass estimate used in the NDSF stock assessment model and the associated management arrangements of the NDSF.

- In October 2008, the Department and NDSF licence holders agreed for the Department to contract an independent review of the inputs into the stock assessment model and to consider the recommendations to Dr Starck's critique of the NDSF management arrangements.
- For the 2009 licensing period, the Department implemented an enforceable management package for the NDSF to ensure that the risk of increased exploitation of fish stocks was minimised until the results from the independent review could be considered in July/August 2009. The management package for the 2009 licensing period included:
 - A formal effort determination of 1144 standard fishing days in Area 2;
 - an Instrument of Exemption granting all NDSF Area 2 licence holders additional fishing access in the lesser-fished areas of the Fishery, including an additional 616 standard fishing days in Zone A and 550 standard fishing days in Zone C.
 - an Instrument of Exemption exempting persons fishing under the authority of all NDSF Area 2 licences from Clause 22 and Subclauses 25(2), 25(7) and 25(8) of the *Northern Demersal Scalefish Fishery Management Plan 2000* (which relate to the outdated nomination to fish requirement and calculation of fishing effort in the Fishery). The Exemption included conditions which outlined the means by which the calculation of fishing time would be undertaken, and also underpinned the more accurate recording and calculation of the use of fishing time under the developmental fishing arrangements for Zones A, B and C of Area 2; and
 - amended Northern Demersal Scalefish Managed Fishery ALC Approved Directions, which included the industry agreed fishing nomination requirements in an enforceable framework.
- In 2009, Dr Jim Prescott was contracted to undertake the independent review of the NDSF, particularly the inputs into the stock assessment model.
- On 15 July 2009, Dr Prescott and Mr Nokome Bentley presented the findings of their independent review to the Department and Northern Demersal Scalefish Managed Fishery licence holders.
- On 21 July 2009, Dr Prescott and Mr Bentley provided their final report 'Northern Demersal Scalefish Fishery: Independent review of the WA Department of Fisheries stock assessment and a review commissioned by the Kimberley Professional Fishermen's Association' (**Appendix 3**).
- The independent review report:
 - concluded that the age structure model used by the Department was appropriate, however recommended freeing up the model to estimate natural mortality (within boundaries), steepness, catchability and recruitment variability. The report included an example of an alternative model that incorporated the above recommendations. The alternative model outputs were in-line with the Department's model, with additional uncertainty captured to more accurately predict the actual uncertainty of the model outputs; The results of the model runs are broadly consistent with the Departmental advice.
 - recommended improved error checking and validation of input data, reconsideration of model parameterisation and the use of a Markov chain Monte Carlo (MCMC) methods to estimate uncertainty, additional diagnostics of model fit, sensitivity analyses and improved documentation;
 - recommended that the biomass performance indicator be reviewed;
- The Department is currently finalising its response to each of the independent review recommendations, for further liaison with NDSF licence holders in August 2009.

2. PROGRESS ON IMPLEMENTING RECOMMENDATIONS ON THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF THE NDSF

- 1. DFWA to inform DEWHA of any material change to the Fishery's legislated management plan and/or arrangements that could affect the criteria on which EPBC decisions are based, within 3 months of the change being made.**

Since 2004, the NDSF has continued to operate in accordance with the management regime in force under the *Fish Resources Management Act 1994*. No amendments to the management regime have been made that adversely affect the target species, or negatively impact on bycatch, byproduct, protected species or the ecosystem. The subsidiary legislation summarised in section 1 has improved the sustainable management of the NDSF.

- 2. DFWA to ensure, where appropriate, that any relevant indigenous, conservation, world heritage and recreational interests in the Fishery are considered through consultative mechanisms.**

The Department of Fisheries Regional Broome Office, held public information sessions on commercial fisheries (including NDSF) research programs and management arrangements in 2005, 2006, 2007 and 2009, as part of the Annual Commercial Fishing Industry Consultative meetings held in Broome.

Representatives from the indigenous sector (Department of Indigenous Affairs), conservation and world heritage (WWF) and recreational sector (Kimberley Regional Recreational Fishing Committee) will be invited to be involved in the NDSF ERA risk assessment review to be conducted in 2010.

- 3. The ESD report, including all performance measures, responses and information requirements to be incorporated into the management regime and decision making process.**

The abovementioned management aspects are all included in the current NDSF management and consultative framework that includes the stock assessment output and appropriate effort level decisions.

The Department also reports against performance indicators in the NDSF Annual State of the Fisheries Reports.

- 4. DFWA, within 2 years, to incorporate into the management regime fishery specific objectives, performance indicators and performance measures for all key byproduct species or species groups where annual landed catch is greater than 10 tonnes.**

Due to resource limitations the Department is only able to incorporate key indicator species (goldband snapper and red emperor) into the management regime fishery specific objectives, performance indicators and performance measures.

- 5. DFWA, within 1 year, to also incorporate into the management regime an objective to minimise protected/listed species interactions, to minimise or maintain at sustainable levels the take of other non-retained species and to minimise impacts on the marine environment.**

A compulsory daily/trip logbook was introduced to the NDSF in 2008, and includes a specific section for the reporting of protected/listed species interactions. The incidence of protected/listed species interactions in Area 2 of the NDSF is low. However the Department continues to monitor the reported interactions.

As a result of the catching capacity of the gear and the marketability of most species caught there is a limited quantity of non-retained bycatch in the NDSF. The impact of the NDSF on the sustainability of non-retained species is considered to be negligible. The most common bycatch species continues to be the starry triggerfish, *Abalistes stellatus*, but the numbers taken are not considered to be significant, and most are released alive.

The NDSF's impact on the general environment (including removal of/damage to organisms, benthos, ghost fishing) has remained unchanged since 2004, and is considered to be negligible/low due to the fishing practices and gear type used.

6. DFWA, in it's State of the Fisheries Report, to report on the performance of the fishery against performance measures that relate to the sustainability of the Fishery.

A description of the status of the NDSF, catch and effort information, performance of the NDSF against performance indicators is reported annually in the Department's State of the Fisheries Report. The NDSF State of the Fisheries Reports since 2004 can be found at **Appendix 5** or via the following link:

State of the Fisheries Report, Western Australia, Department of Fisheries

7. DFWA to develop and implement, within 18 months, a system to validate fishery dependant data on catch and effort for all target and byproduct species in the NDSF.

Due to limited resources, the Department's fishery independent validation of catch and effort data is limited to:

- the use of fish processor statutory returns and establishment inspections for validation of fishery dependent catch data on an opportunistic and intelligence driven basis; and
- the use of Vessel Monitoring System (VMS) data for the validation of fishery dependent effort data on an opportunistic and intelligence driven basis.

8. Within 18 months, DFWA to develop a process to improve estimates of recreational and indigenous take and factor these into stock assessments and management controls to ensure overall catch levels are sustainable.

The last recreational fishing Creel survey undertaken in the Pilbara/Kimberley region was in 1999. No further recreational fishing surveys have been undertaken since this time due to resource constraints.

Given the distance offshore, the indigenous take in Area 2 of the Fishery is considered to be non-existent, and recreational fishing effort low.

9. DFWA to continue to work towards developing more refined yeild estimates of target and major byproduct species to determine sustainable harvest levels, particularly for red emperor and goldband snapper.

This is ongoing. The model and data are continuously refined and updated. There is an agreement with industry to fund a technical officer to collect ongoing age structure data every second year for key indicator species for input into the stock assessment model.

10. DFWA to continue to cooperate with other relevant jurisdictions to pursue complementary management and research of shared stocks for all target and by-product species that may be affected by cross-jurisdictional issues.

DFWA is working with the Commonwealth and other State jurisdictions to improve the management of shared northern red-snapper stocks. As a member of the Northern Australian Fisheries Managers (NAFM) forum, the DFWA is actively involved in pursuing complementary management arrangements in relation to shared stocks with other jurisdictions.

11. DFWA will provide a mechanism by which fishers are able to record interactions with those non-retained species that are at risk from the Fishery.

NDSF licensees currently have a provision to report non-retained species in their logbooks. The Fishery's annual consultative meetings are used as an opportunity to reinforce the need to report these interactions. A NDSF daily/trip research logbook has been implemented to improve the capacity for bycatch reporting in this Fishery. There is ongoing education of licensees of the need to report interactions.

12. DFWA to provide a mechanism, which allows fishers to record interactions with protected/listed species. DFWA to implement an education program to ensure that industry has the capacity to make these reports at an appropriate level of accuracy.

The NDSF daily/trip logbook includes a section for the reporting of protected/listed species interactions. All NDSF licence holders have been informed of their protected/listed species interactions responsibilities under the *Environment Protection and Biodiversity Conservation Act 1999*, and all licence holders have been issued with copies of the NHT published '*protected species identification guide*' for reference.

Additionally, a Memorandum of Understanding is currently being developed between DoFWA, DEWHA and the State Department of Environment and Conservation for the reporting of protected species interactions.