

# **NORTHERN TERRITORY OFFSHORE NET AND LINE FISHERY**

## **Export Exemption Submission**

### **RE-ASSESSMENT REPORT**

**OCTOBER 2007**

**A report prepared for the Department of Environment and Water Resources (DEW) as required for assessment under Part 13 and 13 A of the *Environment Protection and Biodiversity Conservation Act*.**

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## **Introduction**

The Northern Territory Government's Department of Primary Industry, Fisheries and Mines (DPIFM) submitted a document to the Department of Environment and Water Resources (DEW) for assessment of the NT Offshore Net and Line Fishery (ONLF), previously known as the NT Shark Fishery under Parts 13 and 13 A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The assessment resulted in the fishery being declared an approved Wildlife Trade Operation (WTO), exempt from the export regulations of the EPBC Act, for a period of 6 months beginning in November 2004. Based on a number of initiatives introduced by DPIFM as part of the WTO conditions, DEW deemed that the ONLF was managed on a sustainable basis. These initiatives, together with further improvements in the management regime, were sufficient to ensure sustainability over a proposed extension of the WTO until the 30 November 2007.

Following the initial assessment of the ONLF, a substantial level of information is now publicly available regarding the environmental performance of the fishery. In order to focus limited resources on continuous improvement within the fishery and to build on the findings from the initial assessment, the submission requirements were streamlined (by the regulating authority) to align with annual reporting requirements for the fishery.

As part of this new process, Guidelines for the Ecologically Sustainable Management of Fisheries (the Guidelines) were developed, along with accompanying terms of reference. The terms of reference require the preparation of a draft assessment report that assesses all impacts of the fishery on the environment. The draft assessment report is then used to determine if the fishery is ecologically sustainable.

Since WTO accreditation, DPIFM has submitted to DEW regular reports regarding the progress and status of the ONLF, including the report on the progress of implementing recommendations (November 2006), Quarterly Assessment Reports (May & March 2005), and the 2004, 2005 Fishery Status Reports.

The ONLF is now due for reassessment against the Guidelines. DPIFM has prepared an assessment report that includes this document, the annual Fishery Status Reports published since the initial assessment in 2004, and the ONLF annual reports submitted to DEW. In compiling the report, DPIFM has addressed the Guidelines and where necessary, responded to each of the issues outlined.

As a result of the initial assessment of the fishery in 2004, a series of recommendations were agreed to between DEW and DPIFM. These agreed recommendations were focused on ensuring the continuation and enhancement of current sustainable management practices. This document specifically addresses these recommendations and provides a response to each.

The document should be read in conjunction with the Annual Fishery Status Reports, and the initial assessment document that was provided to DEW in 2004. For a comprehensive understanding of the legislative arrangements in

place for the ONLF please refer to the *Northern Territory Fisheries Regulations* available for download at [www.nt.gov.au/dpifm/Fisheries/index.cfm?header=Legislation](http://www.nt.gov.au/dpifm/Fisheries/index.cfm?header=Legislation)

Copies of the NT Annual Fishery Status Reports are available to download at [www.nt.gov.au/dpifm/Fisheries](http://www.nt.gov.au/dpifm/Fisheries).

Please note that for all management decisions, NT Fisheries uses the most currently available data provided through a desktop system linked with the compulsory logbook data program. Such data are summarised for public access, where appropriate, in the Annual Fishery Status Reports. These are published after all data for the calendar year have been compiled, validated and thoroughly analysed. A copy of the 2006 Fishery Status Report is expected to be released and available for download shortly.

DPIFM will ensure conditions recommended by DEW in the assessment process will be addressed in the 2007 and subsequent Annual Fishery Status Reports.

The following progress has been made by DPIFM in implementing the DEW recommendations:

### ***DEH Recommendation 1***

*“The Department of Primary Industry, Fisheries and Mines to review the adequacy of management objectives, performance indicators, trigger points and management actions and develop species specific measures based on a risk analysis by June 2006.”*

#### *DPIFM's Response*

A review of the fishery's management objectives, performance indicators, trigger points and management response was conducted in 2005 and 2007. The reviews and subsequent risk analyses resulted in the development of species specific measures for those species identified as least sustainable refer Attachment 1. A copy of the Fishery's current management objectives, performance indicators, trigger points and management response has been published in the 2004 and 2005 Fishery Status Reports. This practice will be continued in future Fishery Status Reports published by DPIFM.

### ***DEH Recommendation 2***

*“By the end of 2006, DPIFM to review its catch logbook data validation program and incorporate fishery independent information as appropriate.”*

#### *DPIFM's Response*

A recently completed review of the ONLF management arrangements by DPIFM has determined that current collection and validation of catch logbook data satisfactorily meets data requirements to ensure sound management of the fishery, based on a precautionary approach.

All operators in the ONLF are required by legislation to complete and return daily logbook data. The collection, entry and verification of catch logbook data is conducted by DPIFM officers and researchers with robust reviews undertaken annually. Fisheries managers and researchers constantly review data generated by the logbook program through the daily requirements of fisheries management. Data is usually available after 2-3 months and are accessed through a desktop query system.

Compliance checks are regularly conducted by the NT Police Marine, Fisheries and Enforcement Section (PMFES). This includes verification of catch returns against processor returns (i.e. requirement of all operators to specify where they are selling their product). No irregularity in the comparison of vessel logbooks with on-board catches or breaches of the *Fisheries Act* has been reported. Based on previous targeted operations and continuous in-port and at-sea checks, PMFES has advised that the risk of non compliance in the fishery is considered low.

In conjunction with the logbook program, a coordinated Observer Program is being conducted which regularly compares and validates the information submitted by the operators. Fisheries' observers collect biological samples and spatial data from ONLF vessels and bycatch information in order to improve stock assessments. While onboard, observers validate catch returns and assist commercial fishers in completing accurate logbook returns.

Analysis of observer reports and logbook information has verified correct correlation between the observed catch compositions and quantity, and the corresponding logbook information regarding catch trends. Outcomes from the compliance review are documented in the Fishery Status Reports.

Target observer coverage is set at 7% based on the expert opinion of the members of the Northern Stock Assessment Group (NSAG), which was formed under the auspices and direction of the Northern Australian Fisheries Management forum (NAFM). Recognising the small size of the fishery, this level of coverage represents a compromise between resources available for monitoring of the fishery and the ability to detect changes in species and size composition. The observer not only collects information about catches that are not otherwise available (e.g. size composition) but observes fishing operations and provides liaison.

Additional to the observer monitoring program is a collaborative intensive shark tagging program. This tagging study aims to develop the protocols for estimation of the fishing-related and natural mortality for the two most commercially important species, the Australian black-tip (*Carcharhinus tilstoni*) and Spot-tail (*C. sorrah*) sharks, as well as providing information on other sharks species. The results of this program will allow the development of a mark-recapture based monitoring approach and support a series of mathematical models incorporating mortality estimates. These will be used to evaluate fishing mortality rates and the susceptibility of populations of these sharks under current and alternative future management arrangements. It is anticipated that these activities will support new and additional monitoring protocols and management arrangements leading to better spatial and temporal management of shark fisheries in northern Australia.

At present a total of 1545 sharks have been tagged. Of these 820 are of the target species, *C. tilstoni* and *C. sorrah*. The other tagged sharks are a combination of the 21 other shark species that are caught as by product / catch in the ONLF. The added benefit of this project is that it is also providing valuable information on rarer interacted non target species, thereby helping to ensure that negative impacts of fishing on these species are minimised.

NT Fisheries' response to Recommendation 5 further expands on the use of the observer program and independent projects to validate the logbook program.

### ***DEH Recommendation 3***

*"DPIFM to continue to improve the system to identify and record shark catch (target, byproduct and bycatch chondrichthyans) on a species-specific basis by June 2006. A component of this system should be an education program to ensure that industry has the capacity to make these reports at an appropriate level of accuracy."*

#### *DPIFM's Response*

Since the last assessment in 2004, DPIFM has worked closely with both industry and relevant scientific experts to improve the compulsory logbook reporting system. This work has been complemented by the development and enhancement of an identification/education program for fishers.

Specifically, shark identification guides have been produced and, together with copies of the book, *Field Guide to Australian Sharks & Rays* (Daley et al. 2002), distributed to all active ONLF operators. In addition, industry has developed an Environmental Management System for the fishery which includes identification guides of marine turtles and sawfish. Provision of these guides and books assist with correct identification and reporting of shark catches by the fishery. This guide builds upon the "one on one" work undertaken by fishery observers with crews during monitoring voyages.

All ONLF operators receive regular advice from DPIFM and their own representative council (Northern Territory Seafood Council reiterating the need for correct reporting of catches and sustainable fishing practices. All new entrants to the ONLF are interviewed by the ONLF Manager to ensure a thorough understanding and appreciation of the sustainable fishing practices. Additionally, they are briefed on release techniques for Threatened, Endangered and Protected (TEP) species and provided with a copy of the National Heritage Trust's *Protected Marine Species Identification Guide* to assist with identification of turtles, sawfish, sharks and other protected species in order to ensure accurate reporting.

Logbooks have been amended to expand the existing capacity to record the twelve major target and byproduct specific species. For research purposes, detailed tagged shark interaction can also now be recorded in the logbook returns.

An additional measure to improve the reporting of interactions with TEP species has also been introduced into the fishery since the original submission in 2004. As a result, all commercial fisher log books now include a front cover that outlines their reporting requirements for TEP species under the *EPBC Act*.

Furthermore, ONLF logbooks have been amended for the 2006/2007 logbook year onwards, to include capacity to record bycatch by weight on a shot by shot basis. Logbooks for the Barramundi Fishery and Restricted Bait Net Entitlements were also amended to enable recording of all sawfish and *Glyphis* species interaction.

One outcome expected from the Charles Darwin University, Australian Institute of Marine Sciences (AIMS), DPIFM and fishing industry collaborative research project, *Estimating fishing-related mortality and designing sustainable management protocols for shark fisheries in North Australia*, will be the prescription of new and additional monitoring protocols and management arrangements leading to better spatial and temporal management of shark fisheries in northern Australia. When available, DPIFM will analyse the results of this project and make changes to logbooks or management arrangements where necessary.

In addition, DPIFM is participating in AFMA-funded research, *Developing Catch Statistics for the Illegal Shark Indonesian Fishery of northern Australia*, with CSIRO and AIMS. This will provide valuable tools for distinguishing shark species taken in northern Australian waters by fin, thus creating a biological research and compliance tool, as well as pertinent information on what may be the most significant factor affecting the sustainability of northern Australian sharks.

#### **DEH Recommendation 4**

*“DPIFM to develop a program for stock assessments of target species on a triennial basis from 2006. Findings are to be used to review the adequacy of management objectives, performance measures, triggers and management responses within 6 months of the stock assessment.”*

#### **DPIFM's Response**

The Northern Stock Assessment Group (NSAG), formed under the auspices and direction of Northern Australian Fisheries Management forum (NAFM) incorporates expertise from the NT, WA and QLD fisheries agencies, AFMA, BRS, Charles Darwin University, CSIRO and AIMS. NSAG has agreed to undertake a triennial assessment of the black tip sharks *C. tilstoni*, and *C. sorrah*. The first occurred in 2005.

At the 2005 NSAG meeting the stock assessment model for blacktip sharks was updated with the inclusion of revised and updated catch and effort series from NT, QLD and WA. When the assessment model for blacktip sharks was updated it indicated no substantial observed changes and that the combined

long term sustainable yield should remain at around 2000 tonnes annually. This figure is double the current harvest level for blacktips.

NSAG members reported that both Queensland and Northern Territory datasets indicated catch and effort were steadily rising throughout the 1988 to 2003 period. Normally an increasing CPUE would indicate an underlying increase in the biomass of the stock. However given both catch and effort are increasing, it is most likely there has been an increase in the targeting of grey mackerel in the gill net component of the fishery. Given the low number of operators in the fishery, care must be taken in interpreting catch trends as they may reflect business decisions rather than fishery trends.

Market forces, in the form of improved local market acceptance of grey mackerel and the development of export markets, have led to higher prices that in turn may have stimulated the increase in effective effort. Higher catch rates may be a simple consequence of fishers targeting grey mackerel. DPIFM will continue to monitor the catch information and will highlight any potential concerns within the NAFM forum.

As NAFM has requested regular updates of assessment of the northern Shark Fisheries, the triennial timeframe suggested by DEW has been adopted and a further assessment will be completed during 2008.

It is of fundamental importance when considering the ONLF to understand that the fishery has deliberately been managed under a strategy of containing effort and therefore catches so that harvest rates are below levels that would impinge on the sustainability of the stock, even though those effort and harvest levels imposed might actually be very conservative, and represent loss of fishing opportunity and therefore economic benefit to the community. The harvest rate strategy is implemented via input controls. As Walters and Martell (2004, p. 59) note, good estimates of the absolute population sizes and recruitments are not required with such an approach.

This is not a fishery based on an output control system that sets an annual Total Allowable Catch (TAC). As Walters and Martell (*ibid.*) emphasise, this would require estimation of total abundance and recruitment – placing “the entire burden of conservation planning on the stock assessment system that provides annual estimates of annual stock sizes”. The management of the fishery has deliberately avoided this problem, recognising the difficulties of stock assessment for a small recovering fishery with only a small resource base and limited sampling capacity, from the outset of the fishery by limited entry.

It is re-iterated that this is a small scale fishery. Effective management of the fishery is based on research conducted over time. In the case of grey mackerel, development of understanding of spatial dynamics of the species' populations has been given priority, including a FRDC project *Determination of management units for grey mackerel fisheries in Queensland and the Northern Territory*. In the interim, the fishery has been very deliberately constrained in size

## **DEH Recommendation 5**

*“From January 2006, DPIFM to implement a scientifically robust observer program sufficient to meet sustainability objectives for the ONLF.”*

### DPIFM's Response

DPIFM recognises the importance of observer coverage and is continuing an observer program with a minimum of 4 to 6 trips per year which equates to approximately 7% coverage of the current level of effort in the fishery.

An assessment of observer coverage needs, sufficient to meet sustainability objectives for the fishery, was undertaken at the NSAG meeting held in the second week of April 2005. The NSAG incorporates expertise from Northern Territory, Western Australia and Queensland fisheries agencies, the Bureau of Rural Sciences, Charles Darwin University, CSIRO and the Australian Institute of Marine Science. It was agreed by the NSAG that the current observer coverage of 7% for the NT Offshore Net and Line Fishery is considered appropriate until further assessment reveals otherwise.

A scientifically robust observer program is proceeding based on ongoing examination of the species composition and biological characteristics for non target species. The observer additionally participates in fishery independent research such as tagging and sample collection.

DPIFM's Research and Development Strategic Plan identified the further enhancement of the observer program with additional resources to increase the program's coverage for the ONLF. This is under review and will consider outcomes of the ARC funded Charles Darwin University research project, *Estimating fishing-related mortality and designing sustainable management protocols for shark fisheries in North Australia*. The project will be evaluated and aspects incorporated, where appropriate, once available.

## **DEH Recommendation 6**

*“From 2005, DPIFM to establish an annual review of bycatch trends and the adequacy of mitigation measures and to include the outcomes of the review in the annual report on the fishery.”*

### DPIFM's Response

A formal review of catch trends, management objectives, performance indicators, trigger points and management actions by DPIFM experts and industry representatives was conducted in 2005, with results published in the 2005 Fishery Status Report.

Continuous monitoring of catch trends (including target, byproduct and bycatch) and review of management objectives is undertaken annually during the development of the Fishery Status Reports. DPIFM publishes a table detailing the management objectives, performance indicators, trigger points and management actions in the Fishery Status Reports and provides a copy

to DEW each year. From 2006, Fishery Status Reports will also contain outcomes of the review of the fishery assessed against triggers points contained within this table.

The recently conducted annual review, which utilised information provided in the FRDC report *Northern Australian sharks and rays: the sustainability of target and bycatch species, phase 2* (2007) determined that the large number of mitigation measures adopted in the ONLF and the other NT fisheries that interact with shark species as bycatch, were considered appropriate and in alignment with a conservative approach. More detailed information regarding this review and determination is outlined in Attachment 1. The 2006 Fishery Status Reports contains the outcomes of the review of the fishery.

The recent review of the fishery also recognised the significant issue of Illegal, Unreported and Unregulated (IUU) fishing in northern Australian waters. While the Commonwealth work to resolve the issue, updates regarding IUU fishing will be provided in the Fishery Status Reports.

Fishery Status Reports are available for download from the DPIFM's internet site [www.nt.gov.au/dpifm/Fisheries](http://www.nt.gov.au/dpifm/Fisheries).

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