Submission to the Department of the Environment, Heritage, Water and the Arts on behalf the NSW fishing industry seeking ongoing export approval for the NSW Ocean Trap and Line Fishery – March 2009

1. Introduction

This submission provides a summary report of the Ocean Trap and Line Fishery since the initial assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in 2006. Information provided is based on the headings contained within Appendix B of the *Guidelines for the Ecologically Sustainable Development of Fisheries – 2nd Edition*. The purpose of the submission is to seek extended export approval for the NSW Ocean Trap and Line Fishery (OTLF) past the current WTO expiry date of 27 July 2009.

Consistent with the requirements of the Commonwealth guidelines, this submission references sections of related documents including the Environmental Impact Statement (EIS)[1] and the approved Fishery Management Strategy (FMS)[1]. Where applicable, fishery and catch information has been updated with the most recent available data and included in the submission.

The EIS for the OTLF, published in March 2006, provides an overview of the existing operation of the fishery at that time, including an assessment of the risks associated with the operation of the fishery, and the measures proposed to address the risks.

Table 1 presents a summary of the OTLF at March 2009.

Share Management Regime

The conversion of five major commercial fisheries, including the OTLF, to category 1 share management was completed on 5 February 2007. Share Management Plans have been adopted for each of the five commercial fisheries. A Supporting Plan has been gazetted (encompassing rules that apply to multiple commercial fisheries) and a range of changes have been made to the *Fisheries Management Act 1994* and *Fisheries Management (General) Regulation 2002* to complement the introduction of share management. Major benefits of share management include:

- provision of a secure fishing access right for fishing businesses that hold shares and endorsements in a share management fishery, thus providing a greater incentive for shareholders to sustain the resource and maintain or improve the value of the entitlements;
- providing a stronger basis for restructuring the fishery, including the application of different minimum shareholding levels over time;
- a stronger foundation for linking the fishing entitlement (shares) to resource access (e.g. such as the number of days/nights fished); and
- from a business efficiency perspective, greater flexibility for fishing business owners to adjust the structure of their fishing businesses.

The *Fisheries Management (Supporting Plan) Regulation 2006* and the *Fisheries Management (Ocean Trap and Line Share Management Plan) Regulation 2006* are available at www.legislation.nsw.gov.au

Ocean Trap and Line Fishery Management Strategy

The OTL FMS was finalised in November 2006. NSW DPI and industry have worked cooperatively to implement many actions contained in the OTL FMS aimed at addressing issues identified in the OTLF EIS. The changes include many direct actions such as modifying fishing gear to minimise impacts (e.g. implementation of fish escape panels in fish

[1] Available at www.dpi.nsw.gov.au/fisheries/commercial/ea

traps, mandatory use of circle hooks on all set lines, and prohibition on the use of bottom set lines with wire trace line in waters within 3 nautical miles of NSW coastal baselines); limiting the number of traps, lines and hooks used in the OTLF; prohibition on use of automatic baiting machines; and implementation of a number of fishery closures for grey nurse sharks. Indirect actions, such as use of scientific observers, new reporting provisions for elasmobranch species including production of a comprehensive shark and ray identification guide, and new reporting provisions for threatened and protected species interactions with the production of a colour guide to assist with identification and recording of interactions, are also underway or have been fully implemented.

Table 1: Summary of the NSW Ocean Trap and Line Fishery

Area	Ocean waters from NSW coastal baselines seaward to the 4,000 metre isobath, subject to closures to certain methods at some or all times. [Note: waters extending beyond 3 nautical miles are managed in accordance with NSW legislation under an arrangement with the Commonwealth]
Gear	Fish trap (bottom/demersal) Spanner crab net Line methods (set lines/trotlines, driftline, handline, dropline, trolling, jigging and poling)
Management Controls	Predominantly managed by input controls
Fishing Units	385 fishing businesses as at March 2009 (compared with 478 businesses in July 2006)
Target Species (Primary species)	Primary species include: Australian Bonito Blue-eye trevalla Gummy shark Silver trevally Spanner crab Yellowtail kingfish Banded (Bar) rock cod Grey (Rubberlip) morwong Leatherjacket spp. Snapper Yellowfin bream
Catch	2006/07 – approx 1,914 tonnes
Stock Status (Primary species)	Recruitment overfished 0 Overfished 1 Growth Overfished 3 Fully Fished 4 Moderately Fished 1 Lightly Fished 0 Uncertain 0 Undefined 2
Value	2006/07 - approx $11.162 million (based on SFM prices)
Endangered / Threatened / Protected Species Interactions	Three separate interactions have been reported by endorsement holders in the OTLF since mandatory reporting requirements commenced in 2005 (refer to Table 9 of this submission).
Recreational Component	Most target species in the OTLF are prominent species in the recreational finfish harvest including snapper, yellowfin bream, yellowtail kingfish, and silver trevally.

2. Description of the fishery

For the purposes of this submission the OTLF comprises the Ocean Trap and Line Share Management Fishery as described in Schedule 1 of the *Fisheries Management Act 1994* (the FM Act) and Part 3 of the OTL SMP.

The following is a more detailed description of the OTLF.

Species

Primary, Key Secondary and Secondary Species:

A large number of fish and invertebrate species are taken in the OTLF. The *Fisheries Management (Ocean Trap and Line Share Management Plan) Regulation 2006* (the OTL SMP) details the primary and key secondary species (Table 2) in the OTLF which are those species that the fishery captures in large quantities or of high value on a consistent basis. Refer to Section 3.2.1 (Species allowed) (pp 13 – 15) of the OTL FMS and Chapter B 1.2.1 (Species taken in the fishery (pp 26 – 30) of the OTLF EIS.

Table 2: Primary and key secondary species taken by the OTLF

Common name	Scientific name	Designation
Australian Bonito	*Sarda australis*	Primary species
Banded (Bar) rock cod	*Epinephelus ergastularius*	Primary species
Blue-eye trevalla	*Hyperoglyphe antarctica*	Primary species
Grey (Rubberlip) morwong	*Nemadactylus douglasii*	Primary species
Gummy shark	*Mustelus antarcticus*	Primary species
Leatherjacket spp.	various (Family: MONACANTHIDAE)	Primary species
Silver trevally	*Pseudocaranx dentex*	Primary species
Snapper	*Pagrus auratus*	Primary species
Spanner crab	*Ranina ranina*	Primary species
Yellowfin bream	*Acanthopagrus australis*	Primary species
Yellowtail kingfish	*Seriola lalandi*	Primary species
Bass groper	*Polyprion americanus*	Key secondary species
Eastern blackspot pigfish	*Bodianus unimaculatus*	Key secondary species
Gemfish	*Rexea solandri*	Key secondary species
Hapuku	*Polyprion oxygeneios*	Key secondary species
Jackass morwong	*Nemadactylus macropterus*	Key secondary species
Mahi mahi (Dolphinfish)	*Coryphaena hippurus*	Key secondary species
Mulloway	*Argyrosomus japonicus*	Key secondary species
Pearl perch	*Glaucosoma scapulare*	Key secondary species
Shark (mixed species)	Various	Key secondary species
Spanish mackerel	*Scomberomorus commerson*	Key secondary species
Spotted mackerel	*Scomberomorus munroi*	Key secondary species
Silver sweep	*Scorpis lineolata*	Key secondary species
Teraglin	*Atractoscion aequidens*	Key secondary species
Wobbegong sharks	*Orectolobus ornatus* *Orectolobus maculates*	Key secondary species*

* Note that while wobbegong sharks were initially identified in the OTL FMS & OTL SMP as a key secondary species, a new trip limit of 6 carcasses per trip was introduced on 23 May 2008 to prevent targeting of that species but allowing the landing of incidental catches.

Chapter B 1.6.14 (Threatened and/or protected fish) (pp 57 - 59) of the OTLF EIS lists fish that are threatened and/or protected in NSW.

Management arrangements

The OTLF is managed under the FM Act and regulations made under this Act (refer to 'Governing legislation' below). NSW DPI is the State Government agency responsible for the administration of the FM Act. The OTLF is predominantly managed by input controls, however some output controls are also used, as follows:

Input controls

Limited entry:
The OTLF was recently converted to a category 1 share management fishery (refer to Section 2 of this submission). Implementation of share management arrangements commenced with provisional share allocation and the 'limited access stage', in December 2004 and March 2005 respectively. The final stage of share management commenced on 5 February 2007 with the adoption and implementation of a share management plan for the fishery.

Access to the OTLF is limited to shareholders in the fishery (and/or their nominated fishers) who hold shares above any minimum shareholding level established in the OTL SMP. The OTL SMP provides for an increase to the minimum shareholding requirement within 2½ years from the commencement date of 5 February 2007. This means that existing shareholders in each share class in the OTLF will need to meet the increased minimum shareholding for that share class in order to continue to be eligible for the endorsement. The minimum shareholding requirement will effectively reduce the number of available endorsements in each share class in the OTLF.

See Table 3 later in this submission for figures on the current number of fishing businesses per share class.

Controls on fishing gear and boats:
- Refer to 'Fishing methods / gear types' below.
- Refer to Chapter B1.3 (Methods of Harvest) (pp 33 – 36) of the OTLF EIS.
- Refer to Section 3.1.4 (Fishing gear used in the fishery) (pp 12 – 13) and 3.1.5 (Boats used in the fishery) (pg13) of the OTL FMS.
- Boat capacity restrictions are regulated in the OTL SMP. Under clause 10 of the OTL SMP, the maximum boat length in the OTLF is 16 metres. This does not apply to boats that exceed this length but were a component of any ocean trap and line fishing business immediately before the commencement of the OTL SMP. It effectively places a cap on the number of boats in the fishery that are above 16 metres in length.
- Pursuant to management response 2.3(a) of the OTL FMS, the following limits on gear used in the OTLF apply:
  - A maximum of 30 traps may be used at any one time (clause 7A(2) of the OTL SMP); and
  - A maximum use at any one time of 1200 hooks applies to any line fishing method outside 3 nautical miles (clause 7E of the OTL SMP).
- Pursuant to management response 2.3(b) of the OTL FMS, the use of automatic baiting machines is prohibited in the OTLF (clause 11 of the OTL SMP).
- Pursuant to management response 3.1(c) of the OTL FMS, a number of gear restrictions apply in or near critical habitat of grey nurse sharks (Part 5A of the OTL SMP).

Time and area closures:
- Schedule 2 of the OTL SMP describes restrictions on areas of operation in the OTLF.

- Schedule 3 of the *Fisheries Management (Supporting Plan) Regulation 2006* outlines waters closed permanently to all commercial fishing or class of commercial fishing.
- Refer to Appendix 1 of this submission 'Closures authorised under Section 8 and Section 11 of the FM Act relevant to the OTLF'.
- Refer to Chapters B1.4.3 (Closed areas) (pp 39 – 43) and B1.6.8 (Time and area closures) (pp 51 – 52) of the OTLF EIS, and Section 4.8 (Time and area closures) (pg 26) of the OTL FMS.

Output controls

Size Limits:
Refer to Chapter B1.6.13 (Size limits) (pg 57) of the OTLF EIS, and Section 3.2.3 (Size Limits) (pg 15) of the OTL FMS.

New minimum legal lengths and increases to existing minimum legal lengths applying to a range of species were implemented from 3 September 2007, including the following species relevant to the OTLF: grey (rubberlip) morwong, jackass morwong, silver trevally and yellowtail kingfish. Clause 9 of the *Fisheries Management (General) Regulation 2002* lists the minimum legal lengths that apply to species permitted to be taken in the OTLF.

Commercial catch limits:
A commercial daily catch limit applies to a range of species taken from NSW waters as part of the OTLF. These daily catch limits are intended to reduce incidences of misreporting in respect of the quota system administered by the Commonwealth Government that directly limits the harvest levels of these species by Commonwealth endorsed boats. Refer to B1.6.10 (Catch limits) (pp 52 – 54) of the OTLF EIS and Section 4.10 (Catch limits or quotas) (pg 27) of the OTL FMS. Commercial catch limits are implemented via fishing closures under section 8 of the FM Act (refer to Appendix 1) and in Schedule 3 of the OTL SMP. Details of up-to-date commercial catch limits (implemented via fishing closures) applying to the OTLF can be found on the NSW DPI website at: www.dpi.nsw.gov.au/fisheries/closures/commercial/otl

Other licensing arrangements:
Refer to Section 4 (Management Controls and Administration) (pp 21 – 27) and Section 9 (Goals, Objectives and Management Responses) (pp 41 – 69) of the OTL FMS.

Recent changes made to the licensing and management arrangements are outlined in Section 3 of this submission including implementation of a range of management actions required under the OTL FMS.

Fishing methods / gear types

For a full description of fishing methods and gear types refer to:
- Chapter B1.3 (Methods of Harvest) (pp 33 – 36) of the OTLF EIS,
- Section 3.1.4 (Fishing gear used in the fishery) (pp 12 – 13) and 3.1.5 (Boats used in the fishery) (pg13) of the OTL FMS, and
- Part 4A (Fishing gear) of the OTL SMP prescribes current limits and/or restrictions on gear use in the OTLF.

Fishing area

- Refer to Chapter B1.4 (Area of operation) (pp 37 - 43) of the OTLF EIS and section 3.1.2 (Area of operation) (pp 9 - 11) of the OTL FMS.
- Schedule 2 of the OTL SMP prescribes restrictions on areas of operation in the OTLF, noting that additional time and area closures may exist (see Appendix 1).

- The *Fisheries Management (Supporting Plan) Regulation 2006* outlines waters closed permanently to all commercial fishing or class of commercial fishing.
- Appendix 1 of this submission lists those closures authorised under section 8 and section 11 of the FM Act that are specific to the OTLF. Further details of fishing closures can be found on the NSW DPI website at: www.dpi.nsw.gov.au/fisheries/closures/commercial
- Zoning and operational plans for a further two marine parks have been implemented in NSW waters since the OTLF was initially assessed in 2006, Port Stephens-Great Lakes Marine Park and the Batemans Marine Park. Commercial fishing restrictions apply within the marine parks. Further details regarding zoning plans and commercial fishing restrictions in these marine parks can be found on the Marine Parks Authority website at: www.mpa.nsw.gov.au
- In December 2002 ten grey nurse shark critical habitat areas were declared (refer to Chapter B1.4.3.4 (Critical habitats) (pp 42 – 43) of the OTLF EIS). Special fishing and diving rules apply in critical habitats (refer to Part 11A Division 1 of the *Fisheries Management (General) Regulation 2002* and Part 5A of the OTL SMP). Many critical habitat sites have also been protected in marine parks and aquatic reserves, resulting in changes to fishing and diving rules. Additional closures have been implemented in respect of the OTLF for grey nurse shark. Further details can be found on the NSW DPI website at: www.dpi.nsw.gov.au/fisheries/closures/commercial/otl

Number of fishers

As at March 2009 there are 385 fishing businesses in the OTLF, with 328 fishing businesses endorsed to operate in the OTLF. This compares with 501 fishing businesses at August 2005 and 478 fishing businesses at July 2006 when the OTLF EIS and OTL FMS were prepared, respectively. The reduction in fishing business numbers in the OTLF can be partly attributed to marine park buy-out processes and the requirement for increased minimum shareholdings under the OTL SMP. Clause 6 of the OTL SMP provides for an increase to the minimum shareholding requirement within 2½ years from the commencement of the Plan on 5 February 2007 (ie. on 5 August 2009). This means that existing shareholders in each share class in the OTLF will need to hold 40 shares in that share class in order to continue to be eligible for the endorsement. Accordingly, the minimum shareholding requirement will further reduce the number of available endorsements in each share class in the OTLF over the coming 6 months.

Table 3 shows the number of fishing businesses in each share class in the OTLF that currently hold less than 40 shares, and, based on the new minimum shareholding requirement and total number of shares in each share class, the maximum number of available endorsements in each share class from 5 August 2009. It should be noted that it is unlikely the maximum number in the third column of Table 3 would ever be realised as some businesses will continue to hold shares in excess of the minimum shareholding level and other businesses may choose to hold on to their shares even if they are below the minimum shareholding and are not actively fishing them. As such, the last column of Table 3 shows the potential number of fishing businesses in each share class in the OTLF based on the new minimum shareholding requirement, if no further share trading occurs.

Access to the fishery is limited to shareholders in the fishery and/or their nominated fisher who hold a fishing licence with the appropriate endorsements. There are 6 types of endorsement available in the fishery, as follows:

Line fishing western zone endorsement

A line fishing western zone endorsement authorises the holder to use a handline, rod (or pole) and line, set line or drift line to take fish from ocean waters that are west of the 183 metre (100 fathoms) depth contour.

Line fishing eastern zone endorsement

A line fishing eastern zone endorsement authorises the holder to use a handline, rod (or pole) and line, set line or drift line to take fish from ocean waters that are east of the 183 metre (100 fathoms) depth contour.

Demersal fish trap endorsement

A demersal fish trap endorsement authorises the holder to take fish from ocean waters by means of a fish trap set or used on the sea bed.

School and gummy shark endorsement

A school and gummy shark endorsement authorises the holder to take school and gummy sharks using a set line from ocean waters south of a line drawn due east from the northern point of the entrance to Moruya River.

Spanner crab northern zone endorsement

A spanner crab northern zone endorsement authorises the holder to use a spanner crab net to take spanner crabs from ocean waters that are north of a line drawn due east from the southern breakwall at Yamba.

Spanner crab southern zone endorsement

A spanner crab southern zone endorsement authorises the holder to use a spanner crab net to take spanner crabs from ocean waters that are south of a line drawn due east from the southern breakwall at Yamba and north of Korogoro Point (Hat Head).

The number of fishing businesses in each sector of the OTLF is shown in Table 3.

Table 3: **Current number of fishing businesses (FBs) and endorsements in each sector of the OTLF at March 2009.**

Share class	No. of FBs	No. of FBs with <40 shares	Maximum No. of available endorsements if trading occurs (as at 5 August 2009[#])	No. of available endorsements if no trading occurs (as at 5 August 2009[#])
Line fishing western zone	364	84	337	284
Line fishing eastern zone	84	10	80	74
Demersal fish trap	222	48	204	174
School and gummy shark	21	5	19	16
Spanner crab northern zone	41	22	41	19
Spanner crab southern zone	9	1	8	8

[#]Commencement of minimum shareholding requirement under the OTL SMP.
Note: A fishing business may hold shares in multiple sectors of the OTLF

Allocation between sectors

- See Section 8 (Interactions with other fisheries) (pp 36 – 40) of the OTL FMS and Chapter B1.7 (Interactions with other fisheries) (pp 69 – 72) of the OTLF EIS
- See Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp. for landings of OTLF primary and key secondary species by other NSW commercial fisheries.

- Estimated catches from the National Recreational and Indigenous Fishing Survey[2] for OTLF primary and key secondary species are also provided in Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp.

Governing legislation

The FM Act seeks to achieve ecologically sustainable development for the fisheries of NSW through the achievement of its stated objectives, which are:

(1) To conserve, develop and share the fishery resources of the State for the benefit of present and future generations.

(2) In particular the objects of the Act include:

a. to conserve fish stocks and key fish habitats, and
b. to conserve threatened species, populations and ecological communities of fish and marine vegetation, and
c. to promote ecological sustainable development, including the conservation of biological diversity,

and, consistently with those objects

d. to promote viable commercial fishing and aquaculture industries,
e. to promote quality recreational fishing opportunities, and
f. to appropriately share fisheries resources between the users of those resources, and
g. *to provide social and economic benefits for the wider community of New South Wales.*

Other relevant legal instruments include:

- *Fisheries Management (General) Regulation 2002*
- *Fisheries Management (Supporting Plan) Regulation 2006*
- *Fisheries Management (Ocean Trap and Line Share Management Plan) 2006.*

Status of export approval under the EPBC Act

The OTLF was initially declared an approved Wildlife Trade Operation (WTO) on 27 July 2006 with an expiry of 14 December 2007. On 10 December 2007, the WTO was extended to 30 June 2008, at which time it was further extended to 27 July 2009.

3. Management

Changes to management arrangements

Management arrangements have considerably progressed since the OTLF was first assessed under the EPBC Act, with the finalisation of the OTL FMS and the commencement of category 1 share management arrangements.

Ocean Trap and Line Fishery Management Strategy
Refer to Appendix 2 of this submission for a progress statement on the implementation of management responses with an 'immediate' or 'short term' timeframe in the OTL FMS, up to March 2009.

[2] Henry, G.W. and Lyle, J.M. (2003). The national recreational and indigenous fishing survey. Final report to the Fisheries Research and Development Corporation, Project 99/158. NSW Fisheries Final Report Series No. 40, 188pp.

Commencement of share management
This involved the implementation of the OTL SMP, a Supporting Plan encompassing rules that apply to multiple commercial fisheries, and a range of changes to the FM Act and the *Fisheries Management (General) Regulation 2002* to complement the introduction of share management. The OTL SMP and associated legislative amendments took effect on 5 February 2007 and were explained in a document previously sent to DEWHA titled '*Information Paper: New commercial fishery licensing and management arrangements commencing on 5 February 2007'*[3].

For relevant licensing arrangements, see Section 4 (Management Controls and Administration) (pp 21 – 27) of the OTL FMS noting that significant reforms to the commercial fisheries licensing arrangements occurred in February 2007 as described in the publicly available Information Paper[3] issued at that time.

Legislative reform in NSW commercial fisheries
Following the commencement of share management and the implementation of share management plans, the NSW Government has completed significant legislative reform and has implemented, via regulation, the following:

- incorporating the contents of a number of closures that previously existed within closure notifications made under section 8 of the FM Act into regulation,
- moving many of the specific fishery related provisions that previously sat within the *Fisheries Management (General) Regulation 2002* into the respective share management plans, and
- implementing, through regulation, many of the high priority management responses specified in various FMSs (including the OTL FMS).

Further details regarding the legislative reform process were explained in a document previously sent to DEWHA titled '*Information Paper: Changes to the Fisheries Management (General) Regulation 2002, Share Management Plans and Supporting Plan*'.

Performance of the fishery against objectives, performance indicators and trigger points

Refer to Appendix 3 of this submission for a statement of the performance of the OTLF against its performance indicators and trigger points contained in the OTL FMS based on data for the period 2007/08.

Compliance Risks

- See Chapter B1.6.17 (Compliance) (pp 64 – 66) of the OTLF EIS and Section 5 (Compliance) (pp 27 - 28) of the OTL FMS.
- Illegal harvesting and black marketing in NSW was assessed in 'Report on Illegal Fishing for Commercial Gain or Profit in NSW[4].
- Compliance services relating to the OTLF are provided to achieve a high level of compliance in the fishery. As part of the process of developing and implementing compliance operational plans relating to the OTLF, Annual District Compliance Plans are developed by identifying compliance issues at a fisheries district level (drawing from the FMS) and set out how the resources are allocated and used in a strategic manner, based on localised and state-wide fisheries compliance risks. High levels of compliance are

[3] Available at www.dpi.nsw.gov.au/__data/assets/pdf_file/0018/223092/information-paper.pdf

[4] Palmer, M. (2004) Report on Illegal Fishing for Commercial Gain or Profit in NSW. Available at www.fisheries.nsw.gov.au/__data/assets/pdf_file/0004/4819/Black-Market-Report.pdf

- As part of monitoring compliance, operational plans relating to fisheries in NSW and Annual District Compliance Planning models (including the overarching State-wide Compliance Plan) are currently under review and redevelopment. The aim of the review is to align the plans with the Australian National Fisheries Compliance Strategy (AFNCS) which seeks to provide guidance to all Australian fisheries jurisdictions in achieving the objectives of the National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.
- As part of this process of continuous improvement, NSW DPI (Fisheries Compliance Unit) is currently developing refined compliance risk identification and assessment processes based on standardised risk assessment methodologies to better plan objective compliance services. The model is adaptive, allowing changes at any time, such as acting quickly to combat emerging or opportunistic compliance issues in the short term as well as allowing for longer term strategic responses to issues such as organised criminal involvement in fisheries.
- This risk based approach to compliance has resulted in operational plans for the two large offshore patrol vessels (based at Batemans Bay and Coffs Harbour) that see the vessels used strategically up and down the coast to help optimise compliance in ocean fisheries.
- Rates of compliance in the OTLF since the fishery was first assessed are as follows:

  2006/07 89%
  2007/08 86%

  The rate of compliance is calculated using information from quality inspections reflected on the program activity reports (PARs) that are completed by NSW DPI Fisheries Officers when undertaking inspections of fishers and fishing gear in the OTLF.

Consultation processes

- Section 284 of the FM Act identifies the type of items for which NSW DPI is required to consult with the public and the public consultation procedure.
- Refer to Section 7 (Consultation) (pp 35 – 36) of the OTL FMS.

Cross jurisdictional management arrangements

NSW DPI continues to work with the Commonwealth and Queensland Department of Primary Industries and Fisheries (QDPI&F) to develop complementary arrangements for shared resources. For example:

- Commonwealth and QDPI&F scientific representatives attended the NSW DPI Resource Assessment Workshop held in April 2008, providing input on relevant shared fish stocks, including recent catch information, updates on existing research, research outcomes, stock assessment status, and changes to management arrangements for each relevant jurisdiction;
- NSW DPI provides data for assessments by Commonwealth Resource Assessment Groups for species which occur off NSW including jackass morwong, school whiting, john dory, ling, blue-eye and silver trevally and gemfish;
- NSW DPI representatives attend meetings (either as observers or State representatives) for the Commonwealth Small Pelagic Fishery, South East Trawl and Eastern Tuna and Billfish Management Advisory Committees;

- Senior fisheries staff from NSW DPI and QDPI&F met in Coffs Harbour on 1 – 2 March 2007 and in Brisbane on 16 May 2008 to discuss a range of cross-border management and research issues and continue to liaise on an informal basis in relation to contemporary management issues;
- NSW DPI has a representative on the Stakeholder Network Working Group set up to assist QDPI&F with its Rocky Reef Fin Fish Fishery review. A main consideration in this review was management of the snapper resource; and
- Researchers from NSW DPI and QDPI&F continue to work jointly on the Long Term Monitoring Program (LTMP), a fishery independent monitoring program for the east coast spanner crab fishery.

Compliance with TAPs, threatened species recovery plans, etc and also relevant domestic and international arrangements

None of direct influence in the OTLF.

4. Research and monitoring

Results of any research completed relevant to the fishery

Refer to Chapter B1.6.15 (Research) (pp 59 – 63) of the OTLF EIS and Section 6 (Research) (pp 28 - 29) of the OTL FMS.

Appendix 4 provides references to scientific outputs relevant to the OTLF. Scientific outputs and a list of current projects (and their summaries) undertaken by the NSW DPI Science and Research's, Fisheries and Aquatic Ecosystems Branch, can be found on the NSW DPI website www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries

A summary of key outcomes of completed research relevant to the OTLF (prepared since the OTLF EIS was published) is provided below.

- Stewart J and Hughes JM (2009) Biological and fishery characteristics of rubberlip morwong (*Nemadactylus douglasii*) (Hector, 1875) in New South Wales, Australia. Fisheries Research, 96: 267–274.

  This paper describes results from the first study to investigate the reproductive biology, age, growth and fishery for the commercially and recreationally important rubberlip morwong in New South Wales.

- Stewart J and Hughes J (2008) Determining appropriate sizes at harvest for species shared by the commercial trap and recreational fisheries in New South Wales. Final report to the Fisheries Research & Development Corporation for Project No. 2004/035. NSW Department of Primary Industries – Fisheries Final Report Series No. 97. 282pp. ISSN 1449-9967

  This report presents new information on the biology and fisheries for 13 coastal species that are important to both commercial and recreational fishers in NSW. The biological information for rubberlip morwong, blackspot pigfish, maori wrasse, red rockcod and pearl perch is the first available for these species, while the information for tarwhine is the first for the east coast of Australia. New analyses on existing information were also done for another 7 species (ocean leatherjackets, yellowfin bream, yellowtail kingfish, mulloway, snapper, sweep and silver trevally).

- Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp

The "Status of Fisheries Resources in NSW 2006/07" is a general overview of the state of fish populations status and a summary of the state of knowledge of all 92 key species harvested by the Estuary General, Estuary Prawn Trawl, Ocean Hauling, Ocean Trawl and Ocean Trap and Line Fisheries.

- Gale R, Silberschneider V and Stewart J (2007) A biological and economic assessment of the 2001 change in the Minimum Legal Length (MLL) of snapper in NSW. Report to the NSW Ocean Trap & Line Management Advisory Committee, December 2007. NSW Fisheries Final Report Series No. 17. 43 pp

  The results of the analyses indicate that the increase in MLL from 28 to 30 cm has been successful in achieving the original scientific expectations. The biological information indicates that the increase in MLL has contributed to increases in snapper catch per fisher and the available biomass of larger fish.

Monitoring programs

See Section 6.3 (Catch monitoring) (pp 34 – 35) of the OTL FMS.

The NSW DPI fishery monitoring program includes stock assessment work on the key commercial species; use of scientific observers to record information on catches of target species and by-catch; collection of catch and effort data; and port monitoring of landed fish products (e.g. collecting data on fish length and age).

Scientific observer program
The FMSs for all the major commercial fisheries (excluding lobster and abalone) require the implementation of a cross-fishery scientific observer program. The program has been implemented based on a framework that identifies the highest priority fishing methods for observation based on a number of measures and to ensure that resources are directed towards the methods that pose the greatest risks[5]. Ocean line fishing methods have been identified as the current highest priority and a three year scientific observer program, '*Observer-based survey of retained and discarded catches from commercial line fishing in coastal waters of New South Wales*', commenced on 1 September 2007.

In addition NSW DPI and the Northern Rivers Catchment Management Authority (NRCMA) have collaborated to fund an observer-based survey of commercial shark fishing in coastal waters of northern NSW. The field sampling phase of the research project '*Observer-based survey of commercial shark fishing in coastal waters of northern New South Wales*' commenced on 1 September 2008 and a final report analysing the data from the survey is expected to be completed between June-Aug 2009 dependent upon when the field work component of the project ceases.

- Commercial Line-fishing Observer Program
  The field sampling phase of the research project commenced on 1 September 2007 and is due to be completed on 31 August 2009. Sampling trips are observing the four main line fishing methods used in NSW, handlining, setlining, trotlining, and droplining. This sampling is being done according to a specific temporal and spatial sampling design partially weighted to account for regional, seasonal and methodological variability in fishing effort. Table 4 provides a brief summary of the number of observer trips successfully completed compared to scheduled observer trips (in brackets) for each of the three regional categories during each of the six seasons sampled to March 2009.

[5] Scandol, J. 2005. A prioritisation model for the NSW observer program. Cronulla NSW DPI.

Two more sampling seasons, Autumn and Winter 2009, are required to complete the field sampling phase of this research project. Information regarding species composition of catches, including any record of interactions with protected or threatened species, will be available upon publication of the final report scheduled to be completed in December 2009. The type of data being collected in the survey includes: species composition of retained and discarded catches, level of discarding, interactions with threatened and protected species, and interactions with habitat types.

Table 4: Number of observer trips completed compared to scheduled observer trips ( )

Region of NSW	Sampling season						
	Spr 07	Sum 08	Aut 08	Win 08	Spr 08	Sum 09	*Total*
North - Tweed Heads to 31°S latitude	15 (16)	15 (16)	16 (16)	16 (16)	16 (16)	16 (16)	***94 (96)***
Central - 31 to 34°S latitude	12 (12)	10 (12)	16 (16)	12 (12)	10 (12)	12 (12)	***72 (76)***
South - 34°S latitude to the NSW/Victoria border	11 (12)	8 (12)	12 (12)	5 (12)	4 (12)	8 (12)	***48 (72)***
Total	***38 (40)***	***33 (40)***	***44 (44)***	***33 (40)***	***30 (40)***	***36 (40)***	***214 (244)***

- Commercial Shark-fishing Observer Program
  The research project '*Observer-based survey of commercial shark fishing in coastal waters of northern New South Wales*' provides for an intensive program of observer sampling onboard commercial line fishing trips specifically targeting large sharks (generally whaler, hammerhead, sandbar and mako sharks) in NSW waters north of Crowdy Head (i.e. north of approximately 32°S latitude).

  The dedicated shark-fishing observer trips done as part of this project are in addition to any 'randomly-selected' shark-fishing observer trips undertaken as part of the 'Commercial Line-fishing Observer Program' outlined above, and are done on an opportunistic basis. That is, NSW DPI observers are aiming to observe as many shark-fishing trips as possible given the human and financial resources available, or until the 2008/09 total quota for large sharks has been caught.

  As of 12 March 2009, a total of 24 extra observer days had been successfully completed as part of this project. It is anticipated that at least a further 50 commercial shark-fishing observer days may be completed by June 2009. All information regarding species composition of catches from the Commercial Shark-fishing Observer Program, including any record of interactions with protected or threatened species, will be available upon completion of the final report.

Collection of catch and effort data
See Section 6 (Catch monitoring) (pp 34 – 35) of the OTL FMS.

A major project is being progressed to develop a new catch information management system and related processes which would, among other things:

- introduce and cater for finer scale spatial and temporal reporting;
- improve NSW DPI'S ability to interrogate, analyse and report on high quality data; and
- improve the NSW DPI's ability to plan research, compliance and management activities (including enhancing cross-jurisdictional cooperation).

As part of this project, an extensive review and analysis was done to identify national standards and best practice for commercial fishing catch and effort information and Departmental and other stakeholder requirements.

The public consultation document '*Catch Records Reform Project: Business Requirements Specification Revised Reporting Arrangements*', previously referred to DEWHA (in May 2008) provides the background and proposed new catch reporting arrangements for NSW.
New catch and effort reporting arrangements are due to commence in July 2009. The following link provides details of the new arrangements and samples of the new forms and other documents: www.dpi.nsw.gov.au/fisheries/commercial/catch-effort

Port monitoring
Port monitoring involves the collection of length (and age samples where relevant) of a set of commercially targeted species. The species are determined based upon risks assessments (as part of the EIS) and socio-economic values[6]. For the 2006/07 period the following species were subject of the port monitoring project: mulloway, teraglin, yellowtail kingfish, snapper, eastern sea garfish, pilchards, silver trevally, smooth and Balmain bugs, yellowtail scad, blue spotted flathead, gemfish, Australian salmon, bonito, grey (rubberlip) morwong, blue mackerel, sea mullet, eastern king prawns, pipis, pink tilefish, ocean perch, blue striped goatfish, mud crabs and blue swimmer crabs. This list is reviewed at the end of each fiscal year.

5. Catch data

Total catch and value of the OTLF

Table 5: Weight (tonnes) of reported landings for the OTLF

Year	Line Sector	Trap Sector (incl. spanner crab net)	Grand Total
2002/03	890	745	1635
2003/04	746	800	1547
2004/05	741	787	1527
2005/06	847	799	1646
2006/07	1072	842	1914

[#] Reported gross landings as at 1 August 2008 and rounded. Data is subject to ongoing validation.

Table 6: Estimated value ($) or reported landings in the OTLF

Year	Line Sector	Trap Sector (incl. spanner crab net)	Grand Total
2002/03	$5,259,000	$4,827,000	$10,086,000
2003/04	$4,164,000	$4,653,000	$8,817,000
2004/05	$4,361,000	$4,229,000	$8,590,000
2005/06	$4,787,000	$4,705,000	$9,492,000
2006/07	$6,023,000	$5,139,000	$11,162,000

[##] Estimated value based on SFM monthly prices.

Total catch of primary and key secondary species taken in the OTLF

- Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp.

[6] Resource Assessment and Monitoring of Commercially Harvested Species (FSC2003/123)

Total catch of primary and key secondary species taken in other NSW fisheries

- Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp.

Harvest by each sector (commercial, recreational, Indigenous and illegal)

- No estimate available for the Indigenous sector. Refer to Chapter B1.7.3 (Indigenous fishing) (pg 70) and B5.3 (Indigenous peoples) (pp 186 – 188) of the OTLF EIS.
- No estimate available for illegal catch.

Fishing effort data

- Scandol, J., Rowling, K. and Graham, K., Eds (2008) Status of Fisheries Resources in NSW 2006/07, NSW Department of Primary Industries, Cronulla, 334 pp.

6. Status of target stock

NSW DPI has developed and implemented a Resource Assessment Framework for the assessment of marine fish species harvested in NSW[7]. The framework is a well-defined, accessible program for the resource assessment of marine fish species harvested in NSW. The type of assessment carried out for each species (or species complex) is categorised into five classes of resource assessment (Table 7) and takes into account commitments made in the relevant FMS, levels of risk identified in the environmental impact statements, the commercial and recreational importance of the species, and the species biology.

Table 7: Summary of attributes of the various resource assessment classes for species (or species complex) harvested in NSW

Attribute	Resource Assessment Class				
	One	Two	Three	Four	Five
Biomass estimate	•				
Estimate of fishing mortality	•				
Quantitative risk analysis of future harvesting	•				
Standard fisheries biological reference points	•				
Credible indicator of abundance	•	•			
Representative time-series of commercial catch	•	•	•	•	
Age structured data (where possible)	•	•			
Local information for growth, mortality, selectivity and maturity	•	•	•		
Length-structured data	•	•	•		
Non-local information for growth, mortality, selectivity and maturity			•	•	•
Externally reviewed or publishable	•	•	•	•	•

The framework also incorporates a standardised method of reporting on the exploitation status of fish stocks across all commercial fisheries including an annual review and interpretation of available data by fisheries scientists. Catch from all sectors (including

[7] Scandol, J.P. 2004. A Framework for the Assessment of Harvested Fish Resources in NSW. NSW Department of Primary Industries – Fisheries Resource Assessment Series No. 15, ISSN 1449- 9940.

estimates from recreational and, where available, Indigenous and illegal sectors) are taken into consideration when determining the status of a species.

The resource assessment class and exploitation status for each target and byproduct species in the OTLF for 2006/07 is shown in Table 8 below.

Table 8: Status of Primary and Key Secondary Species in the OTLF for 2006/07

Species	Resource Assessment Class		Exploitation Status
	Target	Current	
Primary species			
Australian Bonito	2	4	Undefined
Banded (Bar) rock cod	3	4	Undefined
Blue-eye trevalla	2	3	Moderately fished
Grey (Rubberlip) morwong	2	3	Overfished
Gummy shark	3	4	Fully fished
Leatherjacket spp.	2	3	Fully fished
Silver trevally	2	3	Growth overfished
Snapper	2	3	Growth overfished
Spanner crab	2	2	Fully fished
Yellowfin bream	2	3	Fully fished
Yellowtail kingfish	2	3	Growth overfished
Key secondary species			
Bass groper	3	4	Undefined
Eastern blackspot pigfish	3	3	Fully fished
Gemfish	1	1	Recruitment overfished
Hapuku	3	4	Undefined
Jackass morwong	3	4	Fully fished
Mahi mahi (Dolphinfish)	3	4	Undefined
Mulloway	2	2	Overfished
Pearl perch	3	3	Uncertain
Shark (mixed species)	3	4	Undefined
Spanish mackerel	3	4	Fully fished
Spotted mackerel	3	4	Fully fished
Silver sweep	2	3	Fully fished
Teraglin	2	3	Undefined
Wobbegong sharks	3	3	Undefined

(Source: NSW DPI Resource Assessment System)

Gemfish and school shark have recently been listed as ‘conservation dependent’ under the Commonwealth EPBC Act. In addition to management actions currently being progressed and/or implemented for these species (refer to Appendix 2 (management responses 2.1(h) and 2.2(a)), NSW DPI will liaise with the Australian Fisheries Management Authority regarding the implementation of the Commonwealth's rebuilding strategy for both gemfish

and school shark and, where necessary, develop and implement complementary management arrangements.

7. Interaction with threatened or protected species

Frequency and nature of interactions

Chapter B2.5 (Risk Analysis of Threatened and Protected Species) (pp 160 - 172) of the OTLF EIS identifies threatened and protected species (under the FM Act, *Threatened Species Conservation Act 1995* and the Commonwealth EPBC Act 1999) that may interact with the OTLF, and, potential direct and indirect impacts. The OTLF EIS found that of the 18 threatened species of fish where interactions were possible, 15 were at low or low-moderate risk from the operation of the fishery at the time. The remaining three species, grey nurse shark, black cod and great white shark were at high, moderately-high and moderate risk respectively. The risk of the OTLF to threatened and protected species of birds, marine mammals and reptiles was assessed as moderately low.

Management actions taken to educate fishers, improve knowledge of interactions and reduce the risk of interactions

The OTLF EIS recommended ongoing monitoring of interaction between the OTLF and threatened species. In this context, NSW DPI has implemented:

- mandatory reporting of threatened species interactions for all commercial fisheries from 2005, including distribution of a waterproof threatened and protected species identification brochure, and
- scientific observer work (refer to Monitoring programs above).

The mandatory reporting program has yielded three separate reports of interactions by endorsement holders in the OTLF pursuant to the reporting requirements (refer to Table 9).

Table 9: Threatened / Protected Species Interactions as Reported by Commercial Fishers in the OTLF on Mandatory Reporting Forms

Species	Date	Name of Location	Weight (kgs)	Length (cm)	Type of Interaction	Reported Comment
Grey nurse shark	9 August 2005	Fish Rock	?	8 ft (approx)	Sighting	Observed jumping out of water at Fish Rock twice in morning
Turtle (Loggerhead?)	14 October 2006	Cape Hawke	?	80 cm	Caught, released alive but distressed /injured	Turtle found tangled in recreational pot, rope tangled with tree branch which was tangled around trap rope. Turtle pulled aboard, rope cut free from neck and front right flipper then released. Seemed tired but OK.
Great white shark	10 October 2008	Grants Head	40kg (estimated)	120 cm	Caught, released alive and healthy	Female, juvenile

Other management actions taken to reduce interactions between the fishery and threatened and/or protected species, particularly those indentified at moderate to high risk from the operation of the OTLF, include:

- A maximum limit of 30 traps may be used at any one time,

- A maximum use at any one time of 1200 hooks applies to any line fishing method outside 3 nautical miles,
- A number of gear restrictions that apply in or near critical habitat of grey nurse sharks,
- Mandatory use of circle hooks on all set lines,
- Prohibition on the use of bottom set lines with wire trace line in waters within 3 nautical miles of NSW coastal baselines, and
- Implementation of a range of new targeted fishery closures for grey nurse sharks.

Results for the current research projects, '*Observer-based survey of retained and discarded catches from commercial line fishing in coastal waters of New South Wales*' and *Observer-based survey of commercial shark fishing in coastal waters of northern New South Wales*' will provide robust information on the frequency and nature of interactions with threatened or protected species.

8. Impacts of the fishery on the ecosystem in which it operates

Results of any Ecological Risk Assessments

Refer to Chapter B2.2 (Risk Analysis of the Current Operation of the Fishery – Broad Ecosystem) (pp 87 – 99) and Chapter B2.3 (Risk Analysis of Ecological Processes, Biodiversity, and Species Assemblages) (pp 100 – 108) of the OTLF EIS.

Nature of the impacts on the ecosystem including impacts on any key conservation values

Chapter B2.2 (Risk Analysis of the Current Operation of the Fishery – Broad Ecosystem) (pp 87 – 99) and Chapter B2.3 (Risk Analysis of Ecological Processes, Biodiversity, and Species Assemblages) (pp 100 – 108) of the OTLF EIS identify the potential impacts of the OTLF on marine habitats; protected species; threatened species, populations or ecological communities; bycatch; target species; ecological processes; biodiversity; and species assemblages. Refer to Tables B2.7 (pg 89), and B2.11 (pg 103) for summaries of potential impacts from the OTLF.

Management actions taken to reduce the impacts

Goal 1 of the OTL FMS provides for management of the OTLF in a manner that promotes the conservation of biological diversity in the marine environment. A number of management actions have been included in the OTL FMS to achieve this goal and address the impact of the OTLF on species assemblages, species diversity, ecological processes and marine habitats. These include, but are not limited to, programs to define and map trap and line fishing grounds in NSW, collect information on the number of fish traps lost during fishing operations, implementation of targeted fishery closures for grey nurse sharks, implementation of fish escape panels in fish traps, implementation of gear restrictions that apply in or near critical habitat of grey nurse sharks, implementation of the mandatory use of circle hooks on all set lines, and prohibiting the use of bottom set lines with wire trace line in waters within 3 nautical miles of NSW coastal baselines.

Refer to Section 9 (Goals, Objectives and Management Responses) (pp 41 – 69) of the OTL FMS. Implementation status of these management responses is included in Appendix 2 of this submission.

9. Consolidated detailed information outlining progress in implementing recommendation and conditions

Refer to Appendix 5 of this submission.

Appendix 1: Closures authorised under Section 8 or Section 11 of the *Fisheries Management Act 1994* relevant to the OTLF

The table below outlines closures that affect the OTLF. Further details can be found on the NSW DPI website: www.dpi.nsw.gov.au/fisheries/closures

Closure Title	General Description
Prohibition on the taking of fish using abalone viscera as bait	Prohibit the taking of all species of fish using abalone viscera as bait or berley, by all persons and in all waters
Commercial catch limits for shark species harvested in the OTLF	Commercial catch limit and reporting requirements for a range of shark species
Commercial fishing catch limit for wobbegong sharks	Commercial catch limit and minimum size limit for three species of wobbegong sharks
Gemfish Closure	50kg whole weight daily catch limit
OTL Export Approval – North and South Solitary Islands, Fish Rock, Green Island and Magic Point	Prohibits the taking of all species of fish by all endorsement holders in the OTLF by methods described in waters described
Shark Fins	Prohibits finning of sharks at sea
Trip Limits for the Southern Trawl Restricted Fishery, the Ocean Trawl Fishery and the Ocean Trap and Line Fishery	Commercial catch limits for a range of species
Bouddi National Park	Closed to all methods

Appendix 2: Report on the Implementation of (Immediate and Short Term) Management Responses within the OTL FMS

MANAGEMENT RESPONSE	STATUS
1.1(b) Collect information on the number of traps in the fishery lost during fishing operations and implement appropriate management actions if necessary.	The Ocean Trap and Line Monthly Catch Record includes a provision for fishers to report number of traps recovered and number of traps lost. This facility will also be part of the new catch reporting system scheduled to be implemented in July 2009.
1.1(c) Use fishing closures to control fishing activities within the OTLF	Refer to Appendix 1 of this submission.
1.2(a) Design and implement an industry funded scientific observer program to document the degree of interaction of commercial designated fisheries, including the OTLF, with non-retained and threatened species.	In progress. See 'Monitoring Programs' section earlier in this submission.
1.2(b) Implement fish escape panels in fish traps, initially compromising 50 x 75mm mesh, that minimise bycatch and the retention of juvenile and small fish.	Implemented. Refer to clause 7A of the OTL SMP.
1.2(c) Use best-practice handling techniques, including the prohibition on the use of fish spikes, clubs or any other such implement that could unduly harm non-retained organisms.	Implemented. Refer to clause 7G of the OTL SMP.
1.2(f) Implement, so as to reduce gut hooking of prohibited size and other non-retained fish, the exclusive use of: i) circle hooks (offset and non-offset) for all unattended line fishing methods in waters of a depth of 92 metres (50 fathoms) or greater; and ii) non-offset circle hooks for all unattended line fishing methods in waters of a depth less then 92 metres (50 fathoms).	Implemented. Refer to clause 7C of the OTL SMP.
1.2(g) Identify, in consultation with local fishers, the areas and/or times where undersized snapper consistently congregate, and close those areas to fish trapping.	Commenced consultation with OTL fishers in the north and south of the State. Further consultation with fishers in the central region required to progress this action which will be undertaken as part of the development of a recovery program for snapper (refer to management response 2.2(a) below).

MANAGEMENT RESPONSE	STATUS
2.1(a) Monitor the quantity, length and/or age and sex composition of the primary and key secondary species taken by commercial designated fishing activities, including the OTLF, as part of the overall resource assessment system.	This is being implemented as part of the resource assessment process (port monitoring). Port monitoring involves the collection of length (and age samples where relevant) of a set of commercially targeted species. The species are determined based upon risks assessments (as part of the EIS) and socio-economic values. The set of species subject to port monitoring is reviewed at the end of each fiscal year period. The scientific observer program will, subject to the priority setting framework, also assist in the ongoing implementation of this action.
2.1(b) Using the approved resource assessment framework, conduct resource assessments of the primary and key secondary species taken by commercial designated fishing activities, including OTLF, where necessary, and review the assessments at least every three years thereafter with an external review of the assessment framework at least every four years.	Resource assessments undertaken annually.
2.1(c) Monitor the commercial landings of all secondary species (other than the key secondary species) taken in the fishery annually for comparison against an historical range for each of those species or groups of species, as part of the overall resource assessment system.	These species and landings are being monitored as part of the annual resource assessment and FMS performance monitoring processes.

MANAGEMENT RESPONSE	STATUS
2.1(f) Implement changes to reduce the risk of the OTLF to wobbegong sharks, including: i) a trip limit (applying to a minimum 24 hour period) of 12 wobbegong shark carcasses ii) a minimum legal length for wobbegong sharks of 130cm total length, subject to scientific peer review of relevant research and the potential efficacy of a size limit by NSW DPI.	A fishing closure under section 8 of the FM Act (refer to Appendix 1 of this submission) was introduced on 23 May 2008 prescribing a trip limit of 6 wobbegong carcasses (within a period of 24 hour consecutive hours) and minimum size limits for three species of wobbegong sharks.
2.1(g) Review the economic impacts of increasing the size limit for snapper to 32cm and implement the outcomes of the review.	A biological and economic assessment of the increase in the minimum legal length (MLL) of snapper from 28cm to 30cm is complete[8]. The outcomes of this assessment have been presented to all NSW commercial fisheries Management Advisory Committees and to peak advisory bodies – the Seafood Industry Advisory Council (SIAC) and Advisory Council of Recreational Fishing (ACoRF) – for their consideration. This report recommends a further increase to the minimum legal length of snapper by 2cm to 32cm. Implementation of the outcomes of the assessment will be considered as part of the development of a recovery program for snapper (refer to 2.2(a) below).
2.1(h) Cap the NSW catch of school and gummy sharks and participate in the development of a multi-jurisdictional quota scheme with the Commonwealth and southern States.	The OTL FMS identified the need to cap NSW catch of school and gummy shark to prevent it from increasing from historical levels. There is currently no catch cap on the NSW catch of these species. However, NSW DPI has implemented the following measures related to gear restrictions and selectivity, and area closures that will, in effect, prevent increases in the NSW catch of school and gummy shark: • gear restrictions included in management response 2.3(a) – hook limits, prohibition on automatic baiting machines, etc.), • the mandatory use of circle hooks on all unattended lines (refer to management response 1.2(f)), • the prohibition on the use of wire traces on bottom setlines used in waters within 3nm of the coastline (refer to management response 3.1(c)), • the introduction of the Batemans Marine Park which restricts set lining activity to general use zones only (approximately 37% of the marine

[8] Gale, R., Silberschneider, V. and Stewart, J. (2007) A biological and economic assessment of the 2001 change in the Minimum Legal Length (MLL) of snapper in NSW. NSW DPI Fisheries Research Report Series ISSN 1449 – 9959. 43pp.

MANAGEMENT RESPONSE	STATUS
	park) with no more than 6 hooks per line, and • a minimum legal size limit of 91cm applies to school shark in NSW. In addition, NSW DPI has implemented arrangements to improve commercial catch and effort information for school and gummy sharks thereby improving the basis for management decisions. As part of the new arrangements for the commercial harvest of sharks in the OTLF that came into effect on 1 September 2008, sharks and rays taken in the OTLF are required to be identified and recorded to the species, or in some cases genus, level. A new logbook for reporting catches of sharks was developed and a comprehensive shark and ray identification guide was produced to assist in correctly identifying and subsequently reporting shark species. School and gummy shark were included in these reporting arrangements. The reporting arrangements will continue with the commencement of the new catch reporting system (refer to Monitoring programs of this submission) in July 2009. School shark has recently been listed as 'conservation dependent' under the Commonwealth EPBC Act. NSW catch of school shark is comparatively small in comparison to other jurisdictions, for example, in 2007/08 the NSW catch equated to approximately 2.5% of the Commonwealth Southern and Eastern Scalefish and Shark Fishery (SESSF) incidental quota of 240 tonnes. In addition to management actions currently being progressed and/or implemented for school sharks, referred to above, NSW DPI will liaise with the Australian Fisheries Management Authority regarding the implementation of the Commonwealth's rebuilding strategy for school shark and, where necessary, develop and implement complementary management arrangements.
2.1(i) Modify the gear controls applicable to the spanner crab fishery (outlined in Appendix 3 of the OTL FMS).	Implemented. Refer to clause 7B of the OTL SMP.

MANAGEMENT RESPONSE	STATUS
2.1(j) Utilise onboard observers to collect additional biological information, including size at maturity and fecundity/brood size data, for the important elasmobranch species taken by the fishery.	Refer to management response 1.2(a) above.
2.1(m) Implement additional controls for shark species harvested in the OTLF, including: i) a combined total catch limit of one tonne of specified sharks over any 24 hour period, irrespective of the number of fishing trips undertaken ii) a combined total catch limit of two tonnes of specified sharks for any single fishing trip that exceeds 48 hours in duration iii) examination of the option of basing the above trip limits on the number of shark carcasses (rather than total weight) able to be landed iv) ongoing review of shark catches and development of future gear or catch controls to ensure the long term sustainability of shark populations.	i) and ii) implemented in September 2006 via a fishing closure under section 8 of the FM Act. Since then, new management arrangements for the commercial harvest of sharks[9] in the OTLF were introduced 1 September 2008. They include daily catch reporting, annual catch caps (of 60 tonnes up to 30 June 2009) based on historical harvest levels, a weekly trip limit and by-catch limits. The arrangements apply to a defined group of large shark species (including all whaler, blue, hammerhead, mako and tiger sharks). Separate arrangements apply for the taking of sandbar sharks (*Carcharhinus plumbeus*). Seven (7) fishers who caught sandbar sharks between July 2005 and July 2007 were given a permit authorising them to take sandbar sharks instead of taking other large sharks. A combined total catch limit of 100 tonnes (including a 2 tonne weekly trip limit) of sandbar sharks has been divided equally among these fishers and applies up to 30 June 2009 and includes a weekly trip limit of 2 tonnes. The permit has been issued as part of a scientific observer based research project to collect important biological, catch and effort information on the sandbar shark fishery. This allows ongoing monitoring of the status of shark stocks.

[9] http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/152394/Ocean-Trap-Shark-species.pdf

MANAGEMENT RESPONSE	STATUS
2.2(a) Where the OTLF is a major harvester of a species determined as overfished in NSW, develop and implement a recovery program for that species, in particular develop and implement a recovery program for gemfish (recruitment overfished).	To ensure an efficient and effective response to species needing recovery programs, NSW DPI is in the final stages of designing a consolidated approach to developing five new recovery programs for the current species of concern (mulloway, silver trevally, grey morwong, gemfish & snapper) and reviewing the existing program in place for eastern sea garfish. A consolidated approach: (i) takes account of the complexity of interaction between various fisheries, allowing for consistent decision making and consideration of management options which benefit multiple species and takes account of the cumulative social and economic impacts of and necessary changes; and (ii) reduces the administrative burden of developing six independent recovery programs (incl. the need to form and manage stakeholder committees, prepare options papers, briefings, etc). Note that deferment of formal recovery programs has not prevented the initiation of interim management action where necessary (eg. the new silver trevally size limit).
2.3(a) Implement the following limits on gear use in the fishery: i) a maximum number of 30 traps to be used by an endorsement holder at any one time, ii) maximum use at any one time of 10 set lines with 6 hooks each line inside 3nm (except when shark fishing south of Moruya when hooks of size 9/0 or greater are being used, iii) maximum use at any one time of 30 driftlines with 1 hook (or 1 gang of hooks comprising no more than 5 hooks) attached to each line, iv) a maximum use at any one time of 1200 hooks by an endorsement holder using any line fishing methods outside 3nm, and v) a maximum of 6 single or 3 double poles able to be used at any one time during poling operations.	Implemented. Refer to Part 4A of the OTL SMP. With respect to (v), under clause 12 of the OTL SMP, the endorsement holder may only be assisted by a maximum of three persons (who do not hold the same type of endorsement to take fish) essentially limiting the number of single and double poles able to be used at any one time.
2.3(b) Prohibit the use of on-board automatic baiting machines in the fishery.	Implemented. Refer to clause 11 of the OTL SMP.
3.1(a) Continue, in consultation with OTL MAC, the mandatory reporting arrangements enabling the collection of information on interactions with or sightings of threatened or protected marine species and interactions with other threatened or protected species.	Mandatory reporting of threatened or protected species interactions was implemented for the OTLF in 2005. Modifications to catch and effort returns complete. Threatened species reporting form and a colour guide has been produced to assist with the identification of threatened species.

MANAGEMENT RESPONSE	STATUS
3.1(c) Implement changes to reduce or prevent the impact of the OTLF on grey nurse sharks, including: i) the exclusive use of circle hooks for all unattended line fishing methods, in accordance with the requirement specified in management response 1.2(f) ii) prohibiting the use of wire traces on bottom setlines used in waters within 3nm of the coastline as well as within the defined buffer zones of all identified GNS critical habitat areas and key aggregation sites, iii) investigating the effectiveness of the use of circle hooks for all attended line fishing methods, and iv) working with OTL fishers to implement spatial and/or temporal closures in GNS critical habitat areas and key aggregation sites on a site-by-site basis to gear types that pose a high or medium direct risk to GNS, taking account of characteristics of each site and its relative importance to GNS.	Implemented. Refer to 7C, 7D and Part 5A of the OTL SMP and spatial fishery closures implemented under section 8 of the FM Act (refer to Appendix 1 of this submission). The investigation pursuant to (iii) is yet to commence, but is due to be considered by the OTL MAC shortly.
4.2(d) Participate in the development and implementation of a policy (including reporting procedures) to manage the use of the lift net for collection of 'live' bait by NSW OTL fishers.	Implemented.
4.2(e) Implement a policy to manage the impact of dual endorsed Commonwealth tuna boats in NSW waters, in particular to regulate boat length and/or catches taken by larger than standard size boats, such as through amending the existing policy that allows tuna boats to upgrade in length whilst retaining State entitlements.	Implemented. The policy provision to grant new approvals for the use of longer boats in NSW fisheries by fishing businesses that held or acquired a Commonwealth tuna longline permit has been removed. A 16 metre maximum boat length restriction (see cl.10 of the OTL SMP) applies to the OTLF. This ensures that no new boats above 16 metres that have not historically operated in the OTLF can participate in the fishery. In addition, the policy provision to grant new permits to take bait from NSW waters for use in Commonwealth tuna operations by fishing businesses that hold or acquire a Commonwealth tuna long line permit has also been removed.
5.1(a) Implement the share management provisions of the *Fisheries Management Act 1994.*	Share management provisions implemented 5 February 2007.
5.3(a) Manage fishing effort in the OTLF by: i) capping the number of each endorsement type at currently active levels ii) establishing a maximum level of fishing effort for each sector of the OTLF to be achieved within 10 years of the commencement of the share management plan.	Minimum shareholding provisions established in the OTL SMP will contribute towards this management response. Further review and restructuring of fishing effort levels, through both endorsement numbers and linking shares to resource access are currently being considered by NSW DPI and the relevant fisheries advisory bodies.

MANAGEMENT RESPONSE	STATUS
5.4(d) Develop a cost recovery framework, in consultation with the MAC and the Ministerial advisory body relating to commercial fishing.	The FMSs for the major commercial fisheries foreshadowed the implementation of a cost recovery framework. In the context of ongoing work relating to industry structural reform (refer to 5.3(a)(ii) above) and due to many fishers being endorsed in multiple fisheries, a coordinated approach across all fisheries is considered the most efficient approach. Further consultation with SIAC and the MACs is needed to progress this management response.
6.1(a) Develop, implement and monitor a compliance plan for commercial designated fishing activities, including the OTLF.	Implemented. Refer to the section Compliance risks in this submission.
6.2(a) Develop and implement a Research Strategic Plan for the OTLF taking account of the priorities for research outlined in the harvest strategy.	Implemented. Refer to *Planning Strategic Research for Fisheries Aquaculture and Aquatic Conservation in NSW 2004 – 2009*[10].
6.3(a) Develop and implement the fishing business (skipper) card system	Implemented, as part of reforms to the commercial fisheries licensing arrangements occurring in February 2007 to complement the introduction of share management.
7.2(a) Promote and support targeted research projects that are relevant to: i) the biology and resource assessment of the primary and key secondary species in the OTLF, ii) the impacts of ocean trap and line fishing on biodiversity and the environment iii) economic and social factors affecting the fishery, and the effects of management changes on fishing businesses and communities.	Ongoing. Refer to Section 4 (Research and Monitoring) of this submission.
7.3(c) Modify the reporting system to remove lobster trap as a method on the ocean trap and line catch returns	Complete.

[10] Available at http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/168369/Planning-Strategic-Research.pdf

Appendix 3: Report on performance indicators in the OTLF (2006/07)

Performance indicator	Trigger point	Status	Comments
1.1 The estimated quantity of the ocean trap and line catch (by method) which is discarded	The quantity of discards for any observed method increases between consecutive observer surveys.	-	Consecutive observer data for the fishery not available
1.2 Species composition (for all retained and bycatch species) for fishing methods used within the fishery.	Significant shift in species composition detected between consecutive observer surveys for any method.	-	Consecutive observer data for the fishery not available
1.3 Response of the fishery to marine pest and disease incursions.	Guidelines specified in any Marine Pest and Disease Management Program are not adopted by the OTLF.	✓	All relevant guidelines adhered to in the fishery In late 2008 NSW DPI sent all commercial fishers a brochure 'Stop marine pests affecting you: Information for commercial fishers', which summarises best practice guidelines and outlines the marine pest issues. The awareness campaign alerts commercial fishers to the dangers marine pests pose to their livelihood, the environment and how the commercial fishing industry can help stop the spread of marine pests.
1.4 Areas closed to commercial ocean trap and line fishing in NSW managed waters.	Areas closed to commercial ocean trap and line fishing become open after the commencement of the FMS	✓	No areas closed to the OTLF have become open since November 2006. Note that the total area available for fishing has been reduced through the introduction of additional closures for the protection of grey nurse sharks and two new Marine Parks.
2.1 Changes in the exploitation status of primary or key secondary species to 'overfished' or 'recruitment overfished'.	The exploitation status of a primary or key secondary species is changed to 'overfished' or 'recruitment overfished' by NSW DPI	✘	For the 2006/07 period the exploitation status for grey (or rubberlip) morwong (*Nemadactylus douglasii*), a primary species in the OTLF, was changed to 'overfished'. Management response 2.2(a) of the OTL FMS requires the development and implementation of a recovery program when the exploitation status of a species is changed to 'overfished'.

Performance indicator	Trigger point	Status	Comments
2.2 Total annual landings of all secondary species (other than key secondary species) taken in the fishery as a percentage of the total annual landings in the fishery.	Contribution of secondary species to total trap and line landings exceeds 15% in any two consecutive years.	✓	The analysis compared the total annual landings of all secondary species (other than key secondary species) as a percentage of the total annual landings in the OTLF in 2006/07 and 2007/08. The trigger point was not activated. The contribution of secondary species to total annual landings in the OTLF in 2006/07 and 2007/08 was 11% and 10% respectively. [Note: Analysis based on reported landings as at 8 January 2009. Data is subject to ongoing validation.]
3.1 Interactions between the fishery and any threatened species, population or ecological community that are likely to threaten the survival of that threatened species, population or ecological community.	Any interactions between the fishery and a threatened species, population or ecological community reported by endorsement holders in the fishery or observed during an observer survey that are likely to threaten the survival of that threatened species, population or ecological community, as determined by the Director-General of NSW DPI on advice from relevant threatened species experts.	-	A scientific observer program for ocean line fishing methods commenced on 1 September 2007 to, among other things, identify the composition and quantity of bycatch of fishing methods and measure interactions with threatened and protected species. The field sampling phase of the program is due to be completed on 31 August 2009 and final results available upon completion of the final report scheduled for December 2009. The research project '*Observer-based survey of commercial shark fishing in coastal waters of northern New South Wales*' commenced on 1 September 2008 and provides for an intensive program of observer sampling onboard commercial line fishing trips specifically targeting large sharks in NSW waters north of Crowdy Head. Information regarding species composition of catches from the research project including any record of interactions with protected or threatened species, will be available upon publication of the final report (expected between June-Aug 2009 depending on when the field work component of the project finishes). No interactions reported by endorsements holders in the fishery have been determined to threaten the survival of a threatened species, population or ecological community.

Performance indicator	Trigger point	Status	Comments
3.2 Interactions between the fishery and protected species that are likely to threaten the survival of a protected species.	A biennial review undertaken by NSW DPI of interactions between the fishery and a protected species reported by endorsement holders in the fishery or observed during an observer survey that are likely to threaten the survival of that protected species, as determined by the Director-General of NSW DPI on advice from relevant threatened species experts.	-	As above. No interactions reported by endorsements holders in the fishery have been determined to threaten the survival of a protected species.
3.3 Number of grey nurse sharks caught by the OTLF.	Trigger point to be determined once baseline data collected.	-	Baseline data being collected through the scientific observer programs described elsewhere in this submission.
4.1 Change in the distribution of landings between the commercial sector and the non-commercial sector (combining recreational and Indigenous) for each OTLF primary species.	Maximum absolute difference in the distribution of landings between the commercial and non-commercial sectors is greater than 25 percentage points when compared every five years.	-	First five year period yet to expire.

Performance indicator	Trigger point	Status	Comments
4.2 Change in the distribution of landings among the NSW commercial fisheries for each OTLF primary species	Maximum absolute difference in the distribution of landings between the assessment and reference years is greater than 15 percentage points	✖	The analysis compared the distribution of total landings among NSW commercial fisheries for each OTLF primary species in 1999/00 and 2000/01 with the total landings in 2004/05 and 2005/06. The trigger point was breached for silver trevally (*Pseudocaranx dentex*) only. Over the analysis period the total catch of silver trevally increased marginally (by approximately 5%), however the distribution of landings among the Ocean Fish Trawl Fishery and the OTLF was greater than 15 percentage points. Ocean Fish Trawl Fishery landings of silver trevally increased by approximately 30% (as a percentage of the total NSW commercial catch) and OTLF landings declined by approximately 25%. However, implementation of the new MLL for silver trevally is expected to reduce the overall catch of this species by the ocean fish trawlers. In accordance with the OTL FMS, this assessment is to occur on a five year cycle. The next assessment year will be in 2011/12 and will compare the distribution of total landings among NSW commercial fisheries for each OTLF primary species in 2004/05 and 2005/6 with the total landings in 2009/10 and 2010/11.
4.3 Change in the distribution of landings among the OTLF endorsement types for each OTLF primary species	Maximum absolute difference in the distribution of landings between the assessment and reference years is greater than 25 percentage points	✓	Catch reporting requirements collect landings data based on methods in a fishery rather than endorsements. For example, in the OTLF, catch against line fishing methods, demersal fish trap and/or spanner crab nets are reported. Therefore, for the purpose of this performance indicator, the change in distribution of landings among OTLF methods for each OTLF primary species was analysed. The analysis compared the distribution of total landings among OTLF methods for each primary species in 1999/00 and 2000/01 with the total landings in 2004/05 and 2005/06. The trigger point was not activated. In accordance with the OTL FMS, this assessment is to occur on a five year cycle. The next assessment year will be in 2011/12 and will compare the distribution of total landings among OTLF methods for each primary species in 2004/05 and 2005/6 with the total landings in 2009/10 and 2010/11.

Performance indicator	Trigger point	Status	Comments
5.1 Net economic returns to the fishery	The Director-General of NSW DPI is satisfied that the gross value of production of the fishery has not exceeded the sum of indicative industry operational costs and government management costs relevant to the fishery for 3 consecutive years.	-	Not applicable to this year's assessment. A process of determining indicative operational costs is to be developed in consultation with the Seafood Industry Advisory Council and the relevant MACs.
5.2 Average market value of ocean trap and line shares when traded	Trigger to be determined within two years of the commencement of the share management plan	-	Although the Ocean Trap and Line Share Management Plan commenced on the 5 February 2007, a trigger point has yet to be determined. Further action required.
6.1 Percentages of total annual inspections in the OTLF which result in the detection of minor or major offences.	Percentage of inspections resulting in the detection of offences exceeds either of the following: (i) 20% for minor offences; (ii) 10% for major offences	✓	Differentiation between major and minor offences will be determined during the development of the penalty point scheme. In the interim, an overall compliance rate of less than 85% will be used as a trigger point. For the 2007/08 period the compliance rate was 86% in the OTLF.
6.2 Number of Ocean Trap and Line MAC meetings held each year.	Number of OTLMAC meetings is less than 2 in any calendar year, unless otherwise agreed to by the MAC	✖	Two OTLMAC meetings were held in the 2007 calendar year, 24 July and 5 November 2007. Due to ongoing consideration of broader cross fishery issues by the Seafood Industry Advisory Council (SIAC), including structural reform options, individual MAC meetings were deferred during 2008. Matters that required the urgent consideration of the OTLMAC were addressed on an out-of-session basis. A two day OTL MAC meeting is scheduled for 25 and 26 May 2009, with the first day of that meeting dedicated to discussing the structural reform process that has been the subject of discussion by SIAC over the past eighteen months.

Performance indicator	Trigger point	Status	Comments
6.3 Reviews and outcomes of strategic plans for research and compliance in the OTLF	The research or compliance strategic plans expire without being reviewed by NSW DPI, or the strategic plans are not modified consistent with the approved outcomes of a review.	✓	*Planning Strategic Research for Fisheries, Aquaculture and Aquatic Conservation in NSW, 2004 - 2009* is yet to expire. This document is regularly updated as; based on new research being completed, new completed research, new issues arise and stakeholder feedback; research priorities change. Compliance strategic plans for NSW commercial and recreational fisheries and aquaculture, including the overarching Statewide Compliance Plan are currently under review. The aim of the review is to align the plans with the Australian National Fisheries Compliance Strategy (AFNCS) which, through the direction of the National Fisheries Compliance Committee (NFCC), seeks to provide guidance to all Australian fisheries jurisdictions in achieving the objectives of the National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.
7.1 Number of primary and key secondary species in the OTLF with an 'uncertain' or 'undefined' exploitation status.	The number of primary and key secondary species with an 'uncertain' or 'undefined' exploitation status has not decreased between two consecutive odd-numbered years.	✓	First consecutive two odd-numbered years yet to expire. Number of primary and key secondary species harvested in the OTLF with an exploitation status "uncertain' or 'undefined' for 2005/06 and 2006/07: 2005/06 13 2006/07 12
7.2 The difference between the current and target resource assessment class for primary and key secondary species of the OTLF.	The sum of the difference between the current and target assessment class for the primary and key secondary species has not decreased between two consecutive odd-numbered years.	✓	First consecutive two odd-numbered years yet to expire. The sum of the difference between the current and target assessment classes for primary and key secondary species harvested in the OTLF for 2005/06 and 2006/07: 2005/06 26 2006/07 23
7.3 The number of research projects underway which have a flow of benefits to the OTLF and fill information gaps identified in the EIS.	The number of relevant research projects relevant to identified information gaps falls to less than two during any one year.	✓	Refer to 'NSW DPI (Systems Research - Wild Fisheries Unit) – Description of Current Research Projects'[11].

[11] Available at http://www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries#Current-projects

Performance indicator	Trigger point	Status	Comments
7.4 Accuracy of catch return data (in terms of quantity of product, record of completeness and species identification)	The percentage of species records with poor reporting does not decline after 1 year of operation of new reporting procedures	-	NSW DPI is currently undertaking a major project, *Catch Records Reform Project*, to develop a new catch information management system and related processes, including catch reporting information requirements and procedures.

Appendix 4: Relevant Scientific Outputs for the Ocean Trap and Line Fishery

Refer to the NSW DPI website for online summaries and, in some cases, full outputs at www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries

Broadhurst, M.K., Butcher, P.A., Brand, C. and Porter, M., 2007. Ingestion and ejection of hooks by yellowfin bream (*Acanthopagrus australis*)*:* Effects on long-term health and mortality. *Diseases of Aquatic Organisms, 74: 27–36.*

Brown IW, Scandol J and Mayer D (2008) Development of an integrated monitoring process for the Queensland-NSW stock. Chapter 2, pp 38 – 63 in: Brown, I.W, Scandol, J., Mayer, D., Campbell, M., Kondylas, S., McLennan, M., Williams, A., Krusic-Golub, K. and Treloar, T. "Reducing uncertainty in the assessment of the Australian spanner crab fishery". *Final report to the Fisheries Research & Development Corporation for project no. 2003/046.* Queensland Department of Primary Industries & Fisheries Project Report PR07-3314. Queensland, Australia. 96pp + appendices. ISBN 978 0 7345 0394 7.

Butcher PA, Broadhurst MK, Reynolds D and Cairns S (2008) Influence of terminal rig type on the anatomical hooking location of line-caught yellowfin bream *(Acanthopagrus australis). Fisheries Management & Ecology, 15: 303–313.*

Butcher, P.A., Broadhurst, M.K., Reynolds, D., Reid, D.D. and Gray, C., 2007. Effects of release method and anatomical hook location on the mortality of angler-caught yellowfin bream (Acanthopagrus australis) and mulloway (*Argyrosomus japonicus*). *Diseases of Aquatic Organisms, 74: 17-26.*

Forrest RE, Scandol JP and Pitcher TJ (eds) 2008 Towards ecosystem-based fishery management in New South Wales: Proceedings of the experts and data workshop, December 8 – 10, 2003, Cronulla, Australia. *Fisheries Centre Research Reports 14(5): 124 pp.* Published by the Fisheries Centre, University of British Columbia, Canada. ISSN 1198-6727.

Graham K (2008) Demersal diversity diets and demise of deepwater dogsharks off NSW. Pages 107–110 in: Forrest, R.E., Scandol, J.P. and Pitcher, T.J. (eds). "Towards ecosystem-based fishery management in New South Wales: Proceedings of the experts and data workshop, December 8–10, 2003, Cronulla, Australia". *Fisheries Centre Research Reports 14(5): 124pp.* University of British Columbia, Canada. ISSN 1198-6727.

Henry, G.W. and Lyle, J.M., 2003. The National Recreational and Indigenous Fishing Survey. Final Report to the Fisheries Research & Development Corporation and the Fisheries Action Program. Project No. 1999/158. *NSW Fisheries Final Report Series No. 48.* ISSN 1440-3544. 188pp.

Macbeth WG and Gray CA (2008) Observer-based research into commercial line fishing in NSW waters. Poster presentation given at the Australian Society for Fish Biology Workshop and Conference, Sydney, Australia, 15 – 18 September 2008.

Macbeth WG, Gray CA and Kennelly SJ (2007) Endangered Australian sharks and their interactions with line fishing in coastal waters. Pages 177 – 179 In: McVea, T.A. and Kennelly, S.J. (eds), Proceedings of the 5th International Fisheries Observer Conference, 15 – 18 May 2007, Victoria, British Columbia, Canada. NSW Department of Primary Industries, Cronulla Fisheries Research Centre of Excellence, Cronulla, Australia, 426 pp. ISBN 978 0 7347 1861 7.

NSW Department of Primary Industries, 2006. Determining the biological sustainability of wild fisheries in NSW: Concepts and definitions. An information paper by the Systems Research, Wild Fisheries Program. 27pp.

Scandol, J., 2006. Planning: The keystone species within ecosystem-based fisheries management. In: Ward, T.M., Geddes, M.C. and Mayfield, S. (eds), National Syposium on

Ecosystems Research and Management of Fish and Fisheries. *Australian Society for Fish Biology Symposium Proceedings, Adelaide, South Australia, September 2004*. 156pp.

Scandol, J.P., 2005. Essential Concepts of Effective Monitoring. A Guide to Monitoring Fish Stocks and Aquatic Ecosystems. Australian Society for Fish Biology Workshop Proceedings, Darwin, Northern Territory, 11 – 15 July 2005, *Fisheries Incidental Publication No 25, Darwin, Northern Territory Department of Primary Industry, Fisheries and Mines*, pp 10 – 16.

Scandol, J.P., 2004. A framework for the assessment of harvested fish resources in NSW. 96 pages. *NSW Department of Primary Industries - Fisheries Resource Assessment Series No. 15*. ISSN 1449-9940.

Scandol, J.P., 2003. Use of Cumulative Sum (CUSUM) Control Charts of Landed Catch in the Management of Fisheries. *Fisheries Research*. 64(1): 19-36.

Scandol J and Ives M (2008) A new approach for managing the data, information and knowledge associated with the resource assessment of multi-species fisheries. Presentation given at the Australian Society for Fish Biology Workshop and Conference, Sydney, Australia, 15 – 18 September 2008.

Scandol, J. and Ives, M., 2005. RAS: An intranet-based resource assessment system for multi-species fisheries monitoring and management. Oral presentation given at the 2005 Australian Society for Fish Biology Conference, 11-15 July 2005, Darwin, Australia.

Scandol, J. and Rowling K., 2007. Resource assessments for multi-species fisheries in NSW, Australia: Qualitative status determination using life history characteristics, empirical indicators and expert review. Oral presentation given at the 2007 ICES Annual Science Conference, 17 – 21 September 2007, Helsinki, Finland.

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Silberschneider V, Gray CA and Stewart J (2008) Age, growth, maturity and the overfishing of the iconic sciaenid, *Argyrosomus japonicus*, in south-eastern Australia. *Fisheries Research, 95: 220–229.*

Silberschneider, V. and Gray, C.A., 2005. Arresting the decline of the commercial and recreational fisheries for mulloway (*Argyrosomus japonicus*). *Final report on the Fisheries Research & Development Corporation Project No. 2001/027*. 71pp. ISSN 1449-9967.

Stewart J and Hughes JM (2009) Biological and fishery characteristics of rubberlip morwong (Nemadactylus douglasii) (Hector, 1875) in New South Wales, Australia. *Fisheries Research, 96: 267–274.*

Stewart J (2008) Evidence for age-class truncation in exploited populations of coastal fish in New South Wales. Presentation given at the Australian Society for Fish Biology Workshop and Conference, Sydney, Australia, 15 – 18 September 2008.

Stewart J (2007) By-catch reduction in wire-mesh fish traps. In: Kennelly, S.J. (ed.), By-catch Reduction in the World's Fisheries, pp. 1–18, Springer-Verlag Inc, Dordrecht, The Netherlands.

Appendix 5: A Summary Report against OTLF Export Approval conditions and recommendations (as at March 2009)

Condition/Recommendation	Progress
Condition 1. Operation of the fishery will be carried out in accordance with the restricted entry management regime in force under the NSW *Fisheries Management Act 1994*.	The Ocean Trap and Line Fishery (OTLF) is subject to a restricted entry management regime in force under the *Fisheries Management Act 1994*, with access arrangements being managed pursuant to the *Fisheries Management (Ocean Trap and Line Share Management Plan) Regulation 2006* (OTL SMP).
Condition 2. NSW DPI to advise DEWHA of any intended amendments to the OTLF management arrangements that may affect the assessment of the fishery against the criteria on which EPBC Act decisions are based.	No significant changes have been made to the management arrangements for the OTLF since the WTO was issued that could negatively affect the assessment. A significant regulatory reform process was finalised with the gazettal, on 14 November 2008, of a range of amendments to all commercial fishery share management plans, including the OTL SMP, and other regulations so that the majority of rules applying to a fishery can be found within its share management plan, and, to implement some of the new requirements contained within the fishery management strategies[12]. Amendment to the OTL SMP include, among other things: • The requirement to use a fish traps escape panel consisting of mesh 50 mm x 75 mm • A maximum number of 30 fish traps allowed per fishing business • Limiting hook numbers on set lines to 1200 per fishing business • Surface area of spanner crab net not to exceed 1.6m^2 • Wire trace line prohibited within 3 nautical miles of the natural coastline • Circle hooks required on all set lines. With the use of non-offset in waters < than 92m (50 fathom) • Seasonal spanner crab closure prohibiting the taking of females (21 October in any year to 20 January) and males (21 November to 20 December in each year) Further, new management arrangements for the commercial harvest of sharks[13] in the fishery came into effect 1 September 2008. They include daily catch reporting, annual catch caps (of 60 tonnes up to 30 June 2009) based

[12] New South Wales Government Gazette No. 148 (pp 11049 – 11245).
[13] http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/152394/Ocean-Trap-Shark-species.pdf

Condition/Recommendation	Progress
	on historical harvest levels, a weekly trip limit and by-catch limits. The arrangements apply to a defined group of large shark species (including all whaler, blue, hammerhead, mako and tiger sharks).
Condition 3. A report to be produced and presented to DEWHA by 27 March 2009, and to include: a. information sufficient to allow assessment of the progress of NSW DPI in implementing the conditions and recommendations; b. the status of the OTLF performance indicators compared to the trigger points.	a. This report seeks to satisfy this sub-condition. b. A table incorporating the status of the Fishery Management Strategy performance indicators compared to the trigger points can be found in Appendix 2 of this submission.
Condition 4. NSW DPI, in conjunction with OTLF stakeholders, to continue to develop and implement: a. further measures to cap active effort in the OTLF; and b. a strategy, including effort targets, milestones and associated trigger points, for reducing the level of fishing effort for each sector of the fishery.	a. As reported in November 2007 and May 2008, several measures have been developed to cap fishing effort and limit catches in the OTLF including: • transfer rules have been included in legislation to ensure no increase in the number of fishing businesses, number of operators within the OTLF and number of each endorsement type in the OTLF and other fisheries[14]; • the OTL SMP (at cl.6) provides for an increase to the minimum shareholding requirement within 2½ years from the commencement of the Plan on 5 February 2007. This means that existing shareholders in each share class in the OTLF will need to hold 40 shares in that share class in order to continue to be eligible for the endorsement. The minimum shareholding requirement will reduce the number of available endorsements in each share class in the OTLF; • a 16 metre maximum boat length restriction (see cl.10 of the OTL SMP). This ensures that no new boats above 16 metres that have not historically operated in the OTLF can participate in the fishery; • automatic baiting machines have been prohibited pursuant to management response 2.3(b) of the FMS (see cl.11 of the OTL SMP); and • the commencement on 3 September 2007 of new minimum legal lengths and increases to existing minimum legal lengths applying to a

[14] Refer to Part 5A of the *Fisheries Management (General) Regulation 2002*.

Condition/Recommendation	Progress
	range of species, including species relevant to the OTLF. Further measures recently implemented to cap fishing effort and limit catches in the OTLF include: • A maximum of 30 traps permitted to be used at any one time pursuant to management response 2.3(a) of the OTL FMS (cl. 7A(2) of the OTL SMP); • A maximum use at any one time of 1200 hooks applies to any line fishing method outside 3 nautical miles pursuant to management response 2.3(a) of the OTL FMS (cl. 7E of the OTL SMP); and • additional measures for limiting catches of sharks (referred to above at Condition 2). b. Review and restructuring of fishing effort levels are currently being considered by NSW DPI and the relevant fisheries advisory bodies, including endorsement numbers and creating a direct link between shares and resource access. As mentioned in Condition 4a above, clause 6 of the OTL SMP provides for an increase to the minimum shareholding requirement within 2½ years from the commencement of the Plan on 5 February 2007 (ie. on 5 August 2009). The minimum shareholding requirement will reduce the number of available endorsements in each share class in the OTLF.
Condition 5.NSW DPI to continue to collect and further analyse information from the scientific observer program in the line fishing sector and fishery-dependent logbooks on grey nurse shark interactions, with a view to reporting to the Department of the Environment, Water, Heritage and the Arts by 31 December 2009.	Refer to Monitoring programs of this submission (page 12 - 13).
Recommendation 1. NSW DPI to implement finer scale temporal and spatial logbook reporting in the OTLF to improve the robustness of resource assessments and allow for enhanced cross-jurisdictional cooperation.	As reported in November 2007 and May 2008 a major project, *The Catch Records Reform* Project, to develop a new catch information management system and related processes is progressing. New catch and effort reporting arrangements are due to commence in July 2009. The following link provides details of the new arrangements and samples of the new forms and other documents (http://www.dpi.nsw.gov.au/fisheries/commercial/catch-effort).
Recommendation 2: NSW DPI to develop and implement a robust system to validate catch and effort logbook data.	See progress against Recommendation 1 above. Note that *The Catch Records Reform Project* will allow streamlined and

Condition/Recommendation	Progress
	effective auditing between reported landings and fish receiver data.
Recommendation 3. NSW DPI to implement a system to improve the identification and recording of elasmobranchs species taken in the OTLF.	Implemented. New management arrangements[15] for the commercial harvest of sharks in the OTLF (refer to Condition 2 above) that came into effect on 1 September 2008 requires fishers to keep a daily record of fishing activities and provide NSW DPI a copy within 24 hours of landing. These new reporting arrangements require sharks and rays taken in the OTLF to be identified and recorded to the species, or in some cases genus, level. A new logbook for reporting catches of sharks was developed to gather more refined information and a comprehensive shark and ray identification guide[16] was produced and distributed to all OTL fishers to assist in correctly identifying and subsequently reporting encountered and landed shark species. Detailed species reporting is also a feature of the new catch reporting system due to commence in July 2009.
Recommendation 4. NSW DPI to develop a robust and regular fishery assessment that provides a basis for management decisions, which are precautionary and recognise uncertainty and level of risk. The assessment process will examine the exploitation status of the primary and key secondary species using resource assessment tiers.	As reported in November 2007, a formal Resource Assessment Framework has been developed and is used to carry out fisheries assessments in NSW. This framework is a well-defined, accessible program for the resource assessment of all marine fish species harvested in NSW. The type of assessment carried out for each species (or species complex) takes account of commitments made in FMSs, levels of risk identified in each EIS, the commercial and recreational importance of the species and its biology. Refer to 'A Framework for the Assessment of Harvested Fish Resources in NSW'[17] and 'Determining the Biological Sustainability of Wild Fisheries in NSW: Concepts and Definitions'[18] A report detailing the status of fisheries resources in NSW has recently been released. The "Status of Fisheries Resources in NSW 2006/07[19]" provides a

[15] http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/152394/Ocean-Trap-Shark-species.pdf

[16] http://www.dpi.nsw.gov.au/fisheries/commercial/fisheries/otl-fishery/identifying-sharks-and-rays

[17] Scandol, J.P. (2004) A Framework for the Assessment of the Harvested Fish Resources in NSW. NSW DPI. Fisheries Resource Assessment Series No. 15, ISSN 1449 – 9940. 96pp.

[18] Scandol, J.P. (2006) Determining the Biological Sustainability of Wild Fisheries in NSW: Concepts and Definitions. Cronulla, NSW DPI.

[19] Available at www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/221012/Status-Of-Fisheries-Resources-In-NSW-2006-07.pdf

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	general overview of the state of fish populations and a summary of the state of knowledge of key species commercially harvested in NSW commercial fisheries.
Recommendation 5. NSW DPI to institute programs to provide appropriate estimates of the harvest rates of OTLF primary and key secondary species by the recreational and Indigenous sectors and incorporate these data into the fishery resource assessment process.	NSW DPI continues to use results from the National Recreational and Indigenous Fishing Survey (2000/01) as part of the resource assessment process. NSW DPI is contributing to the project (2008/42) '*Development of a plan to address national needs for recreational fishing data for fisheries management and development*'. NSW DPI recognises the importance to have a well thought through strategy for monitoring recreational fishing to ensure that estimates collected are relevant, scientifically robust and collected in a cost effective manner. A lot of resources could be wasted by undertaking broadscale recreational fishing surveys or research programs in the absence of an overarching strategy. NSW DPI and the Recreational Fishing Trust have collaborated to fund a research project '*Recreational fishing surveys in the Greater Sydney Region*'. This project aims to, among other things, provide site specific data on recreational fishing effort and catch within the Hawkesbury Shelf Bioregion. Information from this project may be of some value during the resource assessment process in future.
Recommendation 6. NSW DPI to review the effectiveness of size limits, fish trap escape panels, fishery closures and other relevant management measures for snapper stocks and implement any changes required to further promote the rebuilding of stocks to ecologically sustainable levels.	The November 2007 and May 2008 reports identified a range of actions that have been taken to progress the management of snapper. Since those reports the following has occurred: • The mandatory use of fish escape panels (consisting of 50mm x 75mm mesh) in the OTLF was implemented in November 2008 (cl. 7A of the OTL SMP), • Consultation with OTL fishers, regarding the introduction of fishery closures where undersize snapper consistently congregate, has commenced and will progress as part of the development of a recovery program for snapper (refer to Recommendation 9), • NSW DPI has a representative closely involved in the QDPI&F Rocky Reef Fin Fish Fishery review which seeks to improve management of east coast snapper populations.
Recommendation 7. NSW DPI, within 12 months of approval of the FMS,	New gear restrictions introduced (refer to Condition 2 above), will help limit

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consult with Australian Fisheries Management Authority (AFMA) and implement compatible management measures to limit the take of deepwater dog fish and other deep water shark species of concern and support rebuilding of the relevant shark species.	effort in the setline component of the OTLF and potential impact upon deepwater species. Refined catch reporting requirements for the capture of sharks, the dissemination of shark and ray identification guide which includes dogfish species likely to be encountered in NSW waters, and results from the current scientific observer program will assist in quantifying and assessing the level of retained and discarded catches of deep water species in the OTLF. Daily limits and possession limits for Greeneye dogfish (and other deep water species) are prescribed in the OTL SMP for specific endorsement holders in the OTLF in waters described. [Note: NSW DPI has funded PhD research which included an analysis of the sustainability of dogshark fisheries of the east coast: Forrest, R. E. (2008). Simulation models for estimating productivity and trade-offs in the data-limited fisheries of New South Wales, Australia. UBC Fisheries Center. Vancouver, University of British Columbia. PhD: 357 pp]
Recommendation 8. NSW DPI to cooperate with other relevant jurisdictions to pursue complementary management and research of shared stocks for all relevant primary and key secondary OTLF species. In particular, NSW DPI will consult with AFMA in relation to setting compatible harvest measures for shared target stocks such as silver trevally, eastern gemfish, blue-eye trevalla and gummy shark in the Southern and Eastern Scalefish and Shark Fishery and with the Queensland Department of Primary Industries and Fisheries in relation to spanner crab and snapper.	As reported in May 2008, NSW DPI continues to consult with AFMA and QPDI&F to develop complementary management arrangements and research of shared fish resources. For example: • Commonwealth and QDPI&F representatives attended the NSW DPI Resource Assessment Workshop held in April 2008, providing input on relevant shared fish stocks; • NSW DPI and CSIRO scientists have completed a trawl survey and updated stock assessment for eastern gemfish during 2007[20]; • NSW DPI representatives attend meetings for both the Shelf and Slope species Resource Assessment Groups of the Commonwealth Southern and Eastern Scalefish and Shark Fishery; • NSW DPI provides data for assessments by Commonwealth Resource Assessment Groups for species which occur off NSW including jackass morwong, school whiting, john dory, ling, blue-eye and silver trevally and gemfish;

[20] Little, L.R., Rowling, K. and Punt, A.E. (2007) Eastern Gemfish (*Rexea solandri*) stock assessment based on 2007 survey data. 74pp CSIRO Marine Research, Hobart

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	• NSW DPI routinely attends meetings (either as observers or State representatives) for the Commonwealth Small Pelagic Fishery, South East Trawl and Eastern Tuna and Billfish Management Advisory Committees; • Researchers from NSW DPI and QDPI&F continue to work jointly on the Long Term Monitoring Program (LTMP), a fishery independent monitoring program for the east coast spanner crab fishery; • QDPI&F has re-analysed the harvest control rules used to set the TACC for the QLD spanner crab fishery using the LTMP data. The new analysis will include both the LTMP data and landings data for both QLD and NSW jurisdictions. These updated harvest control rules have the ability to generate recommended catches for both the QLD and NSW spanner crab fisheries; • NSW DPI has a representative on a QDPI&F project to look at improving the management of east coast snapper. • Complementary management arrangements, in the form of trip limits for NSW fisheries, of shared species under Commonwealth quota management.
Recommendation 9. NSW DPI to develop and implement a recovery strategy for all OTLF primary and key secondary species classified as recruitment overfished, within 6 months of the species being so classified. For species categorised as growth overfished, the status of the stocks will be reviewed and specific measures implemented, as required, within 12 months to prevent the stocks from becoming recruitment overfished.	To ensure an efficient and effective response to species needing recovery programs, NSW DPI is in the final stages of designing a consolidated approach to developing five new recovery programs for the current species of concern (mulloway, silver trevally, grey morwong, gemfish & snapper) and reviewing the existing program in place for eastern sea garfish. A consolidated approach: (i) takes account of the complexity of interaction between various fisheries, allowing for consistent decision making and consideration of management options which benefit multiple species and takes account of the cumulative social and economic impacts of and necessary changes; and (ii) reduces the administrative burden of developing six independent recovery programs (incl. the need to form and manage stakeholder committees, prepare options papers, briefings, etc). A consolidated process will be more efficient and effective, but will take additional (marginal) time to complete compared to doing five single species programs. Note that deferment of formal recovery programs has not prevented the initiation of interim management action where necessary (eg. the new silver trevally size limit).

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Recommendation 10. By the end of November 2007, NSW DPI to develop and implement a system sufficient to identify changes in the composition and quantity of bycatch over time and establish more robust estimates of interactions with threatened and protected species in the OTLF.	As reported in November 2007, a scientific observer program for ocean line fishing methods is underway to, among other things, identify the composition and quantity of bycatch of fishing methods and measure interactions with threatened and protected species. The field sampling phase of the program is due to be completed on 31 August 2009 and final results available upon completion of the final report due in December 2009. In addition, the research project '*Observer-based survey of commercial shark fishing in coastal waters of northern New South Wales*' commenced on the 1 September 2008 and provides for an intensive program of observer sampling onboard commercial line fishing trips specifically targeting large sharks in NSW waters north of Crowdy Head.