Australian Government

Department of Agriculture, Water and the Environment

Assessment of the New South Wales Ocean Trawl Fishery

JUNE 2021

This report should be attributed as '*Assessment of the New South Wales Ocean Trawl Fishery June 2021*, *Commonwealth of Australia 2021'*.

Disclaimer

This document is an assessment carried out by the Department of Agriculture, Water and the Environment of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment on the fishery in relation to decisions under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for the Environment or the Australian Government.

While reasonable efforts have been made to ensure that the contents of this report are factually correct, the Australian Government does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this report. You should not rely solely on the information presented in the report when making a commercial or other decision.

CONTENTS

EXECUTIVE SUMMARY OF THE ASSESSMENT OF THE NEW SOUTH WALES OCEAN TRAWL FISHERY

On 23 April 2021, the New South Wales Department of Primary Industries (NSW DPI) submitted an application for assesment of the NSW Ocean Trawl Fishery under protected species and wildlife trade provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Department of Agriculture, Water and the Environment (the department) sought public comments on the application and considered the comments received when assessing the fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. Public comments raised concerns in regard to the need for an updated environmental impact statement; the need for improved observer coverage and reporting of seabirds, sharks (including angel sharks), rays, and consideration of environmental change in managing fisheries.

The fishery

The fishery operates in state and Commonwealth waters (under Offshore Constitutional Settlement), from the NSW coast seaward to the 4,000 m isobath (excluding certain closed areas). The fishery uses Otter and Danish Seine trawl nets to target a range of fish species, prawns, octopus, cuttlefish, calamari, Balmain Bugs and Fiddler Sharks. The fishery management controls include: Total Allowable Commercial Catch (TACC) limits for some species, limited entry, vessel and gear controls, spatial and temporal closures, size limits and other catch limits. An Environmental Impact Statement (EIS) was completed for the fishery in 2004 and remains valid. Further assessment was undertaken through the NSW Marine Estate Threat and Risk Assessment Final Report (TARA) completed in 2017, by the Marine Estate Management Authority. It was an evidence-based threat and risk assessment for the NSW marine estate (state-wide TARA). The state-wide TARA was undertaken in accordance with the Threat and Risk Assessment Framework.

Target stocks

The stock status of primary target species and key secondary species taken in the fishery is assessed annually by fisheries scientists and managers. Of the 223 species or species groups reported in catch data for the past three years, Eastern School Whiting accounted for over 41 per cent of the catch volume, while Eastern King Prawns accounted for almost 23 per cent of the catch volume. Stocks of these two species are classified as sustainable in NSW (Hall et al. 2020, and Roelofs & Taylor 2020). Nine of the 13 primary target species identified by NSW DPI are classified as sustainable; one species (Silver Trevally) is depleted and still depleting (overfished and subject to overfishing) and three are undefined (octopus species, cuttlefish species, and Fiddler Sharks). Silver Trevally was the 18th most prevalent in catch volume, with 19 tonnes landed in 2017-2018, 8 tonnes landed in 2018-2019 and 4 tonnes landed in 2019-2020. These declines in commercial catches have also been seen in recreational catches and in catch rates for both sectors. Model estimates indicate that biomass is at or below 20 per cent unfished biomass and that there has been long-term truncation of length structure. These factors indicate the biomass is depleted, recruitment is impaired and that current fishing mortality levels are likely to prevent the stock recovering from its recruitment impaired state (Fowler et al. 2020).

Of the key secondary species, Red Fish and Grey (Rubberlip) Morwong were assessed as depleted (Emery, Liggins & Krueck 2020, and Stewart, Roelofs & Butler 2020). The following species had an undefined stock status: Squid (various); Gurnard/Latchet; Pink Tilefish and Boarfish (Status of Fisheries Resources in NSW 2014/15).

The Status of Fisheries Resources in NSW series incorporates standardised reporting, an annual review, and interpretation of available data by fisheries scientists. Catch from all sectors (including estimates from recreational and illegal sectors, where available) is taken into consideration when determining the status of a species.

While some CITES-listed shark species (such as Thresher Sharks, Smooth Hammerhead Sharks, and Short and Long Finned Mako Sharks) are caught in the fishery, none are overfished in NSW waters or exported from the fishery.

Threatended and Protected species and Threatened Ecological Communities

An Environmental Impact Statement (EIS) was completed for the fishery in 2004. The 2004 EIS indicated that the fishery posed a moderate/low, or low risk. Species the fishery potentially interacts with include a range of protected species including Grey Nurse sharks, Green Sawfish; Little Penguins and other seabirds, Humpback, Blue, and Southern Right whales; Green, Loggerhead, Hawksbill and Leatherback Turtles; and Australian, and New Zealand Fur Seals. Management measures are in place to mitigate the risk of interactions with protected species, and include the use of mandatory bycatch reduction devices, and spatial closures.

The NSW Marine Estate Threat and Risk Assessment Final Report (TARA) was completed in 2017, through the NSW Government's Marine Estate Management Strategy process. While the TARA mainly assesses the broader health of the ecosystem in which the fishery operates, the Ocean Trawl Fishery was assessed as posing a moderate to high potential risk to fish assemblages (harvest and bycatch) and incidental catch of protected species was considered likely. Key stressors from commercial fishing for the coastal/marine, and estuarine areas include: Bycatch; Reduction in species abundance and trophic levels; incidental catch of conservation concern species; physical disturbance – use of trawl gear; wildlife disturbance - shorebirds, turtles and whales; physical disturbance – interaction with fishing gear; marine debris ghost fishing.

Given the concerns for various shark species caught or interacted with in the fishery, and concerns for protected species and conservation dependent species (such as Eastern Gemfish), conditions have been included which address: the need for implementation/improvement of management measures for clear species identification, monitoring, and reporting.

A Climate Change Research Strategy was developed by NSW DPI (with support from the NSW Climate Change Fund) to assist project/program areas to support the primary industries sector to adapt to climate change. The project Vulnerability Assessment analyses impacts and adaptation across various industries, including fisheries. The project also analyses the impacts of climate change on 14 related biosecurity risks. Additionally, environmental change will be explicitly considered as part of developing harvest strategies for fish species and fisheries in NSW.

Conclusion

The department recommends declaration of the harvest operations of the New South Wales Ocean Trap and Line Fishery as an approved wildlife trade operation for three years, subject to the conditions detailed in Section 2 of this report. These conditions include measures to improve documentation of recovery strategies for depleted stocks, to ensure the operations of the fishery support recovery and do not contribute to further declines.

Unless a specific time frame is provided, all conditions must be addressed within the period of the approved wildlife trade operation declaration for the fishery.

SECTION 1: ASSESSMENT SUMMARY OF THE NEW SOUTH WALES OCEAN TRAWL FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION), CONSISTENT WITH THE EPBC ACT

Guidelines assessment	Meets	Partially meets	Does not meet	Details
Management regime	7 of 9	2 of 9	0 of 9	Management arrangements are well documented, publicly available, and transparent. Consultative processes involve a range of stakeholders. While there are some arrangements in place for the management of depleted stocks, formal recovery strategies are required to clarify their operation and demonstrate their efficacy.
Principle 1 (target stocks)	2 of 11	8 of 11	1 of 11	Data collection systems are in place, however there is limited information available on discarded catch, indigenous or illegal catches. Stock assessments indicate that some stocks are being sustainably managed, but some stocks are depleted and, in some cases still declining. Very few of these species have documented recovery strategies (including Silver Trevally which is depleted and still declining). Management arrangements designed to support recovery of depleted stocks are in place, but formal recovery strategies are required to clarify their operation and demonstrate their efficacy. The *NSW Harvest Strategy Policy* and *NSW Harvest Strategy Guidelines* are in the final stages of approval, following public consultation and consideration by all relevant NSW Ministerial Fisheries Advisory Councils. Where stocks are shared with other jurisdictions, NSW will cooperate with those jurisdictions so that harvest strategies for shared stocks are to the greatest extent possible compatible across jurisdictions. All sources of mortality will be considered in the development of each harvest strategy. Improving understanding of species with an undefined stock status is desirable as some of these species feature relatively highly in recent catch statistics for the fishery.
Principle 2 (bycatch and TEPS) * 1 criterion is not applicable.	8 of 12*	3 of 12*	0 of 12*	Although the fishery interacts with protected species, the risks to these species have been assessed as moderate to low. Bycatch reduction devices are mandatory in the fishery but reporting of bycatch is not undertaken by

				fishers. Some information on bycatch is collected by onboard observers, but information on bycatch is very limited for most species. Monitoring of indicator groups of bycatch species is also in place. The FMS includes a trigger on the relative quantities of bycatch, requiring a management review if the quantity of discards for any observed method increases between consecutive observer surveys.

Principle 2 (ecosystem impacts)	5 of 5	0 of 5	0 of 5	An ecological impact statement was conducted in 2004 and a broader, state focussed (TARA) assessment was conducted in 2017. The EIS included assessment of the impact of fishing operations on the marine ecosystem. The EIS indicated that any risks to the biophysical environment were low, due to the regulations in place to minimise the potential impact to the environment (e.g. pollution from vessels).
				
				The EIS (2004) indicated the following threats posed by the Ocean Trawl Fishery, on the **ecosystem**:
				
				• Species assemblages and diversity, ecological processes - High, indirect effect from trawling (physical damage)
				• Marine habitats – High, indirect effect from trawling (physical damage)
				• Loss of fishing gear – negligible risk
				• Travel to and from grounds – risk not applicable/negligible
				• Disturbance due to presence in area
				  - Species assemblages and diversity, ecological processes – negligible
				  - Marine habitats – negligible.
				
				The above assessments also identified a number of moderate and high threats associated with commercial fishing, including threats to fish assemblages from **harvest and bycatch**, impacts on protected species and impacts to deep and shallow soft sediment environments.
				
				A Climate Change Research Strategy was developed by NSW DPI to support the primary industries sector to adapt to climate change. Environmental change will be explicitly considered as part of developing harvest strategies for fish species and fisheries in NSW.

EPBC requirements	
Part 12	**Meets requirements** There is no evidence to suggest any systematic change to species diversity or richness caused by the fishery, indicating fishing effort is not having a material impact on the food chain or trophic structure. Given the management and mitigation measures in place, impact to key ecological features is considered low.
Part 13	**Meets requirements** This assessment considered the fishery's impacts on protected species and ecological communities and found risks to be low. A new part 13 approval is required to address changes in fisheries management legislation since the previous approval was granted.
Part 13A	**Meets requirements** This assessment considered the fishery's impacts on all species and the environment and found risks to be low. However, conditions have been recommended in Section 2 of this report to update and expand ecological risk assessment and risk management, improve data collection, and establish a framework for monitoring and managing fishery performance.
Part 16	**Meets requirements** The management arrangements are considered to be sufficiently precautionary to prevent serious or irreversible environmental damage being caused by this fishery. However, conditions have been recommended in Section 2 of this report to ensure recovery strategies are clearly articulated.

Notes:

Assessment history:

Information on previous assessments for the New South Wales Ocean Trawl Fishery is available on the department's website at https://www.environment.gov.au/marine/fisheries/nsw/ocean-trawl.

1st assessment finalised November 2005 – Exempt from export approval until 28 February 2006, while an approved wildlife trade operation (WTO) is in place for the fishery. Export approval was subject to four conditions.

2nd assessment finalised February 2009 – Exempt from export approval until 28 February 2012 while an approved wildlife trade operation (WTO) is in place for the fishery. Export approval was subject to four conditions and eight recommendations.

3rd assessment finalised June 2014 – Exempt from export approval until 23 June 2017 while an approved wildlife trade operation (WTO) is in place for the fishery. Export approval was subject to six conditions and four recommendations.

4th assessment finalised June 2018 – Exempt from export approval until 2 July 2021 while an approved wildlife trade operation (WTO) is in place for the fishery. Export approval was subject to four conditions.

Fishery reporting:

Annual report - https://www.dpi.nsw.gov.au/

Key links:

Fishery information

Management plan

- Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006

Enforcing legislation

- *Fisheries Management Act 1994*
- Fisheries Management (General) Regulation 2019
- Fisheries Management (Supporting Plan) Regulation 2006
- Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006
- https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2006-0737

Harvest strategy

The Draft NSW Fisheries Harvest Strategy Policy and Draft Guidelines for Implementing the NSW Fisheries Harvest Strategy Policy, were released for public comment in November 2020 until 22 January 2021. Harvest strategies will be developed through a staged process. A Trawl Whiting Harvest Strategy Working Group (HSWG) has been established to develop a harvest strategy for Trawl Whiting taken in all sectors.

Further information is available at https://www.dpi.nsw.gov.au/fishing/harvest-strategies.

- Fishery Management Strategy for the Ocean Trawl Fishery (2007).
- Draft NSW Fisheries Harvest Strategy Policy
- Draft Guidelines for Implementing the NSW Fisheries Harvest Strategy Policy

Ecological Risk Assessment

The 2004 Environmental Impact Assessment for this fishery comprises four volumes found here:

- https://www.dpi.nsw.gov.au/fishing/commercial/ea/otf-eis
- EIS - Chapter A (Risk, Response and Predicted Outcome) (pp. 27 – 35)
    - Table B2.42 - outlines ecological processes relevant to the marine environment and the potential impacts from commercial trawling) (pg. 182)
    - Table B2.43 - Summary of risk levels for ecological processes from the activities of the NSW Ocean Trawl Fishery (pg.187).
- NSW Marine Estate Threat and Risk Assessment Final Report – 2017 (TARA). The state-wide TARA was undertaken in accordance with the Threat and Risk Assessment Framework (PDF, 1824.18 KB) for the NSW Marine Estate and is evidence-based.
- DRAFT Marine Estate Management Strategy 2018 – 2028 (MEMA).

- Fishery Management Strategy for the Ocean Trawl Fishery (2007).
    - The Fishery Management Strategy (2007) describes the fishery and the management arrangements that apply or are proposed. Before the Strategy was finalised, a draft strategy was subject to a comprehensive environmental impact assessment process under the NSW Environmental Planning and Assessment Act 1979.

Stock assessments

NSW DPI assesses and reports on the stock status of 86 harvested marine fish species in NSW:

- Annually for species managed through Total Allowable Catch (TAC).
- Biennially through the national Status of Australian Fish Stocks (SAFS) initiative.

Catch from all sectors (including estimates from recreational and, where available, illegal sectors) are taken into consideration when determining the status of a species. Reports can be viewed at:

- *Status of Fisheries Resources in NSW* series – https://www.dpi.nsw.gov.au/content/research/fishing-aquaculture/sustainable-fish-harvest-program
- NSW 2021 Stock Assessment Reports - https://www.dpi.nsw.gov.au/fishing/commercial/open-for-comment/stock-status-summary-reports
- https://www.fish.gov.au/

Other

- Consultation arrangements: https://www.dpi.nsw.gov.au/fishing/commercial/consultation
- Fishing closures - https://www.dpi.nsw.gov.au/fishing/closures/commercial/ocean-trawl-fishery-closures
- Reporting arrangements are available at:

  https://www.dpi.nsw.gov.au/fishing/commercial/fishonline/fishermobile

  https://www.dpi.nsw.gov.au/fishing/commercial/catch-effort.
- Fisheries, Aquaculture and Aquatic Conservation Key Highlights and Statistics 2014-15 (NSW DPI, March 2016)
- Climate Change Research Strategy (2021)

SECTION 2: NEW SOUTH WALES OCEAN TRAWL FISHERY – SUMMARY OF ISSUES REQUIRING CONDITIONS, JUNE 2021

Issue	Condition
General Management Export decisions relate to the management arrangements in force at the time of any decision(s) made under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). To ensure that the decision(s) remain valid and export approval continues uninterrupted, the Department of Agriculture, Water and the Environment (the department) needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision(s). This includes operational and legislated amendments that may affect the sustainability of the target species or negatively impact on byproduct, bycatch, EPBC Act protected species or the ecosystem.	**Condition 1:** Operation of the NSW Ocean Trawl Fishery must be carried out in accordance with the management arrangements specified in the NSW *Fisheries Management Act 1994,* Fisheries Management (General) Regulation 2019, Fisheries Management (Supporting Plan) Regulation 2006, and the Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006. **Condition 2:** The New South Wales Department of Primary Industries must inform the Department of Agriculture, Water and the Environment of any intended material changes to the New South Wales Ocean Trawl Fishery management arrangements that may affect the assessment against which *Environment Protection and Biodiversity Conservation Act 1999* decisions are made. **Condition 3:** New South Wales Department of Primary Industries must inform the Department of Agriculture, Water and the Environment of any intended changes to fisheries legislation that may affect the legislative instruments relevant to this approval.
Annual reporting It is important that the New South Wales Department of Primary Industries (NSW DPI), produce and present reports to the department annually in order for the performance of the fishery and progress in implementing the conditions and other commitments described in this report to be monitored and assessed. Annual	**Condition 4:** The New South Wales Department of Primary Industries, must produce and present reports to the Department of Agriculture, Water and the Environment annually, as per Appendix B of the

Issue	Condition
reports should be prepared in accordance with Appendix B to the *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition* and include: a description of the fishery; management arrangements in place; research and monitoring outcomes; recent catch data for all sectors of the fishery; status of target stock; interactions with EPBC Act protected species; impacts of the fishery on the ecosystem in which it operates; and progress in implementing the department's conditions described in the previous assessment for the fishery. Electronic copies of the guidelines are available from the department's website at http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries.	*Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition*.
Recovery of depleted stocks The Fishery Management Strategy (FMS) for the New South Wales Ocean Trawl Fishery, requires a review of management arrangements, if stocks fall below specified trigger points. If a species is determined overfished, a recovery program must be developed for that species and recovery measures are required to be implemented. Several primary and secondary target species have been assessed as 'depleted' (most of these remain overfished) in New South Wales (Status of Australian Fish Stocks report, Fisheries Research and Development Corporation, 2020). These species include: Grey (Rubberlip) Morwong, Silver Trevally, Redfish, and Mulloway. Gemfish is depleted and also listed in the Conservation Dependant Threatened Species category of the EPBC Act. Although there are various management arrangements in place to support recovery of these stocks, the operation and interrelationships between data collection and monitoring, assessment and management responses are not well documented. Catches have increased for some species over recent years (e.g. Mulloway, Gemfish and Grey (Rubberlip) Morwong) and declined for others (e.g. Redfish and Silver Trevally). There is a recovery program in place for Mulloway, including restrictive management measures (recreational bag limits, minimum legal length, bycatch	**Condition 5:** By 1 July 2022, NSW DPI must provide the Department of Agriculture, Water and the Environment with a transition plan for the NSW Ocean Trawl Fishery. The transition plan must clearly document all existing data collection, assessment and performance monitoring, and management responses, for the recovery of depleted stocks impacted by the NSW Ocean Trawl Fishery. The transition plan must clearly articulate the interrelationships between these functions, to demonstrate that management of the depleted stock(s) will remain sustainable and facilitate recovery. The transition plan must also include timelines and milestones for the transition to and implementation of harvest strategies in the fishery.

Issue	Condition
allowance, possession limits per ocean hauling endorsement holder). NSW DPI reviewed its management arrangements and in 2018, reduced the recreational bag limit and removed the bycatch allowance for commercial fishers. Redfish is predominantly caught by the Commonwealth Southern and Eastern Scalefish and Shark Fishery (SESSF) and is managed under the 'Redfish Stock Rebuilding Strategy 2016'. However, the strategy outlines measure to rebuild Redfish stocks occurring in the Southern and Eastern Scalefish and Shark Fishery and does not guide the management of the stock in the New South Wales Ocean Trawl Fishery. The catch of Redfish from New South Wales waters accounts for less than 20 per cent of the total fishing mortality across all fisheries. Given Redfish is predominantly caught by the SESSF (and managed under the Redfish rebuilding strategy) the implementation of management actions to reduce fishing mortality as outlined in the 2021 fishery submission, are considered appropriate. Measures include minimum size limit and catch limits in the commercial and recreational fishing sectors; gear restrictions; bycatch reduction measures; and fishing closures in the commercial fishing sector. The Ocean Trawl Fishery includes the Southern Fish Trawl Restricted Fishery (SFT Fishery), as outlined in the 2021 submission. The Ocean Trawl Fishery (excluding the SFT fishery) is a share management fishery whereby commercial fishers who have sufficient shares to be eligible for an endorsement to operate in the fishery, are authorised to use specific gear depending on the area of water being fished. Gemfish has restrictive management measures in place including: a 50 kg whole weight trip limit applying to the Ocean Trawl share management fishery, where access is limited to shareholders or their nominated fishers holding sufficient shares to satisfy minimum shareholding levels); a recreational daily limit of two Gemfish; a recreational boat trip limit of 10 whole fish; and a prohibition on take in the SFT restricted fishery. As of 2019, Gemfish has been managed under quotas set in accordance with the Commercial Fisheries Business Adjustment Program (BAP). The total allowable commercial catch limit for Gemfish is currently set at '0' tonnes for the Ocean Trawl Fishery.	

Issue	Condition
The NSW Department of Primary Industries (NSW DPI) consults with the Australian Fisheries Management Authority (AFMA) and Queensland Department of Primary Industries (QDPI) when setting total allowable commercial catch limits for this shared stock in NSW. Complementary management arrangements also exist for this and other shared stocks that are conservation dependent (e.g. some species of upper slope dogfish). The NSW DPI provides data for assessments by QDPI and Commonwealth Resource Assessment Groups, for species occurring in NSW waters, and contributes data and has complementary management arrangements to contribute to recovery programs in other jurisdictions. This is done on a case-by-case basis and not for all species. There is no recovery strategy in place for Silver Trevally. The 2020 SAFS reports indicates that Silver Trevally catch rates declined during 1998 to 2009 across all major fishing methods. Catch rates have continued to either decline, or for some methods and areas, have remained steady. The catch rates in 2019 were the lowest observed since the 1998 when the time-series commenced. The declines in commercial and recreational catch (and catch rates) in New South Wales since the late-1990s; biomass levels (at or below 20 per cent unfished biomass) and long-term truncation of length structure, indicate that the biomass for Silver Trevally, is likely depleted and recruitment is likely impaired. The SAFS report also suggests that the current fishing mortality levels prevent the stock recovering from a recruitment impaired state (Fowler et al. 2020). The fishery's FMS requires a review of management arrangements if any stock falls below specified trigger points and, if a species is determined overfished, a recovery program is required to be developed for that species and recovery measures implemented as required. Given the continued overfished stock status for Grey Morwong, Silver Trevally, Redfish, Gemfish, and Mulloway, the department considers it important that urgent work be undertaken to demonstrate that the fishery management arrangements are supporting the recovery of these species and not contributing to further declines. In addition, to ensure fishing activities remain ecologically sustainable, to prevent over-exploitation, and facilitate the recovery of depleting or depleted stocks, the precautionary principle should guide risk management and the development of	

Issue	Condition
reference points, particularly when a high degree of uncertainty exists. All targeted fishing for the stock should cease until a rebuilding strategy is developed. The department expects NSW DPI to consider all sources of mortality when managing and recovering stocks, and where necessary, to collaborate with other jurisdictions on shared stocks.	

SECTION 3: DETAILED ANALYSIS OF THE NEW SOUTH WALES OCEAN TRAWL FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION)

Guidelines criteria	Comment
THE MANAGEMENT REGIME	
The management regime does not have to be a formal statutory fishery management plan as such, and may include non-statutory management arrangements or management policies and programs. The regime should:	
Be documented, publicly available and transparent.	**Partially meets – Most arrangements are documented, publicly available and transparent but recovery strategies for depleted stocks are not well documented.** The NSW Ocean Trawl Fishery includes the Southern Fish Trawl Restricted Fishery (SFT Fishery), as outlined in the 2021 submission. The Ocean Trawl Fishery (excluding the SFT fishery) is a share management fishery whereby commercial fishers who have sufficient shares to be eligible for an endorsement to operate in the fishery, are authorised to use specific gear depending on the area of water being fished. The management regime is based on a broad statutory framework and regulated operational tools that are documented, publicly available and transparent. The Ocean Trawl Fishery is managed by the Department of Primary Industries and Regional Development (DPIRD) under the following legislation: • *Fisheries Management Act 1994* • Fisheries Management (General) Regulation 2019 • Fisheries Management (Supporting Plan) Regulation 2006 • Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006. While arrangements are in place for the management of depleted stocks, the operation and interrelationships of these arrangements (data collection, monitoring, assessment and management) are not documented. This makes it difficult to assess the adequacy of these arrangements.

Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public.	**Meets – Fully open and transparent public process** New consultation arrangements for NSW commercial fisheries have been introduced since November 2012, following the Independent Report into NSW Commercial Fisheries Policy, Management and Administration. Committees and working groups include: • Ministerial Fisheries Advisory Committee (MFAC) – provides high-level strategic policy advice about issues relating to NSW fisheries resources management. • Commercial Fishing NSW Advisory Council (Commfish NSW) – provides industry representation/input, relating to strategic and policy issues to the NSW commercial fishing industry. • Working groups – Formed on 'as-needs' basis, providing specific advice on issues arising. The group disbands once the assigned tasks (relating to an issue) has been completed. Members are appointed by DPI Fisheries, based on skills and expertise relevant to specific tasks assigned to group.
Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process.	**Meets – Range of expertise and public interests involved** Expert advice and public input are provided through the various committees and working groups. • Ministerial Fisheries Advisory Committee (MFAC) – provides high-level strategic policy advice about issues relating to NSW fisheries resources management. • Commercial Fishing NSW Advisory Council (Commfish NSW) – provides industry representation/input, relating to strategic and policy issues to the NSW commercial fishing industry. Working groups – Formed on 'as-needs' basis, providing specific advice on issues arising. The group disbands once the assigned tasks (relating to an issue) has been completed. Members are appointed by DPI Fisheries, based on skills and expertise relevant to specific tasks assigned to group.
Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured.	**Meets - objectives and performance measures are in place to measure management effectiveness** Rules and regulations are contained in the NSW Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006, the *Fisheries Management Act 1994* and the Fisheries Management (General) Regulation 2010. The fishery's management arrangements are contained in the NSW Fishery Management Strategy for the Ocean Trawl Fishery (2007) which seeks to ensure that the management arrangements in place provide sustainable fisheries and activities into the future. The strategy also includes management goals, objectives, performance indicators and prescribed management responses. Periodic reports are prepared, outlining the implementation of management responses.

Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates.	**Meets – Capable of effective management of impacts on wider marine ecosystem** The NSW Marine Estate Threat and Risk Assessment Final Report – 2017 (TARA), outlines the following moderate and high threats resulting from the Ocean Trawl Fishery: • **Coastal and marine areas** - Moderate risk for deep soft sediments, and protected species and communities (North and Central) and species protected under BCA (North and Central only). - Low risk for shallow soft sediments (North), shallow reefs (Central and South), deep reefs (Central and South), fish assemblages (harvest and bycatch, Central and South), protected species and communities (South) and species protected under BCA (South). - High risk for Fish assemblages harvest and bycatch (north only). **Key stressors** for the coastal/marine, and estuarine areas outlined above, include: • bycatch • reduction in species abundance and trophic levels • incidental catch of conservation concern species • physical disturbance – use of trawl gear • wildlife disturbance - shorebirds, turtles, and whales • physical disturbance – interaction with fishing gear • marine debris • ghost fishing.

Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy.	**Partially meets – Formal recovery strategies needed for depleted species stocks** Management arrangements in place include: • TEP species interactions – requirement to record interactions and sightings, on mandatory monthly catch and effort returns • several fishery closures - Grey Nurse Shark • mid-water trawling – prohibition • closures to protect various ocean habitats • gear improvements to reduce incidental catch • trawling restrictions being introduced in areas/times identified as having incidental catch issues (e.g. target catch ratios etc.) • gear restrictions • trawl closures – permanent/temporary • bycatch reduction devices – mandatory. While arrangements are in place for the management of depleted stocks, the operation and interrelationships of these arrangements (data collection, monitoring, assessment and management) are not documented. This makes it difficult to assess the adequacy of these arrangements. Conditions have been recommended in Section 2 of this report to ensure recovery strategies are clearly articulated.
PRINCIPLE 1 - A fishery must be conducted in a manner that does not lead to over-fishing, or for those stocks that are over-fished, the fishery must be conducted such that there is a high degree of probability the stock(s) will recover**.**	
Objective 1 - The fishery shall be conducted at catch levels that maintain ecologically viable stock levels at an agreed point or range, with acceptable levels of probability.	
Information requirements	

1.1.1 There is a reliable information collection system in place appropriate to the scale of the fishery. The level of data collection should be based upon an appropriate mix of fishery independent and dependent research and monitoring.	**Partially meets – limited data availability**
	
	Monitoring programs include:
	
	• stock assessments (key commercial species)
	• scientific observers to record catch information (target and by-catch species)
	  - Cross-fishery observer program, informing composition/levels of bycatch (NSW commercial fisheries)
	  - Specific fisheries are assessed based on risk and 'multi-criteria' decision analysis
	  - Ocean Trawl Fishery recently assessed (TBC when). The final observer coverage report is underway
	• collection of catch and effort data
	  - Total catch in fishery, for 2019/2020 (as of October 2020) = 2,984 tonnes
	  - Recreational = estimated total catch was 14, 059, 634 organisms NSW/ACT waters (Survey of Recreational Fishing in New South Wales and the ACT 2013/14)
	  - Indigenous = no data available
	  - Illegal = no data available
	• port monitoring of landed fish products (data collection for fish length and age).
	
	Reporting arrangements are available at:
	
	• https://www.dpi.nsw.gov.au/fishing/commercial/fishonline/fishermobile
	• https://www.dpi.nsw.gov.au/fishing/commercial/catch-effort.
	
	The fishery's management arrangements are contained in the Fishery Management Strategy for the Ocean Trawl Fishery (2007) which seeks to ensure that the management arrangements in place provide sustainable fisheries and activities into the future.Rules and regulations are contained in the Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006, the *Fisheries Management Act 1994* No 38, and the Fisheries Management (General) Regulation 2010.
	
	Management goals, objectives, performance indicators and management responses, are conained in the Fishery Management Strategy for the Ocean Trawl Fishery (2007). Periodic reports are prepared, outlining the implementation of management responses

Assessment	

1.1.2 There is a robust assessment of the dynamics and status of the species/fishery and periodic review of the process and the data collected. Assessment should include a process to identify any reduction in biological diversity and /or reproductive capacity. Review should take place at regular intervals but at least every three years.	**Meets – Annual stock assessment or annual surveys** Stock assessments are conducted by NSW DPI, involving assessing and reporting on the stock status of 86 harvest marine fish species in NSW. Assessment and reporting include: • Annual review of species managed under TACC limits • Biennial review of stock status for a broader range of species under the national Status of Australian Fish Stocks (SAFS) assessment process. Catch estimates from commercial (and recreational and illegal sectors if available) are taken into consideration and stock assessment data is available through the Status of Fisheries Resources in NSW process. This includes standardised reporting, and annual review by fisheries scientists. Stock status for primary target species in the Ocean Trawl Fishery is assessed using SAFS and Status of Fisheries Resources in NSW 2014/15 data. The primary target species which were assessed as status other than 'sustainable' are: • Octopus spp. – various, **undefined** (NSW, Status of Fisheries Resources in NSW 2014/15) • Cuttlefish – **undefined** (NSW, Status of Fisheries Resources in NSW 2014/15) • Fiddler Shark – **undefined** (NSW, Status of Fisheries Resources in NSW 2014/15). Secondary target species status in the Ocean Trawl Fishery is also assessed using based on SAFS and Status of Fisheries Resources in NSW 2014/15 data. The species (and their classification) which were assessed as **status other than 'sustainable'** are: **(Classified as Depleted status** in NSW under the SAFS framework): • Silver Trevally (key primary species) - formal recovery program yet to be developed • Grey (Rubberlip) Morwong (key secondary species) – formal recovery program yet to be developed • Redfish (key secondary species) – formal recovery program yet to be developed. Species largely caught in Commonwealth Southern and Eastern Scalefish and Shark Fishery (managed under 'Redfish Stock Rebuilding Strategy 2016') • Eastern Gemfish (conservation dependent, EPBC Act) - Depleted in NSW under the SAFS framework - Restrictive management measures are currently in place in NSW to stop the decline and support the rebuilding of Eastern Gemfish stocks (50 kg whole weight trip limit, recreational daily limit of two Eastern Gemfish, recreational boat trip limit of 10 whole fish, prohibition on take in the Southern Fish Trawl Restricted Fishery

	- In 2019 this species became a quota managed species in the Ocean Trawl Fishery (and Ocean Trap and Line Fishery). • Mulloway – recovery program implemented in 2013 and further revisions to this strategy were implemented in 2018. Revisions include - a reduction in recreational bag limit (reduced to one) - removal of bycatch allowance for commercial fishers - draft guidelines to reduce bycatch of juvenile Mulloway in the fishery, including trigger levels to initiate or lift short-term trawl closures. Short-term trawling closures are implemented following flood events, to ensure the protection of juvenile fish and prawns (displaced from estuarine areas). **(Classified as undefined or fully fished status**): • Squid spp. – **undefined** (NSW, Status of Fisheries Resources in NSW 2014/15) • Gurnard/Latchet – **undefined**, (NSW, Status of Fisheries Resources in NSW 2014/15) • Angel Shark – **fully fished**, (NSW, Status of Fisheries Resources in NSW 2014/15) • Flounder spp. – **undefined**, (NSW, Status of Fisheries Resources in NSW 2014/15) • Mullet – Goldspot Mullet, **undefined**; Sand Mullet, **uncertain**; (NSW, Status of Fisheries Resources in NSW 2014/15) • Pink Tilefish – **undefined**, (NSW, Status of Fisheries Resources in NSW 2014/15) • Boarfish – **undefined** (NSW, Status of Fisheries Resources in NSW 2014/15). To assist in ensuring biological diversity conservation for the species/marine environment, various management actions have been implemented: • Collection of protected species interactions data – fishing endorsement holders are required to record interactions and sightings, via mandatory monthly catch and effort returns • Provision and adoption of threatened species recovery plans or threat abatement plans, including relevant changes fishery operation • Implementation of fishery closures - specific to Grey Nurse Shark • Prohibition of mid-water trawling • Closures implemented to protect ocean habitats • Gear improvements – incidental catch reduction • Introduction of trawling restrictions – in areas and/or times, identified as having problems with incidental-catch, to target-catch ratios • Permanent and seasonal trawl closures. • Gear restrictions (e.g. bobbin ground gear is prohibited in waters north of 32° 30' S) • Mandatory use of bycatch reduction devices.

1.1.3 The distribution and spatial structure of the stock(s) has been established and factored into management responses.	**Partially meets - management arrangements in place, complementary measure needed for some species** Share arrangements apply in the fishery which include: • increases to minimum shareholding requirements • introduction of catch and effort quotas. Harvest is primarily managed through input (effort) controls. Commercial daily catch limits (trip limits) apply to various species taken by the fishery, in NSW waters. The daily catch limits are intended to complement the quota system which limits the harvest levels of these species (Commonwealth endorsed boats). Updated trip limit details are provided via the: NSW DPI website; the Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006; and supporting plan. Some species in the fishery are also caught in other fisheries (NSW and Commonwealth). Where appropriate, complementary arrangements will be developed to ensure sustainable harvest of these stocks **1. Offshore prawn / Inshore prawn:** a) All fishers must hold the minimum shareholding of 50 shares to be endorsed to fish from December 2017 (increased from 40 shares). b) A catch quota for Tiger Flathead, Blue Spotted Flathead, Eastern School and Stout Whiting combined) commenced from 1 May 2019. c) Effort quota (hull unit days) commenced from 1 May 2019. d) Upon commencement of effort quota • the current maximum headline lengths were replaced with a standard headline length of 55 metres • boat licences were not required for boats less than 20 metres in length. e) Engine power restrictions were removed from December 2017. **2. Fish trawl (Northern zone)** a) All fishers must hold the minimum shareholding of 50 shares to be endorsed to fish from December 2017 (increased from 40 shares) b) A catch quota for tiger flathead, blue spotted flathead, silver trevally, gemfish, Eastern School and Stout Whiting combined) commenced from 1 May 2019 c) Upon commencement of catch quota boat licences were not required for boats less than 20 metres in length. **3. Deepwater prawn -** All fishers must hold the minimum shareholding of 25 shares to be endorsed to fish from December 2017 (increased from 20 shares). **4. Southern fish trawl -** Not part of the BAP.

	Some species in the fishery are also caught in other fisheries (NSW and Commonwealth). Where appropriate, complementary arrangements will be developed to ensure sustainable harvest of these stocks.
1.1.4 There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.	**Partially meets – Indigenous catch and illegal catch data not available. Discard data not collected.** While there is data available on removals by the commercial and recreational sectors, no quantitative data is available for Indigenous and illegal catch. The NSW DPI fishery monitoring program includes stock assessment work on 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). <u>Share arrangements</u> apply in the fishery which include: • increases minimum shareholding requirements • introduction of catch and effort quotas <u>Monitoring programs include</u>: • Stock assessments (key commercial species) • Scientific observers recording catch information (target and by-catch species) - cross-fishery observer program, informing composition/levels of bycatch (NSW commercial fisheries) - specific fisheries are assessed based on risk and 'multi-criteria' decision analysis - the most recent Ocean Trawl Fishery observer coverage includes 2014 to 2016 (fish trawl, northern component of fishery), and 2017 to 2019 (prawn trawl) - the final observer coverage report is underway. • Collection of catch and effort data - Total commercial catch in fishery, for 2019/2020 (as of October 2020) = 2,984 tonnes - Recreational = estimated total catch was 14, 059, 634 organisms NSW/ACT waters ('Survey of Recreational Fishing in New South Wales and the ACT 2013/14') - Indigenous = no data available - Illegal = no data available. • Port monitoring of landed fish products (data collection for fish length and age).

1.1.5 There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.	**Partially meets – Productivity is currently being estimated. Harvest strategy under development** Scientific data about the status of the fish stocks, including environmental factors and harvest pressures that could influence stock abundance, are usually determined through the stock assessment and review process. Management goals, objectives, performance indicators and management responses, are contained in the Fishery Management Strategy for the Ocean Trawl Fishery (2007).
Management responses	
1.1.6 There are reference points (target and/or limit), that trigger management actions including a biological bottom line and/or a catch or effort upper limit beyond which the stock should not be taken.	**Meets – Robust reference points are in place.** The FMS includes various performance indicators within the FMS performance monitoring process, relating to resource sharing. The performance indicators are used to detect large changes in catch of key species: between the commercial and non-commercial sectors; among each commercial fishery in NSW; and among methods/ endorsement types, within the fishery. NSW DPI's Fisheries, Aquaculture and Aquatic Conservation Key Highlights and Statistics 2014-15 is the latest publication to include FMS performance (against performance indicators and trigger points). The report indicates that there were no trigger points (relating to various potential trigger issues) 'triggered' for 2014/2015 (outcomes for the Ocean Trawl Fishery indicated an 'n/a'; 'N', or '-').

1.1.7 There are management strategies in place capable of controlling the level of take.	**Partially meets – Strategies in place to control the level of take. Harvest strategies being developed** Input controls are predominantly used in the fishery, and include: • licence restrictions • boat size/engine capacity • net mesh and length size • fishery area and time limits. Commercial daily catch limits (trip limits) apply to various species taken by the fishery, in NSW waters. The daily catch limits are intended to complement the quota system which limits the harvest levels of these species (Commonwealth endorsed boats). Updated trip limit details are provided via the: NSW DPI website; the Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006; and supporting plan. In addition, endorsement holders are required to record TEP interactions/sightings, via mandatory monthly catch and effort returns. The *NSW Harvest Strategy Policy* and *NSW Harvest Strategy Guidelines* are in the final stages of approval following public consultation and consideration by all relevant NSW Ministerial Fisheries Advisory Councils. Harvest strategies in NSW will be done in accordance with the *NSW Harvest Strategy Policy* and *NSW Harvest Strategy Guidelines.* Where stocks are shared with other jurisdictions, NSW will cooperate with those jurisdictions so that harvest strategies for shared stocks, as far as possible, are compatible across those jurisdictions. All sources of mortality will be considered in the development of each harvest strategy.

1.1.8 Fishing is conducted in a manner that does not threaten stocks of byproduct species.	**Partially meets - some species depleted** The 2021 fishery submission (NSW DPI, page 7) outlines the key secondary species caught in the fishery, including various marine species: various fin-fish species; Blue Swimmer Crabs; and various species of shark. The *Status of Fisheries Resources in NSW* series, NSW 2021 Stock Assessment Reports, and SAFS reports outline data relating to the landings of primary and key secondary species taken in the Ocean Trawl Fishery. The 2021 fishery submission (p.25) also outlines the status of key secondary species in the fishery, with some species assessed as depleted, or undefined (others assessed as sustainable). The NSW Marine Estate Threat and Risk Assessment Final Report – 2017 August 2017, states that (along with the priority threats identified in the TARA) the risk evaluation has identified the need for additional consideration of several cumulative risk issues including: • management of fish assemblages and the uncertainty associated with potential impacts from fishing activities on trophic structure and function of marine ecosystems • threatened species protected under the *Biodiversity Conservation Act 2016* there are key knowledge gaps associated with these cumulative issues as well as more generally in relation to understanding the risks to the flow of social and economic benefits from the marine estate. • Greater knowledge and awareness of the tangible and intangible benefits indigenous people derive from the marine estate was also recognised as a key knowledge gap. The TACC for quota managed species was implemented in May 2019 and TACCs are reviewed and redetermined annually (applying to fishing period 1 May to 30 April). The Total Allowable Fishing Committee is responsible for determining the 2020/2021 and 2021/2022 TACC. TACCs are in place for the following species in the Ocean Trawl Fishery: • Bluespotted Flathead • Tiger Flathead • Eastern School Whiting/Stout Whiting (combined catch) • Silver Trevally • Eastern Gemfish. More information is available at https://www.dpi.nsw.gov.au/fishing/commercial/total-allowable-fishing (NSW Department of Primary Industries). Although there are a range of data collection, assessment and management activities being undertaken by NSW DPI, there is nothing that clearly articulates the interrelationships between these functions, to demonstrate that management is sustainable and where stocks are depleted, to facilitate their recovery. These measures are expected to be reflected in the harvest strategies for the fishery which are currently under development.

	A condition has been proposed for inclusion on any export approval to address these needs.
(Guidelines 1.1.1 to 1.1.7 should be applied to byproduct species to an appropriate level)	
1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Partially meets – Recovery strategies needed** The fishery's management arrangements are likely to maintain stocks within ecologically viable levels, and while NSW DPI has implemented management arrangements for the take of depleted fish in place of recovery programs, additional measures may be required to support overfished or depleted stocks shared with other commercial fisheries. Conditions proposed in Section 2 of this report are expected to address the risks identified in the assessment and ensure the fishery is managed sustainably over the period of any export granted. The harvest strategy for the fishery is expected to be developed under the NSW Marine Estate Management Strategy 2018 - 2028.
If overfished, go to Objective 2: **If not overfished, go to PRINCIPLE 2:**	
Objective 2 - Where the fished stock(s) are below a defined reference point, the fishery will be managed to promote recovery to ecologically viable stock levels within nominated timeframes.	
Management responses	

1.2.1 A precautionary recovery strategy is in place specifying management actions, or staged management responses, which are linked to reference points. The recovery strategy should apply until the stock recovers, and should aim for recovery within a specific time period appropriate to the biology of the stock.	**Does not meet - Various depleted species, formal recovery programs to be developed** The fishery catches a wide range of species, a number of which have been assessed as depleted below sustainable levels. Although there are a range of data collection, assessment and management activities being undertaken by NSW DPI, there is nothing that clearly articulates the interrelationships between these functions, to demonstrate that management is sustainable and where stocks are depleted, to facilitate their recovery. These measures are expected to be reflected in the harvest strategies for the fishery which are currently under development. A condition has been proposed for inclusion on any export approval to address these needs. The 2021 fishery submission outlines those species assessed with a 'depleted' status under the SAFS framework in NSW. These include: • Grey (Rubberlip) Morwong – formal recovery program yet to be developed • Silver Trevally - formal recovery program yet to be developed • Redfish – formal recovery program yet to be developed. Species is mainly caught in Commonwealth Southern and Eastern Scalefish and Shark Fishery (managed under the Redfish Stock Rebuilding Strategy 2016). • Eastern Gemfish (conservation dependent, EPBC Act) - Depleted in NSW under the SAFS framework - Restrictive management measures are currently in place in NSW to stop the decline and support the rebuilding of Eastern Gemfish stocks (50 kg whole weight trip limit, recreational daily limit of two Eastern Gemfish, recreational boat trip limit of 10 whole fish, prohibition on take in the Southern Fish Trawl Restricted Fishery) - Under the BAP in 2019, species became quota managed species in the Ocean Trawl Fishery (and Ocean Trap and Line Fishery). • Mulloway – recovery program implemented in 2013. Changes were implemented in 2018, following review of recovery arrangements - A reduction in recreational bag limit (reduced to 1). - Removal of bycatch allowance for commercial fishers. - Draft guidelines to reduce bycatch of juvenile Mulloway in the fishery, include trigger levels to initiating/lifting short-term closures (to trawling). - To ensure the protection of juvenile fish and prawns (displaced from estuarine areas), short-term trawling closures are implemented following flood events. The SAFS reporting process (2020) indicates the following for the depleted species: **Silver Trevally** (primary species) The SAFS report (2020) classifies biological stock as depleted. The SAFS report indicates that catch rates (all areas) declined during 1998 to 2009 for both major fishing methods - fish trawling and fish trapping.

	Catch rates during 2010 to 2019 (2010 to 2019) declined or remained steady (varied with the fishing method/area assessed). The catch rates during 2019 were reported to be the lowest observed since the 1998 (when the time-series commenced). The SAFS report concluded that due to declines in commercial and recreational catch and CPUE in New South Wales since the late-1990s; biomass levels at or below 20 per cent unfished biomass; and long-term truncation of length structure, indicate biomass for this species is likely depleted and recruitment is likely impaired. The SAFS report therefore suggests that the current fishing mortality levels prevent the stock recovering from a recruitment impaired state. **Grey (Rubberlip) Morwong** (key secondary species) The SAFS report (2020) classifies biological stock as depleted. It also reports that in 2018–2019, the stock was approximately 40 per cent of the 1997–1998 levels. The 2020 SAFS report also reports that the size of Grey Morwong (commercial landings) is reported to have declined substantially since the 1970s and 1980s, and since then the stocks have not shown evidence of recovery. Since 1997, the size compositions have been reported to have relatively low median lengths (Stewart and Hughes 2009, Stewart 2020). In addition, the New South Wales recreational harvest of Grey Morwong has declined (from approximately 156 tonnes in 2000–2001 to 29 tonnes in 2013–2014 (West et al. 2015) to 22 tonnes in 2017–2018 (Murphy et al. 2020). This indicates a decline in the availability of this species to recreational fishers. The SAFS report (2020) indicates the biomass of this part of the stock is likely to be depleted and recruitment is likely to be impaired. **Redfish** (key secondary species) The SAFS report (2020) reports the south eastern Australia stocks are depleted, and the most recent stock assessment (Tuck et al. 2017) assumes a single stock across regions, and the stock status is determined for a single stock on the east coast of Australia. The report suggests that the assessment of the stock status is presented at the biological stock level (south eastern Australia). The NSW annual commercial catch has declined over the past (approximately) ten years from 29 tonnes in 2009/2010, to 4.4 tonnes in 2018/2019. However, species are mainly taken in the Commonwealth Southern and Eastern Scalefish and Shark Fishery, and are managed under the Redfish Stock Rebuilding Strategy 2016 The NSW catch of species is less than 20 per cent of the total fishing mortality. NSW DPI hasn't developed formal recovery program, and consider NSW DPI consider this has not prevented the implementation of management

	actions to reduce fishing mortality (e.g. min. size limits and catch limits in comm. And rec. sectors; and bycatch reduction measures and fishing closures in comm. Sector). **Eastern Gemfish** The SAFS report (2020) reports the NSW (Eastern) stock is depleted. Commercial landings in NSW declined from 20.6 tonnes to 3.0 tonnes, between 2009 to 2018/2019 (respectively). The majority of catch has been reported as coming from the NSW Ocean Trap and Line Fishery. Recreational catch has been assessed as negligible (compared to commercial catch). **Mulloway** The SAFS report (2020) reports that the NSW stock status is depleted (and undefined in Queensland). Commercial landings declined from approximately 400 tonnes in mid-1970's, to a historic low of 37 tonnes in 2008-2009. Commercial landings have been reported to be less than 100 tonnes annually since mid-1990's (Hughes 2020). The SAFS report (2020) indicates that the total state-wide, commercial catch in 2019 was 48 tonnes. Recent recreational harvest in NSW was approximately 12, 000 fish (a total of approximately 90 tonnes) during 2017–2018 (Murphy et al. 2020). This is more than the commercial catch of 72 tonnes, during the same period (Hughes 2020). The SAFS report 2020, suggests that measures in place to manage the current fishing mortality, are expected to allow the stock to recover. However the report also indicates that there is no evidence of measurable improvements as yet. There is no recovery plan developed for: Grey (Rubberlip) Morwong; Silver Trevally; and Redfish. Restrictive management measures are in place to assist in the recovery of Eastern Gemfish stocks. Harvest is managed through trip limits and as outlined in the 2021 fishery submission, and the TACC for the Ocean Trawl Fishery is zero. Other fishery management measures in the fishery include the development of draft guidelines to reduce bycatch of juvenile Mulloway in the Ocean Trawl Fishery. The guidelines include trigger levels (initiating/lifting short term closures to trawling), and the implementation of short-term trawl closures following significant flood events, to assist in protecting juvenile fish and prawns displaced from estuarine areas. The department acknowledges the measures in place to assist in reducing fishing mortality, and the development of draft guidelines (Mulloway) and restrictive management measures (Eastern Gemfish). However, other species remain depleted/overfished, since the previous fishery assessment (2018). An objective of the Fishery Management Strategy for the Ocean Trawl Fishery is to promote the recovery of overfished species. The strategy also provides for the development and implementation of a recovery program if the Ocean Trawl Fishery is identified as the major harvester of a species determined as overfished.

	At the time of the previous fishery assessment, NSW DPI confirmed that there was no recovery program in place for Grey (Rubberlip) Morwong, and measures were yet to be developed. Condition four was put in place in 2018, requiring NSW DPI to consider appropriate measures to reduce catch of Grey (Rubberlip) Morwong, and clearly articulate its recovery measures for this species. However, the 2021 fishery submission indicates that Grey Morwong has been assessed (remains) as 'depleted' in NSW under the SAFS framework, and a formal recovery program has not yet been developed. Measures are in place including minimum size limits – 30 cm (commercial and recreational sectors; bag limit of 10 (recreational sector); gear restrictions; bycatch reduction measures; and fishing closures (commercial sector). The 2021 fishery submission also outlines that the Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006 (the SMP); the FM (General) Regulation 2019, and the Fisheries Management (Supporting Plan) Regulation 2006, outline various spatial and temporal closures which apply to the Ocean Trawl Fishery. (e.g. waters closed permanently to all commercial fishing or class of commercial fishing; spatial and temporal closures, for protection of juvenile stock, resource sharing between sectors, and to protect the biophysical environment). The department understands that the *NSW Harvest Strategy Policy* and *NSW Harvest Strategy Guidelines* are in the final stages of approval, following public consultation and consideration by relevant NSW Ministerial Fisheries Advisory Councils. The NSW harvest strategies will be done in accordance with the *NSW Harvest Strategy Policy* and the *NSW Harvest Strategy Guidelines.* Where stocks are shared with other jurisdictions, NSW will cooperate with those jurisdictions to ensure as far as possible that the harvest strategies for shared stocks, are compatible across those jurisdictions. All sources of mortality will be considered in the development of each harvest strategy. The department recommends conditions be applied to any export approval for the fishery, as detailed in Section 2 of this report, to improve documentation of recovery strategies for depleted stocks and allow the operation and effectiveness of these arrangements to be better monitored and assessed.

1.2.2 If the stock is estimated as being at or below the biological and / or effort bottom line, management responses such as a zero targeted catch, temporary fishery closure or a 'whole of fishery' effort or quota reduction are implemented.	**Partially meets – Management responses have been implemented but require improvement** The 2021 fishery submission outlines those species assessed with a 'depleted' status under the SAFS framework in NSW. These include: • Grey (Rubberlip) Morwong – formal recovery program yet to be developed • Silver Trevally - formal recovery program yet to be developed • Redfish – formal recovery program yet to be developed. Species largely caught in Commonwealth Southern and Eastern Scalefish and Shark Fishery (managed under 'Redfish Stock Rebuilding Strategy 2016'). • Eastern Gemfish (conservation dependent, EPBC Act) • Mulloway – recovery program implemented in 2013. Changes were implemented in 2018, following review of recovery arrangements - A reduction in recreational bag limit (reduced to 1). - Removal of bycatch allowance for commercial fishers. - Draft guidelines to reduce bycatch of juvenile Mulloway in the fishery, include trigger levels to initiating/lifting short-term closures (to trawling). - To ensure the protection of juvenile fish and prawns (displaced from estuarine areas), short-term trawling closures are implemented following flood events. Many recovery programs are still to be developed for the depleted species. However, to assist in ensuring biological diversity conservation for the species/marine environment, various management actions have been implemented which should assist with managing the stock recovery: • Collection of TEP species interactions data - endorsement holders are required to record interactions/sightings, via mandatory monthly catch and effort returns • Provision/adoption of threatened species recovery plans or threat abatement plans, including relevant changes fishery operation • Implementation of fishery closures - specific to Grey Nurse Shark • Prohibition of mid-water trawling • Closures implemented to protect ocean habitats • Gear improvements – incidental catch reduction • Introduction of trawling restrictions – in areas and/or times, identified as having problems with incidental-catch/target-catch ratios • Permanent and temporal trawl closures • Gear restrictions (e.g. bobbin ground gear is prohibited, north of 32° 30' S) • Mandatory use of bycatch reduction devices.

	The department understands that the *NSW Harvest Strategy Policy* and *NSW Harvest Strategy Guidelines* are in the final stages of approval, following public consultation and consideration by relevant NSW Ministerial Fisheries Advisory Councils. The NSW harvest strategies will be done in accordance with the *NSW Harvest Strategy Policy* and the *NSW Harvest Strategy Guidelines.* Where stocks are shared with other jurisdictions, NSW will cooperate with those jurisdictions to ensure as far as possible that the harvest strategies for shared stocks, are compatible across those jurisdictions. All sources of mortality will be considered in the development of each harvest strategy. The department considers that given the number of primary and key secondary species with 'depleted' status (some remaining depleted/overfished from the previous WTO period). The department recommends conditions be applied to any export approval for the fishery, as detailed in Section 2 of this report, to improve documentation of recovery strategies for depleted stocks and allow the operation and effectiveness of these arrangements to be better monitored and assessed. The most recent commercial catch data available (2019/2020) indicates the following for depleted primary and key secondary key species: • Mulloway - catch has been increasing since 2017 (0.435 t 2017/18 to 0.807 t 2019/20) • Redfish - Catch declining since 2017 (4.161 t 2017/18 to 1.913 t 2019/20) • Eastern Gemfish - Catch increasing since 2017 (0.036 t 2017/18 to 0.129 t 2019/20) • Grey (Rubberlip) Morwong - Increase since last season (0.532 t 2018/19 to 0.816 t 2019/20) • Silver Trevally - Catch declining since 2017 (18.608 t 2017/18 to 4.359 t 2019/20). Source: NSW DPI 16-4-21 extract - ongoing validation may alter. Some landings may be of processed fish (so whole weight is likely to be higher).

PRINCIPLE 2 - Fishing operations should be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.	
Objective 1 - The fishery is conducted in a manner that does not threaten bycatch species.	
Information requirements	
2.1.1 Reliable information, appropriate to the scale of the fishery, is collected on the composition and abundance of bycatch.	**Partially meets – limited data for some species** As outlined in the 2021 fishery submission, the composition and levels of bycatch (in NSW commercial fisheries) is monitored by a cross-fishery scientific observer program which considers one fishery/fishing method at a time, based on risk, and the use of multi-criteria decision analysis. The Ocean Trawl Fishery received observer coverage as follows: • Fish Trawl (northern) – 2014 to 2016 • Prawn Trawl – 2017 to 2019. The field work outcomes were: • **Fish Trawl** (i.e. northern) - Low level interaction (vessels/gear) with threatened and/or protected species - Three Flesh-footed Shearwaters (*Puffinus carneipes*) caught and discarded **dead**. - One White Shark (*Carcharodon carcharias*) observed in area of trawl vessel during landing of catch. - One Grey Nurse Shark (*Carcharias taurus*) caught, and released alive following gear retrieval. It was observed to swim down and away from vessel following release. • **Prawn Trawl** - Low level interactions (vessels/gear) with threatened and/or protected species - One Grey Nurse Shark – released alive following gear retrieval. It was observed to swim down and away from vessel following release. - One Herbst Nurse Shark (*Brachaeluridae* undifferentiated) - released alive following gear retrieval. It was observed to swim down and away from vessel following release. - Syngnathidae – Observed 133 caught (several species as outlined below) on 19 separate fishing days. ○ Bentstick Pipefish (*Trachyrhamphus bicoarctatus*) = 93 ○ Common Seadragons (*Phyllopteryx taeniolatus*) = 11 ○ Seahorses (undifferentiated) and Pipefish (Syngnathidae, undifferentiated) = 29 - No data available, relating to the outcome of the above Syngnathids, following being caught. - Additional work is underway, to determine fishery-wide Syngnathid catch estimates.

Assessment	
2.1.2 There is a risk analysis of the bycatch with respect to its vulnerability to fishing.	**Meets – Risk analysis of bycatch vulnerability has been conducted** Bycatch varies temporally and spatially within the fishery. The 2004 EIS noted that approximately 60% of bycatch species (of no commercial value) were at high or moderately high risk, based on 1990s observer studies. Species of commercial importance (undersized specimens) were described as being at moderate to high risk, although there was limited information available about commercially important discarded species. In 2017, the state-wide TARA process assessed the impact of commercial fisheries on a wide range of fish assemblages. The Ocean Trawl Fishery was assessed as posing a moderate to high potential risk to fish assemblages (harvest and bycatch) and incidental catch of protected species was considered likely. The NSW DPI has advised that they are developing tailored harvest strategies for fish species and fisheries in NSW. This process will also include the development of an Ecological Risk Assessment process, applicable to all harvest strategies being developed over the next few years. Currently, the method is being applied to key byproduct species in the fishery including finfish, elasmobranchs, cephalopods, crustaceans and other invertebrates that make up 95% of the byproduct catch. The NSW DPI also advised that the ERA is being done separately for the fish trawl and ocean prawn trawl sectors. The ERA assesses two components of risk – the human pressure being exerted on the species, and the capacity of the species to respond to that pressure. It also includes assessing the effectiveness of fishery management controls in preventing or mitigating impacts on the fish stocks, and management controls that protect the capacity of species to respond to human pressures. Results of the ERA are being compiled and reviewed, and stakeholder consultation is yet to be undertaken. The results of the preliminary ERA are not ready to be released publicly.
Management responses	
2.1.3 Measures are in place to avoid capture and mortality of bycatch species unless it is determined that the level of catch is sustainable (except in relation to endangered, threatened or protected species). Steps must be taken to develop suitable technology if none is available.	**Partially meets – Management responses are under development** It is mandatory that all otter trawl net gear (prawns and fish) have bycatch reduction devices (‘BCD’s, approved for use in the fishery). Further information about BCD gear is available at: https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/639977/bycatch-closure.pdf. A program is in place in the Ocean Trawl Fishery involving adaptively managing access to assist in reducing bycatch (especially bycatch of Mulloway, classified overfished). Commercial fishers and NSW DPI are collaborating to develop new gear, aimed at minimising bycatch of juvenile Mulloway (school prawn sector) and considered to also remove the need for closures.

2.1.4 An indicator group of bycatch species is monitored.	**Partially meets – Monitoring of indicator group of bycatch species in place, discard catch data not collected** A cross-fishery observer program, and research (NSW DPI and commercial fisheries) into gear development, provide a basis for ongoing monitoring of bycatch species including discards. However, discard catch data is not collected.
2.1.5 There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.	**Meets – Performance measures have been implemented** The FMS outlines triggers and managements measures, including a management review if the quantity of discards for any observed method increases between consecutive observer surveys. The department considers it important to collect and report on discarded catch, to assist in accurate reporting and analysis of catch data.
2.1.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Meets – High chance** It is likely that the fishery is conducted in a way that minimises threats to bycatch species. Various management measures including Bycatch Reduction Devices (BRDs) have been implemented to assist in reducing the impacts of fishing on bycatch species.

Objective 2 - The fishery is conducted in a manner that avoids mortality of, or injuries to, endangered, threatened or protected species and avoids or minimises impacts on threatened ecological communities.	
Information requirements	
2.2.1 Reliable information is collected on the interaction with endangered, threatened or protected species and threatened ecological communities.	**Meets – Reliable records of interactions with endangered, threatened or protected species and threatened ecological communities** Various management actions have been implemented, to assist in ensuring biological diversity conservation for the TEP species and the marine environment: • Collection of TEP species interactions data - endorsement holders are required to record interactions/sightings, via mandatory monthly catch and effort returns • Provision/adoption of threatened species recovery plans or threat abatement plans, including relevant changes fishery operation • Implementation of fishery closures - specific to Grey Nurse Shark • Prohibition of mid-water trawling • Closures implemented to protect ocean habitats • Gear improvements – incidental catch reduction • Introduction of trawling restrictions – in areas and/or times, identified as having problems with incidental-catch/target-catch ratios • Permanent and temporal trawl closures • Gear restrictions (e.g. bobbin ground gear is prohibited, north of 32° 30' S) • Mandatory use of bycatch reduction devices.
Assessments	

2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.	**Meets – EIS conducted, and NSW Marine Estate Threat and Risk Assessment Final Report available** The 2021 fishery submission indicates that an Environmental Impact Statement (EIS) was conducted for the fishery in 2004. The EIS provides information about the risk levels applying to threatened and protected species that might interact with the fishery. The EIS identified eleven TEP species which interact with the fishery operations, and all were assessed as being at moderate-low, or low risk, to potential threat from trawling. The species include: • Gould's Petrel – moderate to low risk • Northern Royal Albatross – moderate to low risk • Southern Giant Petrel – moderate to low risk • Wandering Albatross – moderate to low risk • Blue Whale – low risk • Dugong – low risk • Southern Right Whale – moderate to low risk • Loggerhead Turtle – low risk • Grey Nurse Shark, east coast population – low risk • Green Sawfish – moderate to low risk. The Ocean Trawl Fishery was also assessed through the NSW Marine Estate state-wide Threat and Risk assessment process, and priority threats are outlined in the NSW Marine Estate Threat and Risk Assessment Final Report (2017) and the Marine Estate Management Strategy (draft). The NSW Marine Estate Threat and Risk Assessment Final Report (Table 3-1) summarises the moderate to high threats, posed by commercial fishing (which includes the Ocean Trawl Fishery) in estuarine and coastal marine areas. The key stressors include: • reduction in abundances of species and trophic levels • bycatch • incidental catch of species of conservation concern • physical disturbance through use of trawl gear • wildlife disturbance (shorebirds, turtles, wales) • physical disturbance through interaction with fishing gears • marine debris • ghost fishing.

	The above report also indicates following: • Ocean trawling activities pose a moderate to high priority threat to coastal and marine waters in NSW. • Ocean trawling activities (coastal and marine) pose a moderate to high priority threat to environmental assets. Appendix C of the NSW Marine Estate Threat and Risk Assessment Final Report (2017) indicates the various levels of risk posed by commercial fishing activities in the Ocean Trawl Fishery. **High risks** were indicated for the fish assemblages - harvest and bycatch (northern). Bycatch in the fishery has been reported to include protected species. The 2021 fishery submission indicates the composition and levels of bycatch (in NSW commercial fisheries) is monitored by a cross-fishery scientific observer program which considers one fishery/fishing method at a time, based on risk, and the use of multi-criteria decision analysis. Protected species were included in the composition. The Ocean Trawl Fishery received observer coverage as follows: • Fish Trawl (northern) – 2014 to 2016 • Prawn Trawl – 2017 to 2019. The field work outcomes were: • **Fish Trawl** (i.e. northern) - Low level interaction (vessels/gear) with threatened and/or protected species - Three Flesh-footed Shearwaters caught and discarded dead. - One White Shark observed in area of trawl vessel during landing of catch. - One Grey Nurse Shark caught and released alive following gear retrieval. It was observed to swim down and away from vessel following release. • **Prawn Trawl** - Low level interactions (vessels/gear) with threatened and/or protected species - One Grey Nurse Shark – released alive following gear retrieval. It was observed to swim down and away from vessel following release. - One Herbst Nurse Shark - released alive following gear retrieval. It was observed to swim down and away from vessel following release. - Syngnathidae – Observed 133 caught (several species as outlined below) on 19 separate fishing days. ○ Bentstick Pipefish = 93 ○ Common Seadragons = 11 ○ Undifferentiated seahorses and pipefish = 29 • No data available, relating to the outcome of the above Syngnathidae, following being caught. • Additional work is underway, to determine fishery-wide Syngnathidae catch estimates.

	In addition, NSW DPI implemented (2005) mandatory reporting of TEP species interactions for all NSW commercial fisheries and implemented the cross-fishery scientific observer program. TEP species interactions-reduction management actions in the Ocean Trawl Fishery include: • implementation of various fishery closures specific to Grey Nurse Shark • prohibition of mid-water trawling • gear improvements to reduce incidental catch • management arrangements to reduce interactions and mortality associated with the capture of Harrison's Dogfish, Endeavour Dogfish, Southern Dogfish and Greeneye Spurdog. The state-wide TARA was undertaken in accordance with the Threat and Risk Assessment Framework for the NSW Marine Estate and is evidence-based.
2.2.3 There is an assessment of the impact of the fishery on threatened ecological communities.	**N/a -** There are no EPBC listed threatened ecological communities within the area of the fishery.
Management responses	

2.2.4 There are measures in place to avoid capture and/or mortality of endangered, threatened or protected species.	**Meets – Mitigation strategy in place to avoid interactions with protected species** The Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006 outlines various restrictions that reduce the risk of mortality of listed marine species. The following measures are in place: • TEP species interactions – requirement to record interactions and sightings, on mandatory monthly catch and effort returns • Several fishery closures - Grey Nurse Shark • Mid-water trawling – prohibition • Closures to protect various ocean habitats • Gear improvements to reduce incidental catch • Trawling restrictions being introduced in areas/times identified as having incidental catch issues (e.g. target catch ratios etc.) • Gear restrictions • Trawl closures – permanent/temporary • Bycatch reduction devices – mandatory.. The 2021 fishery submission outlines that a Priority Action Statement (PAS) was implemented in 2005, for Grey Nurse Shark, Scalloped Hammerhead Shark, Great Hammerhead Shark, and Great White Shark. The PAS outlines strategies/actions to assist in the recovery of threatened species (including population, ecological communities, and key threatening processes). The PAS includes priorities, performance indicators, status reports and timeframes for recovery plans.
2.2.5 There are measures in place to avoid impact on threatened ecological communities.	**N/a** There are no EPBC listed threatened ecological communities within the area of the fishery.
2.2.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Meets – High chance of achieving the objective** The fishery is conducted in a way that is likely to be effective in avoiding impacts to protected species and ecological communities. The EIS indicates that a national recovery plan is in place (2002) for Grey Nurse sharks, to address the threats which were outlined above in 2.2.2. The NSW Marine Estate Threat and Risk Assessment Final Report and the Marine Estate Management Strategy (draft), include proposed management actions to address them over the next 10-years. With the inclusion of conditions (Section 2 in this assessment document) relating to the management of protected species, and conservation dependent species, the fishery operations are likely to be effective in avoiding impacts to protected species and ecological communities.

Objective 3 - The fishery is conducted, in a manner that minimises the impact of fishing operations on the ecosystem generally.	
Information requirements	
2.3.1 Information appropriate for the analysis in 2.3.2 is collated and/or collected covering the fishery's impact on the ecosystem and environment generally.	**Meets – Robust methods of data collection in place** The following have been conducted: • An EIS was conducted in 2004 – outlines fishery impacts on the ecosystem and general environment. • FMS performance assessment process - monitors management of impacts on the ecosystem. • The 2017 TARA process, includes assessment of potential ecosystem risks (NSW Marine Estate Threat and Risk Assessment Final Report). Impacts: • Chapter E1.1.5 - Species Assemblages, Species Diversity and Ecological processes (pp. 353 – 356) • Chapter B2.2.2 - Risk Analysis of the Current Operation of the Ocean Trawl Fishery - Broad Ecosystem (pp.109-112) of the EIS identified the potential impacts of the NSW Ocean Trawl Fishery on marine habitats; protected species; threatened species, populations or ecological communities; by catch; target species; ecological processes; biodiversity; and species assemblages.
Assessment	

2.3.2 Information is collected and a risk analysis, appropriate to the scale of the fishery and its potential impacts, is conducted into the susceptibility of each of the following ecosystem components to the fishery. 1. Impacts on ecological communities • Benthic communities • Ecologically related, associated or dependent species • Water column communities 2. Impacts on food chains • Structure • Productivity/flows 3. Impacts on the physical environment • Physical habitat • Water quality	**Meets – Robust ERA has been conducted** The EIS (2004) indicated the following threats posed by the Ocean Trawl Fishery, on the **ecosystem**: • Species assemblages and diversity, ecological processes - High, indirect effect from trawling (physical damage) • Marine habitats – High, indirect effect from trawling (physical damage) • Loss of fishing gear – negligible risk • Travel to and from grounds – risk not applicable/negligible • Disturbance due to presence in area - Species assemblages and diversity, ecological processes – negligible - Marine habitats – negligible. The NSW Marine Estate Threat and Risk Assessment Final Report 2017 (Appendix C of the report) indicates the following potential threat levels to environmental asset by ocean trawling commercial fishing activity: • **High risk** - coastal and marine fish assemblages (harvest and bycatch) in the north only • **Moderate risk** Estuarine - NSW *Biodiversity Conservation Act 2016* protected species (north and central only) - Fish assemblages (harvest and bycatch) - Shallow and soft sediments - NSW *Fisheries Management Act 1994* protected species (north and south only) Coastal and marine - Beaches (north and south only) - Deep soft sediments - Fish assemblages (harvest and bycatch); central and south only - NSW *Fisheries Management Act 1994* protected species (central and south only) - NSW *Biodiversity Conservation Act 2016* protected species (north and central only). The above report (Table 2-3) indicates that the Ocean Trawl Fishery operation as one of the commercial fishing operations posing key stressors to the marine assets. Potential stressors include: • reduction in species abundance and trophic levels • marine debris • incidental catch (species of conservation concern)

	• physical disturbance - through use of trawl gear and interaction with fishing gear • Ghost fishing • incidental bycatch.
Management responses	
2.3.3 Management actions are in place to ensure significant damage to ecosystems does not arise from the impacts described in 2.3.1.	**Meets – Management actions in place** The 2021 fishery submission, outlines the following managed arrangements in place: • Collection of TEP species interactions data - mandatory monthly catch and effort returns • Adoption of threatened species recovery plans/threat abatement plans - changes made as needed • Implementation of Grey Nurse Shark fishery closures • Mid-water trawling prohibition • Implementation of closures to protect a range of ocean habitats • Gear improvements to reduce incidental catch • Trawling restrictions - in identified areas/times of problem incidental catch to target catch ratios • Gear restrictions - e.g. prohibition of bobbin ground gear, north of 32° 30' S • Permanent and temporal trawl closures • Mandatory use of bycatch reduction devices.
2.3.4 There are decision rules that trigger further management responses when monitoring detects impacts on selected ecosystem indicators beyond a predetermined level, or where action is indicated by application of the precautionary approach.	**Meets – Performance measures in place** The fishery's management arrangements are outlined in the 2021 fishery submission, and are listed above in 2.3.3. Periodic reports are prepared, outlining the implementation of management responses.
2.3.5 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	**Meets – High chance** There is a high chance that the objective will be achieved. The management response appears likely to be effective in minimising the impact of the fishery on the ecosystem.

SECTION 4: ASSESSMENT OF THE NEW SOUTH WALES OCEAN TRAWL FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT

The table below is not a complete or exact representation of the EPBC Act. It is intended to show that the relevant sections and components of the EPBC Act have been taken into account in the formulation of advice on the fishery in relation to decisions under Part 13 and Part 13A.

Part 12 – Identifying and monitoring biodiversity and making bioregional plans

Section 176 Bioregional Plans	Comment
(5) Minister must have regard to relevant bioregional plans	**Meets – Has regard to relevant bioregional plan** The fisher operates in state and Commonwealth waters (under OCS), from the NSW coast seaward to the 4000 m isobath (excluding certain closed areas). The Marine Bioregional Plan for the Temperate East Marine Region (2012). (2012) identifies key ecological features present in the area of the fishery: • Shelf rocky reefs which are associated with the shift from algae dominated sea-floor communities to those dominated by attached invertebrates, with this shift occurring at around 45 metres depth. • Canyons on the eastern continental slope, which contribute significantly to the overall habitat diversity of the sea floor and create localised changes in productivity of the water column above them, providing feeding opportunities for a range of species. Harvesting of living resources and physical disturbance to seafloor, are described as pressures of concern in the Temperate East Marine region. However, specific measures are in place in the Ocean Trawl Fishery that mitigate the impact of these pressures. They include trawling closures and mandatory use of bycatch reduction devices. However, there is no evidence to suggest any systematic change to species diversity or richness caused by the fishery, indicating fishing effort is not having a material impact on the food chain or trophic structure. Given the management and mitigation measures in place, impact to key ecological features is considered low. Conservation values of regional priority include inshore dolphins, marine turtles, Grey Nurse Sharks, White Shark and sea-birds breeding on islands. The fishery

	management regime includes specific measures in place to mitigate risk of interactions with protected species, including spatial closures and bycatch reduction devices. Overall, given the management measures in place in the fishery, the values of the Temperate Marine Region are not being compromised by the Ocean Trawl Fishery.

Part 13 – Species and communities

Accreditable plan, regime or policy (Division 1, Division 2, Division 3, Division 4)	**Comment**
s. 208A (1) (a-e) , s.222A (1) (a-e), s.245 (1) (a-e), s.265 (1) (a-e) Does the fishery have an accreditable plan of management, regime or policy?	**Yes**, there is an accreditable management regime. The regime was last accredited under Part 13 in 2014. However, a new Part 13 accreditation will apply for this fishery. The fishery will be managed under the *Fisheries Management Act 1994;* Fisheries Management (General) Regulation 2019; Fisheries Management (Supporting Plan) Regulation 2006; Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006.
Division 1 Listed threatened species, Section 208A Minister may accredit plans or regimes	**Comment**
(f) Will the plan, regime or policy require fishers to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing?	**Yes,** there are specific measures in place to mitigate the risk to protected species. The fisher operates in state and Commonwealth waters (under OCS), from the NSW coast seaward to the 4000 m isobath (excluding certain closed areas). The fishery's management strategy does not permit fishers to take protected species, including listed threatened species, and all interactions with protected species must be reported. Specific management measures are in place to minimise the fishery's impact on listed threatened species, including through mandatory use of bycatch reduction devices (BRDs, otter trawl net - prawns and fish), spatial closures, and prohibition on mid-water trawling.

	The fishery's management regime was accredited in June 2014. However, a new Part 13 accreditation is recommended to account for changes in the fisheries legislative frameworks that have occurred since that time.
(g) And, is the fishery likely to adversely affect the survival or recovery in nature of the species?	Given the relatively low number of interactions, and given the management measures in place, including the use of BRDs, it is unlikely the fishery will adversely affect the survival or recovery in nature that species.
Division 2 Migratory species, Section 222A Minister may accredit plans or regimes	**Comment**
(f) Will the plan, regime or policy require fishers to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing?	**Yes,** there are specific measures in place to mitigate the risk to protected species. The fisher operates in state and Commonwealth waters (under OCS), from the NSW coast seaward to the 4000 m isobath (excluding certain closed areas). The fishery's management strategy does not permit fishers to take protected species, including migratory species, and all interactions with protected species must be reported. Specific management measures are in place to minimise the fishery's impact on protected species, including through mandatory use of bycatch reduction devices (BRDs, otter trawl net - prawns and fish), spatial closures, and prohibition on mid-water trawling. The management regime for the NSW Ocean Trawl Fishery was accredited in June 2014. However, a new Part 13 accreditation is recommended to account for changes in the fisheries legislative frameworks that have occurred since that time.
(g) And, is the fishery likely to adversely affect the conservation status of a listed migratory species or a population of that species?	**No,** the fishery endorsement holders reported the following interactions, as outlined in the 2021 fishery submission: <u>2018/2019</u> • Prawn Trawl Grey Nurse Shark – 1 caught, and discarded healthy • Fish Trawl - Turtle – 1 (not specified) healthy. <u>2019/2020</u> • **Prawn Trawl** - White Shark – 1 was caught, and discarded healthy. - Fish Trawl - Turtle – 1 caught, and discarded healthy.

	Given the low numbers of interactions during 2018 and 2020, and the mitigation measures in the fishery (BRDs, closures, etc.) the department considers it is unlikely the fishery operation will adversely affect the conservation status of a listed migratory species or a population of that species.
Division 3 Whales and other cetaceans, Section 245 Minister may accredit plans or regimes	**Comment**
(f) Will the plan, regime or policy require fishers to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing?	**Yes,** there are specific measures in place to mitigate the risk to protected species. The fishery operates in state and Commonwealth waters (under OCS), from the NSW coast seaward to the 4000 m isobath (excluding certain closed areas). The fishery's management strategy does not permit fishers to take protected species, including Cetacean species, and all interactions with protected species must be reported. Specific management measures are in place to minimise the fishery's impact on protected species, including through mandatory use of bycatch reduction devices (BRDs, otter trawl net - prawns and fish), spatial closures, and prohibition on mid-water trawling. The fishery's management regime was accredited in June 2014. The management arrangements for the fishery have not significantly changed since this accreditation was granted. However, a new Part 13 accreditation will apply for this fishery.
(g) And, is the fishery likely to adversely affect the conservation status of a species of cetacean or a population of that species?	**No,** the fishery endorsement holders reported no interactions with Cetaceans between 2016 and 2018, as outlined in the 2021 fishery submission. The EIS and the *NSW Marine Estate Threat and Risk Assessment – Background Environmental Information* (FINAL Environmental TARA Background Report) outline there is a low risk to Cetaceans. The TARA report (Figure 13 in the report) shows a steady increase in incidents with Cetaceans from 1960s up until 2013 (latest date shown). Potential risks include: • Interactions when vessels are travelling to/from fishing grounds, given cetaceans surface for air.

	- Interactions (particularly propeller) could impede the animal's mobility and potentially its ability to breed, and ultimately death (e.g. if a fin is damaged). • entanglement in nets and fishing gear, • exposure to underwater noise from vessels. Given the absence of reported interactions during 2018 and 2020, and the mitigation measures in the fishery (BRDs, closures etc.) the department considers it is unlikely the fishery operation will adversely affect the conservation status of any cetacean species.
Division 4 Listed marine species, Section 265 Minister may accredit plans or regimes	**Comment**
(f) Will the plan, regime or policy require fishers to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing?	**Yes**, there are specific measures in place to mitigate the risk to protected species. The fishery operates in state and Commonwealth waters (under OCS), from the NSW coast seaward to the 4000 m isobath (excluding certain closed areas). The fishery's management strategy does not permit fishers to take protected species, including listed marine species, and all interactions with protected species must be reported. Specific management measures are in place to minimise the fishery's impact on protected species, including through mandatory use of bycatch reduction devices (BRDs, otter trawl net - prawns and fish), spatial closures, and prohibition on mid-water trawling. The management regime for the NSW Ocean Trawl Fishery was accredited in June 2014. The management arrangements for the fishery have not significantly changed since this accreditation was granted However, a new Part 13 accreditation is recommended to account for changes in the fisheries legislative frameworks that have occurred since the management regime was last accredited.
(g) And, is the fishery likely to adversely affect the conservation status of a listed marine species or a population of that species?	**No,** given the relatively low interaction rates and the management arrangements in place such as mandatory BRDs, the fishery is not likely to adversely affect the conservation status of any listed marine species.
Section 303AA Conditions relating to accreditation of plans, regimes and policies	**Comment**

(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The department recommends that the management regime for the NSW Ocean Trawl Fishery be accredited under sections 208A, 222A, 245 and 265.
(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of accreditation is to specify the period, circumstances or condition.	A new Part 13 accreditation is recommended to account for changes in the fisheries legislative frameworks that have occurred since the management regime was last accredited.
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	**N/a** – no conditions on current Part 13 accreditation.

Part 13A – International movement of wildlife specimens

Section 303BA Objects of Part 13A	
(1) The objects of this Part are as follows: (a) to ensure that Australia complies with its obligations under CITES and the Biodiversity Convention; (b) to protect wildlife that may be adversely affected by trade; (c) to promote the conservation of biodiversity in Australia and other countries; (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way; (e) to promote the humane treatment of wildlife; (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.	The management arrangements for the NSW Ocean Trawl Fishery have been assessed as consistent with the general guidance provided in the objects of Part 13A as: • the fishery will not harvest any Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed species • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way • the operation of the NSW Ocean Trawl Fishery is unlikely to be unsustainable and threaten biodiversity within the next three years • the *Environment Protection and Biodiversity Conservation Regulations 2000* do not specify fish as a class of animal in relation to the welfare of live specimens.
Section 303 CG Minister may issue permits (CITES species)	**Comment**
(3) The Minister must not issue a permit unless the Minister is satisfied that: (a) the action or actions specified in the permit will not be detrimental to, or contribute to trade which is detrimental to: (i) the survival of any taxon to which the specimen belongs; or	The Ocean Trawl Fishery catches a number of shark species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), including Thresher sharks and Scalloped, Great and Smooth

	Hammerhead sharks. However, catches are very small (less than one tonne), considered sustainable and these species are not exported from the fishery. As a party to the Convention, Australia must apply all CITES provisions of the EPBC Act to imports and exports of these species. Under these provisions, export of CITES specimens may only occur where a permit supported by a non-detriment finding, has been issued by the CITES Scientific Authority of the country of export. A non-detriment finding is in place for Scalloped, Great and Smooth Hammerhead sharks. Great and Scalloped Hammerhead sharks are protected in NSW and fishers are not permitted to retain specimens caught incidentally. The NSW DPI has not sought export approval for CITES listed species. Therefore, the export of CITES listed specimens is not allowed under this WTO approval. A condition on the WTO declaration for the fishery includes annual reporting requirements which will allow the department to monitor CITES specimens harvested in the fishery. As Part 13A of the EPBC Act incorporates the requirements of CITES, there are no changes to the criteria for export approval, aside from administrative changes to the permits issued. As a result of the listing, specimens of Smooth Hammerhead Shark taken from the wild or bred in captivity, may only be exported under either a single or multiple use CITES permit. There is the potential for the take of Thresher Shark in the Ocean Trawl Fishery. Where there is not a non-detriment finding in place for this species, export from Australia is prohibited.
(ii) the recovery in nature of any taxon to which the specimen belongs; or	The CITES specimens harvested from the fishery which include Thresher and Hammerhead sharks, are not considered to be over fished in NSW. A CITES Non-Detriment Finding (NDF) is in place for Smooth, Scalloped and Great Hammerhead sharks. However, there is no NDF in place for Thresher Sharks - they cannot be exported. As a party to the Convention, Australia must apply all CITES provisions of the EPBC Act to imports and exports of these species. Under these provisions, export of CITES specimens may only occur where a permit supported by a non-

	detriment finding, has been issued by the CITES Scientific Authority of the country of export. A non-detriment finding is in place for Scalloped, Great and Smooth Hammerhead sharks. Great and Scalloped Hammerhead sharks are protected in NSW and fishers are not permitted to retain specimens caught incidentally. The NSW DPI has not sought export approval for CITES listed species. Therefore, the export of CITES listed specimens is not allowed under this WTO approval. Management arrangements in place including the non-detriment finding and the low level of harvest of CITES species in the fishery, assist in ensuring their ecologically sustainable harvest. Should stocks fall below defined reference points, the fishery is conducted such that there is a high degree of probability the stock would recover to ecologically viable stock levels within nominated timeframes.
(iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and	The fishery management strategy contains management measures aimed at reducing the risk to the ecosystem. These include a range of spatial measures including: • ongoing research into the extent and impact of trawling • trawling closures that protect various ocean habitats (e.g. reefs) • adaptive short-term closures to address emerging environmental issues • trawling closures in marine parks and aquatic reserves • fishery closures.
Section 303DC Minister may amend list (non-CITES species)	**Comment**
(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by: (a) doing any of the following: (i) including items in the list; (ii) deleting items from the list; (iii) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; (iv) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or	The department recommends that specimens that are, or are derived from fish or invertebrates harvested in the NSW Ocean Trawl Fishery, as defined in the management regime in force under the *Fisheries Management Act 1994* (New South Wales*)* Fisheries Management (General) Regulation 2019; Fisheries Management (Supporting Plan) Regulation 2006; and Fisheries Management (Ocean Trawl Share Management Plan) Regulation 2006 (New South Wales), but not including (a) specimens that belong to taxa listed under section 209 of the EPBC Act (Australia's List of Migratory Species), or

(b) correcting an inaccuracy or updating the name of a species.	(b) specimens that belong to taxa listed under section 248 of the EPBC Act (Australia's List of Marine Species), or (c) specimens that belong to eligible listed threatened species, as defined under section 303BC of the EPBC Act, or (d) specimens that belong to taxa listed under section 303CA of the EPBC Act (Australia's CITES List), be included in the list of exempt native specimens while the New South Wales Ocean Trawl Fishery is subject to a declaration as an approved wildlife trade operation.
(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes an assessment under Part 10, Divisions 1 or 2	**Not applicable** The fishery is not managed by the Commonwealth. Although there is no strategic assessment under Part 10 of the EPBC Act, the department considers its assessment has taken into account all matters relevant to making an informed decision to amend the list of exempt native specimens to include product taken in this fishery.
(1C) The above does not limit matters that may be considered when deciding to amend LENS.	**Meets** The department has taken into account all matters relevant to making an informed decision to amend the list of exempt native specimens to include product taken in this fishery.
(3) Before amending the LENS, the Minister must consult: (a) other Minister or Ministers as appropriate; and (b) other Minister or Ministers of each State and self-governing Territory as appropriate; and (c) other persons and organisations as appropriate.	**Meets** The submission from the NSW DPI was made available on the department's website from 28 April 2021 until 28 May 2021. Three comments were received. Concerns raised included: the need for stock recovery plans for depleted stocks; the need for updated TEPS data; the need for an updated environmental impact statement; the need for improved observer coverage and reporting of seabirds, sharks (including 'mixed species' identification) rays (elasmobranchs) and Angel sharks; and environmental change.
(5) A copy of an instrument made under section 303DC is to be made available for inspection on the internet.	**Yes**, the instrument made under section 303DC(1)(a) for the fishery will be registered on the Federal Register of Legislation (FRL), and a link to the instrument made available through the department's website. Under subsection 56(1) of the *Legislation Act 2003* (CTH), registration on the FRL meets the requirements for gazettal.

Section 303FN Approved wildlife trade operation	Comment
(2) The Minister may, by instrument published in the *Gazette*, declare that a specified wildlife trade operation is an ***approved wildlife trade operation*** for the purposes of this section.	**Yes**, the instrument to declare the fishery as an approved wildlife trade operation under section 303FN will be registered on the FRL and a link to the instrument made available through the department's website. Under subsection 56(1) of the *Legislation Act 2003* (CTH), registration on the FRL meets the requirements for gazettal.
(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is **satisfied** that: (a) the operation is consistent with the objects of Part 13A of the Act; and	**Meets** The fishery is consistent with Objects of 13A – see above assessment against the Guidelines (Section 3).
(b) the operation will not be detrimental to: (i) the survival of a taxon to which the operation relates; or (ii) the conservation status of a taxon to which the operation relates; and (ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and	**Meets** The fishery will not be detrimental to the survival or conservation status of a taxon to which it relates, nor will it threaten any relevant ecosystem, within the next **three years**, given the management measures currently in place which include: fishery closures for Grey Nurse Shark; prohibition of mid-water trawling; gear improvements to reduce incidental catch; arrangements to reduce interactions and mortality involving Harrison's Dogfish, Endeavour Dogfish, Southern Dogfish and Greeneye Spurdog.
(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and	**Not applicable** The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify Crustacea or fish as a class of animal in relation to the welfare of live specimens.
(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.	**Not applicable** No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.
(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have **regard** to: (a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and	**Meets** The fishery will not have a significant impact on any relevant ecosystem within the next **three years**, given the management measures currently in place, which include the arrangements described above at s303FN 3(b).
(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).	**Meets** The management arrangements that will be employed for the fishery, as outlined in in the assessment against the Guidelines (above) are likely to be effective.

(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have **regard** to: (a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and (b) whether the legislation applies throughout the State or Territory concerned; and (c) whether, in the opinion of the Minister, the legislation is effective.	**Meets** The fishery will be managed under the: • *Fisheries Management Act 1994* • Fisheries Management (General) Regulation 2019 • Fisheries Management (Supporting Plan) Regulation 2006 • Fisheries Management (Ocean Trawl Share Management Plan) • Regulation 2006 The Act under which the fishery is managed applies throughout New South Wales waters. The department considers that the legislation is likely to be effective.
(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, an only if, the operation is an operation for the taking of specimens and: (a) the operation is a commercial fishery.	**Meets** The NSW Ocean Trawl Fishery is a commercial fishery.
(10A) In deciding whether to declare that a commercial fishery is an approved wildlife trade operation for the purposes of this section, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.	No assessment of the NSW Ocean Trawl Fishery has been carried out under Part 10 of the EPBC Act as it is not a Commonwealth managed fishery.
(10B) Subsection (10A) does not limit the matters that may be taken into account in deciding whether to declare that a fishery is an approved wildlife trade operation for the purposes of this section.	**N/a.** Not a Commonwealth fishery and no Part 10 assessment conducted.
Section 303FR Public consultation	**Comment**
(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice: (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal.	**Meets** A public notice which set out the proposal to declare the NSW Ocean Trawl Fishery an approved wildlife trade operation and included the application from the NSW Department of Primary Industries, was released for public comment on 28 April 2021 until 28 May 2021, a total of 21 business days.

(2)	A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.	
(3)	In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.	Three public comments were received on the submission included at Attachment E of the brief. One from the Professional Fishers Association, one from the NSW Seafood Industry Council, and one from AMCS and HSI. Concerns raised, include: the need for stock recovery plans for depleted stocks; the need for updated TEPS data; the need for an updated environmental impact statement; the need for improved observer coverage and reporting of seabirds, sharks (including 'mixed species' identification), rays (elasmobranchs) and angel sharks; environmental change. The department considered all issues raised during public consultation and where necessary has recommended conditions to address any outstanding issues. • A trawl survey was conducted in 2017 to 2020 and evaluated spatial management provision in the fishery, with the potential adaptation of the provisions to address challenges with the Eastern School Prawn harvest and Mulloway bycatch (following floods in northern NSW) and the overall impact on harvest (EKP fishery) was comparatively low. • An evidence-based state-wide threat and risk assessment (TARA) was undertaken in 2016-17 (including assessment of protected species) in the marine estate. Management actions identified in the report, are in progress and include expansion of existing observer programs, and the use of new technologies to improve understanding of threats relating to bycatch, and interactions with TEP species. • NSW DPI are developing tailored harvest strategies for fish species and fisheries in NSW (includes the development of an Ecological Risk Assessment process to apply to all harvest strategies being developed over the next few years). - Currently, the method is being applied to key byproduct species in the fishery (including finfish, elasmobranchs, cephalopods, crustaceans and other invertebrates that make up 95% of the byproduct catch).

	• Recent observer coverage was conducted for fish trawl - northern (2014–2016) and prawn trawl (2017–2019). The final report is currently being prepared. - Data collected from the observer-based survey was used to estimate the total number and circumstances of interactions (including the life status at the time of the interaction) between the fishery and TEPS (results presented in full 2022). The data is currently being incorporated into the ERA of the fishery. • A key objective of the recent observer-based survey was to update sampling designs to provide effective and statistically robust coverage for recording the total number of discards in the NSW OTF, involving a summary of optimised sampling to estimate total discard numbers, specifying the number of trips over an equivalent two-year period. - The NSW DPI expect the analyses will inform the design of future observer-based surveys in the fishery, and monitoring rates of interaction with endemic elasmobranchs. • Observer data collected from the NSW Ocean Prawn Trawl Fishery has been completed in regard to the impact of environmental and vessel operational forces on discarding. • A detailed analysis of data collected from ~ 500 fishing trips (~1600 seabird observation periods) was completed for seabird species and abundance near the fishery's trawlers, and recording numbers of seabird mortality as a direct result of trawling in the fishery, and determine internal and external predictors of seabird vessel - attendance in a component of the Ocean Trawl Fishery. - No catastrophic interactions were observed during wildlife observation sessions (n = 910) in the OTFN and OTP fisheries. • Results of observer-based research determined that formal seabird mitigation measures are not currently required in the fishery. However, NSW DPI and OceanWatch Australia developed Seabird Management Plans for all active vessels in the OTFN (>20 days effort) to identify the main threats posed to seabirds by that vessel and outlining mitigation measures for implementation (as agreed with the endorsement holder).

	NSW DPI also referred to: https://www.marine.nsw.gov.au/knowledge-centre/latest-news/nsw-trawl-fishers-get-on-board-with-seabird-friendly-practices. • The NSW DPI has developed a Climate Change Research Strategy, investing in project and program areas that could support the primary industries sector to adapt to climate change. • The project *Vulnerability Assessment* analyses impacts and adaptation across cropping, extensive livestock, horticulture and viticulture, forestry, and fisheries. The project also analyses the impacts of climate change on 14 related biosecurity risks. • Additionally, environmental change will be considered as part of developing harvest strategies for fish species and fisheries in NSW. The department has considered the public comments and NSW DPI's responses. Conditions will be included to address the need for: recovery/harvest strategies development, and to update and expand ecological risk assessment and risk management, improve data collection, and establish a framework for monitoring and managing fishery performance.
Section 303FT Additional provisions relating to declarations	**Comments**
(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.	A declaration for the NSW Ocean Trawl Fishery will be made under section 303FN.
(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of declaration is to specify the period, circumstances or condition.	The standard conditions applied to commercial fishery wildlife trade operations include: • operation in accordance with the management regime • notifying the department of changes to the management regime, and • annual reporting in accordance with the requirements of the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition.* The wildlife trade operation instrument for the NSW Ocean Trawl Fishery specifies the standard and any additional conditions applied.
(8) A condition may relate to reporting or monitoring.	One of the standard conditions relates to reporting.

(9)	The Minister must, by instrument published in the *Gazette*, revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.	
(11)	A copy of an instrument under section 303FN, or this section is to be made available for inspection on the internet.	The instrument for the NSW Ocean Trawl Fishery made under sections 303FN and the conditions under section 303FT will be registered as a notifiable instrument and made available through the department's website.

Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions		Comment
(1)	Minister must take account of the precautionary principle in making a decision, to the extent that the decision is consistent with other provisions under this Act.	**Meets** Given the management arrangement which include: • limited entry requirements • spatial closures • gear restrictions • commercial catch limits, precautionary measures are considered to be in place to prevent serious or irreversible environmental damage being caused by this fishery.
(2)	The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	

REFERENCES

(DSEWPaC) Department of Sustainability, Environment, Water, Population and Communities 2012 'Marine bioregional plan for the Temperate East Marine Region, Department of Sustainability, Environment, Water, Population and Communities, Canberra ACT, available at http://www.environment.gov.au/marine/marine-bioregional-plans.

Fisheries Research and Development Corporation (FRDC) - Australia's sharks, rays and chimaeras, https://www.fish.gov.au/shark-report-card

Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks* https://www.fish.gov.au/reports/species

Fisheries Research and Development Corporation (FRDC) - Status of Australian Fish Stocks , MULLOWAY (2020), *Argyrosomus japonicus* - Jason Earl (South Australian Research and Development Institute), David Fairclough (Department of Primary Industries and Regional Development, WA), Emily Fisher (Department of Primary Industries and Regional Development, WA), Julian Hughes (New South Wales Department of Primary Industries), Anthony Roelofs (Department of Agriculture and Fisheries, Queensland), available at https://www.fish.gov.au/report/368-Mulloway-2020

Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks,* SILVER TREVALLIES (2020), *Pseudocaranx georgianus, Pseudocaranx sp. "dentex" & Pseudocaranx wrighti, Pseudocaranx dinjerra* - Ashley Fowler (Department of Primary Industries, New South Wales), Rowan C. Chick (Department of Primary Industries, New South Wales), Nils Krueck (Institute for Marine and Antarctic Studies, University of Tasmania), David Fairclough (Department of Primary Industries and Regional Development, Western Australia), Victorian Fisheries Authority (Victorian Fisheries Authority), Timothy Emery (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)), Anthony Roelofs (Department of Agriculture and Fisheries, Queensland), Paul Rogers (South Australian Research and Development Institute), Emily Fisher (Department of Primary Industries and Regional Development, Western Australia), available at https://fish.gov.au/report/278-SILVER-TREVALLIES-2020?jurisdictionId=5.Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks*, EASTERN SCHOOL WHITING (2020), *Sillago flindersi* - Karina Hall (NSW Department of Primary Industry), Timothy Emery (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)), Nils Krueck (Institute for Marine and Antarctic Studies, University of Tasmania), Victorian Fisheries Authority (Victorian Fisheries Authority), available at https://fish.gov.au/report/342-Eastern-School-Whiting-2020?jurisdictionId=5.

Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks* EASTERN KING PRAWN (2020), *Melicertus plebejus* - Anthony Roelofs (Department of Agriculture and Fisheries, Queensland), Matthew Taylor (Department of Primary Industries, New South Wales), available at https://www.fish.gov.au/report/292-Eastern-King-Prawn-2020.

Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks*, GREY MORWONG (2020), *Nemadactylus douglasii* - John Stewart (Department of Primary Industries, New South Wales), Anthony Roelofs (Department of Agriculture and Fisheries, Queensland), Ian Butler (Australian Bureau of Agricultural and Resource Economics and Sciences), available at https://www.fish.gov.au/report/373-Grey-Morwong-2020

Fisheries Research and Development Corporation (FRDC) - *Status of Australian Fish Stocks*, REDFISH (2020), *Centroberyx affinis* - Timothy Emery (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)), Geoffrey Liggins (New South Wales Department of Primary Industries), Nils Krueck (Institute for Marine and Antarctic Studies, University of Tasmania), available at

https://www.fish.gov.au/report/319-Redfish-2020.

NSW Department of Primary Industries - *Status of fisheries resources in NSW 2014 Summary,* available at https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/692646/INT16-161027-DRAFT-Status-fisheries-resources-NSW-2014-152-Summary.pdf

NSW Department Primary Industries - *Climate Change Research Strategy (*2021*),* available at https://www.dpi.nsw.gov.au/climate/climate/about-dpi-climate/climate-change-research-strategy

REVISED CITATIONS

Anthony Roelofs A. and Taylor M., 2020. Eastern King Prawn (2020) *Melicertus plebejus.* https://fish.gov.au/report/292-Eastern-King-Prawn-2020?jurisdictionId=5

Hall K., Emery T., Kruek N. and Victorian Fisheries Authority, 2020. Eastern School Whiting (2020) *Sillago flindersi. https://fish.gov.au/report/342-Eastern-School-Whiting-2020?jurisdictionId=5*

Fowler A., Chick RC., Krueck N., Fairclough D., Victorian Fisheries Authority, Emery T., Roelofs A., Rogers P. and Fisher E., 2020. Silver Trevallies (2020) *Pseudocaranx georgianus, Pseudocaranx sp. "dentex" & Pseudocaranx wrighti, Pseudocaranx dinjerra. https://www.fish.gov.au/report/278-SILVER-TREVALLIES-2020?jurisdictionId=5*

Emery T., Liggins G. and Krueck N., 2020. Redfish (2020) *Centroberyx affinis.* https://www.fish.gov.au/report/319-Redfish-2020?jurisdictionId=5

Stewart J., Roelofs A. and Butler I., 2020. Grey Morwong (2020) *Nemadactylus douglasii. https://www.fish.gov.au/report/373-Grey-Morwong-2020?jurisdictionId=5*