



**Scoping document for a Fishery Improvement Project (FIP) for Pink Ling, Blue Grenadier, Flathead, Leatherjacket and Oreo Dory caught by the Otter Trawl Sub-Fishery from the Commonwealth Trawl Sector (CTS) of the Southern and Eastern Scalefish and Shark Fishery (SESSF)**

**Prepared by WWF Australia, under the WWF-Coles Sustainable Seafood Partnership**

**July 2014**

## TABLE OF CONTENTS

1. EXECUTIVE SUMMARY.....	3
2. INTRODUCTION:.....	4
2.1 <i>Background</i> .....	4
2.2 <i>Fishery Improvement Projects</i> .....	4
2.3 <i>Overview of the Scoping Document</i> .....	5
3. ASSESSMENT, OUTCOMES AND ACTIONS FOR THE CTS.....	6
3.1 <i>Mapping the ESES assessments to MSC Performance Indicators</i> .....	6
3.2 <i>Elements equivalent to best-practice management for the pink ling fishery</i> .....	6
3.3 <i>Assessment against the MSC 80 guidepost to determine outcomes and actions</i> .....	9
4. APPENDIX: ASSESSMENT AGAINST MSC PERFORMANCE INDICATORS .....	11
4.1 <i>Status of retained species</i> .....	11
4.2 <i>Impact on ecosystem structure and function</i> .....	18
4.3 <i>Effective management system</i> .....	36
<i>References and other relevant documents for the fishery</i> .....	43

## 1. EXECUTIVE SUMMARY

Several species are supplied to Coles from the Commonwealth Trawl Sector (CTS) of the Southern and Eastern Scalefish and Shark Fishery (SESSF). The fishery is managed by the Australian Fisheries Management Authority (AFMA) in collaboration with the peak industry body the South East Trawl Fishing Industry Association (SETFIA). Pink ling, blue grenadier, flathead, leatherjacket and oreo dory are harvested in this large multi-species, multi-jurisdictional fishery which requires complex arrangements to manage a diverse range of issues. Both industry and Government have invested significantly in research and development.

These species were identified as high or medium need for improvement when assessed against the Ecological Sustainability Evaluation of Seafood (ESES), as part of Coles' and WWF Australia's Responsible Seafood partnership. Coles would like to work with relevant stakeholders in the CTS to address issues needing further improvement. The recognised vehicle for this is a formal Fisheries Improvement Project (FIP).

A FIP is defined as a multi-stakeholder effort to improve a fishery. FIPs are unique because they utilize the power of the private sector to incentivize positive changes in the fishery towards sustainability. FIP participants may include stakeholders such as producers, NGOs, fishery or aquaculture managers, government, and members of the supply chain. The ultimate goal of a FIP is to have the fishery performing at a level consistent with an unconditional pass of the Marine Stewardship Council (MSC) standard.

A FIP involves three stages: (1) Scoping: Identify all stakeholders and agree on the environmental issues that need to be addressed by the project (2) Action Planning: Bring together all stakeholders to develop a plan to transition the fishery to the required standards; and (3) Implementation: Implement the plan and report on its progress.

This paper is part of Stage 1, providing an assessment of the fishery against the standards of the MSC. It aims firstly to identify the main management outcomes and potential actions required to attain an unconditional MSC pass. The outcomes and actions are documented to promote thought and discussion prior to Stage 2 (FIP Action Planning) which requires stakeholders to develop a plan of agreed actions for the fishery in a collaborative forum.

The key outcomes for the CTS identified in this document are provided below.

- Rebuild the eastern stock of pink ling toward target biomass levels.
- Continue to develop approaches to improve model certainty for pink ling.
- Conduct an independent Consequence Analysis and Productivity Susceptibility Analysis to ensure that leatherjacket are harvested sustainably.
- Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.
- Continue to reduce the discrepancy between fishery logbook and independent estimates of ETPs interactions.
- Continue to mitigate the impact of the trawl sector on ETP species.
- Ensure sustainability of migratory species.

## **2. INTRODUCTION:**

### **2.1 Background**

The Otter Trawl sub-fishery of the Commonwealth Trawl Sector (CTS) targets species including pink ling, blue grenadier, flathead, leatherjacket and oreo dory using otter trawl gear from Barrenjoey Point (NSW) to Cape Jervis (South Australia), including Tasmania. It is considered that there are two separate stocks of pink ling, east and west of Bass Strait while other species are treated as single stocks.

As it is an important source of seafood for Coles and its suppliers, the CTS was independently assessed in 2011 against the Ecological Sustainability Evaluation of Seafood (ESES) criteria, developed by WWF Australia, as a part of the Coles Sustainable Seafood Program. The ESES is a business to business tool that addresses similar standards to those of Marine Stewardship Certification (MSC) with regard to best practice fishery management.

The ESES assessment documents the progress in fishery management that has been made by the Australian Fisheries Management Authority (AFMA) and the South East Trawl Fishing Industry Association (SETFIA) since the inception of the fishery. The ESES identified several criteria that would not meet the standards of MSC. As a priority fishery, Coles would like to work with relevant stakeholders in the fishery to the address issues needing improvement.

### **2.2 Fishery Improvement Projects**

To assist fisheries that want to further improve their environmental sustainability and seafood buyers that want more sustainable sourcing, an approach termed Fishery Improvement Project (FIP) was developed collaboratively amongst fisheries, governments, private sector partners, NGOs, academics and consultants. FIPs are defined as a multi-stakeholder effort to improve a fishery and they are unique because they utilize the power of the private sector to incentivize positive changes in the fishery towards sustainability. FIP participants may vary depending on the nature of the fishery and the FIP, and may include stakeholders such as producers, members of the supply chain, NGOs, fishery or aquaculture managers, government, and industry groups. The ultimate goal of a FIP is to create measurable change and ensure the long-term sustainability of a fishery. This is achieved by assisting the fishery to perform at a level consistent with an unconditional pass of the MSC standard.

A FIP includes processes to identify sustainability issues in a fishery, implement improvements, and report on results. This is defined by a three stage process: (1) Scoping, (2) Action Planning, and (3) Implementation.

During the scoping phase, stakeholders come together to assess the fishery's performance against the MSC standard, identify potential areas of concern, and document problems to be resolved. The scoping phase includes three critical milestones:

1. Stakeholder Mapping and Engagement - The stakeholder mapping process is used to identify the parties who can contribute to the project's success, potentially including government representatives, industry (fishers, processors and groups etc.), NGOs, and the scientific community.
2. Product/Species Pre-Assessment - A pre-assessment is to be completed to determine areas for improvement. The Ecological Sustainability Evaluation of Seafood (ESES) assessment provides the basis for the pre-assessment.
3. FIP Scoping Document (this document) - This scoping document reports on the outcomes of the pre-assessment and includes potential strategies for what the

fishery might do to meet the MSC standard. The scoping document is shared with the fishery stakeholders involved in the development of the FIP.

The FIP Action Plan phase includes the following critical milestones:

- FIP Stakeholder Meeting to develop a Draft Action Plan - The purpose of the stakeholder meeting is for the stakeholders to work together to develop a list of new or existing activities that will help the fishery meet the standard for each issue in need of improvement, as identified in the scoping document. A Draft Action Plan is developed at the meeting.
- Finalise FIP Action Plan - As a follow-up to the stakeholder meeting, the FIP Action Plan is finalised and will include a list of activities, responsible parties, timeframes, resources including proposed budget and performance indicators. The FIP Action Plan is audited by a third party consultant to verify the ability of these plans to transition the fishery to a MSC standard within the timeframes described.

In the final phase, FIP stakeholders begin to implement the FIP Action Plan, track progress against goals, and fine-tune the FIP Action Plan based on specific circumstances and results. The implementation and tracking milestones include:

- Implementing the FIP Action Plan - Once the FIP Action Plan is complete, the next step is to begin implementing the activities. It is important to coordinate among the fishery stakeholders and the FIP Consultant to ensure that each activity is effectively completed.
- Annual FIP Review Meetings - As part of the monitoring and review of the FIP, a FIP review meeting with fishery stakeholders is held to assess the annual progress of the fishery against the MSC standard.
- Tracking and Reporting on Progress - The key goals of tracking are to verify that the FIP is making progress against the milestones laid out in the FIP Action Plan and ensure the work is as transparent as possible. Improvement projects will be tracked so that they can credibly and publicly report on: actions taken by the project to encourage improvements; the impact of these actions in terms of changes in fisheries policy, management, and fishing practices, and; results on the water.

### **2.3 Overview of the Scoping Document**

This scoping document follows a two-step process to establish a path for FIP development.

- 1) Mapping the ESES to MSC principles.
- 2) Assessing the fishery against the MSC 80 guidepost to determine outcomes and actions.

Mapping the ESES outcomes to the MSC criteria is a screening process to utilise information gathered in the pre-assessment phase to identify areas of the fishery that are already managed at the MSC standard and thus do not need to be included in the FIP. All MSC criteria that are identified as in need of improvement are then moved into step two where they are individually assessed against the MSC standards. This process identifies the outcomes that are required for the fishery to achieve MSC standards. For each outcome, a set of possible actions are identified that can be considered by all stakeholders in the development of the Action Plan.

### 3. ASSESSMENT, OUTCOMES AND ACTIONS FOR THE CTS

For the purposes of the ESES assessment and this FIP the fishery is defined as:

Fishery:	Otter trawl sub-fishery of the Commonwealth Trawl Sector (CTS)
CAAB names:	Pink Ling (37 228002), Smooth Oreo Dory (37 266003), Flathead (37 296000), Ocean Leatherjacket (37 37465006), Blue Grenadier
Scientific names & Authority:	Pink Ling ( <i>Genypterus blacodes</i> , Forster, 1801), Smooth Oreo Dory ( <i>Pseudocyttus maculatus</i> , Gilchrist, 1906), Tiger flathead ( <i>Platycephalus richardsoni</i> ) Castelnau, 1872; Sand flathead ( <i>P. bassensis</i> ) Cuvier, 1829; Southern blue-spotted flathead ( <i>P. specularis</i> ) Klunzinger, 1872; Blue spotted flathead ( <i>P. caeruleopunctatus</i> ) McCulloch, 1922; Toothy flathead ( <i>Neoplatycephalus aurimaculatus</i> ) Knapp 1987, Ocean Leatherjacket ( <i>Nelusetta ayraudi</i> )
Gear type:	Otter-trawl
Management Authority:	Australian Fisheries Management Authority (AFMA)

#### 3.1 Mapping the ESES assessments to MSC Performance Indicators

The MSC standards are assessed against 31 Performance Indicators (PI) that are categorised into three Principles (see Table 1 and Figure 1). For the purpose of FIP development, the outcomes from the ESES assessment for pink ling (high, medium or low risk for each ESES criteria) can be mapped against 27 MSC PI to determine which MSC PI require further consideration for FIP development (Table 1 and Figure 1).

MSC PI that were ranked as an overall low risk in the corresponding ESES criteria can be considered as achieving the equivalent of at least an 80 score in the MSC assessment (i.e. a pass mark). These PI, summarised in section 3.2, need not be considered when developing the FIP. All MSC PI ranked as an overall high or medium risk are considered in STEP 2 (section 3.3), as well as the four MSC PI that are not assessed in the ESES assessments (i.e. 3.1.2, 3.2.1, 3.2.2 and 3.2.5). Thus, 22 of the 31 MSC PI were assessed at STEP 2.

#### 3.2 Elements equivalent to best-practice management for the pink ling fishery

MSC PI that receive a score of 80 or more attain an unconditional pass of the MSC standards and are considered global best practice for ecologically sustainable management. Of the 27 MSC PI assessed, 11 were low risk and were thus considered as the equivalent of an 80 score or more (Table 1 and Figure 1). It should also be noted that many individual criteria in P1 were also scored low risk for grenadier, flathead and oreo dory.

This positive outcome for the fishery reflects the significant investment in research and development made by AFMA and SETFIA to underpin the management of the SSSF fishery. These programs includes robust stock assessment for many target species, application of the Commonwealth Ecological Risk Assessment for the Effects of Fishing (ERAEF) framework, sound understanding of the impacts of the fishery on habitats and the associated marine ecosystem, legislated temporal and spatial closures, and participative and transparent management processes.

Table 1. Risk rankings for ESES assessment criteria (high, medium or low risk) for pink ling with associated MSC Performance Indicators for the CTS.

MSC principles, Performance Indicators (PI) and description			Associated ESES criteria	pink ling	blue grenadier	flathead	leather jacket	oreo dory	Overall risk
Principle	PI	Description							
Stock status	1.1.1	Stock status prevents recruitment overfishing	2.1; 2.2	High; High	Low; Low	Low; Low	Med; Med	Med; Med	High; High
	1.1.2	Reference Points are appropriate	4.2	Medium	Low	Low	High	Low	High
	1.1.3	If stock is depleted, is there recovery?	2.1; 2.2	High; High	Low; Low	Low; Low	Med; Med	Med; Med	High; High
	1.2.1	Robust and precautionary harvest strategy	4.2	Medium	Low	Low	High	Low	High
	1.2.2	Effective harvest control rules	4.2	Medium	Low	Low	High	Low	High
	1.2.3	Information to support the harvest strategy	1.1; 2.4	Low; Low	Low; Low	Low; Low	Med; Med	Low; Low	Med; Med
	1.2.4	Adequate assessment of stock status	2.3	Low	Low	Low	High	Medium	High
Environment	2.1.1	No risk to target species	3.1	High	High	High	High	High	High
	2.1.2	Strategy in place to manage retained species	4.4	Medium	Medium	Medium	Medium	Medium	Medium
	2.1.3	Adequate information on retained species	1.2	Medium	Medium	Medium	Medium	Medium	Medium
	2.2.1	No risk to bycatch species	3.2	Medium	Medium	Medium	Medium	Medium	Medium
	2.2.2	Strategy in place to manage bycatch species	4.4	Medium	Medium	Medium	Medium	Medium	Medium
	2.2.3	Adequate information on bycatch species	4.6	Low	Low	Low	Low	Low	Low
	2.3.1	Adequate protection of ETPs species	3.4	Medium	Medium	Medium	Medium	Medium	Medium
	2.3.2	Strategy in place to manage ETPs interactions	4.4	Medium	Medium	Medium	Medium	Medium	Medium
	2.3.3	Adequate information for management of ETPs	1.3	Low	Low	Low	Low	Low	Low
	2.4.1	No serious harm to habitats	3.3	Medium	Medium	Medium	Medium	Medium	Medium
	2.4.2	Strategy in place to manage habitat impacts	4.5	Low	Low	Low	Low	Low	Low
	2.4.3	Adequate information on habitat impacts	4.6	Low	Low	Low	Low	Low	Low
	2.5.1	Protects ecosystem structure and function	3.5	Medium	Medium	Medium	Medium	Medium	Medium
	2.5.2	Measures to manage ecosystem impacts	4.5	Low	Low	Low	Low	Low	Low
2.5.3	Adequate knowledge of ecosystem impacts	4.6	Low	Low	Low	Low	Low	Low	
Management	3.1.1	Legislated management system	4.1	Low	Low	Low	Low	Low	Low
	3.1.2	Effective consultation with all stakeholders	N/A						
	3.1.3	Precautionary management with long-term obj.	4.1	Low	Low	Low	Low	Low	Low
	3.1.4	Management has economic and social incentives	4.1	Low	Low	Low	Low	Low	Low
	3.2.1	Clear, specific management objectives	N/A						
	3.2.2	Eff. management strategies to achieve objectives	N/A						
	3.2.3	Adequate compliance system	4.7	Low	Low	Low	Low	Low	Low
	3.2.4	Appropriate research plan	4.3	Low	Low	Low	Low	Low	Low
	3.2.5	Evaluation and review of management objectives	N/A						

N/A Not assessed

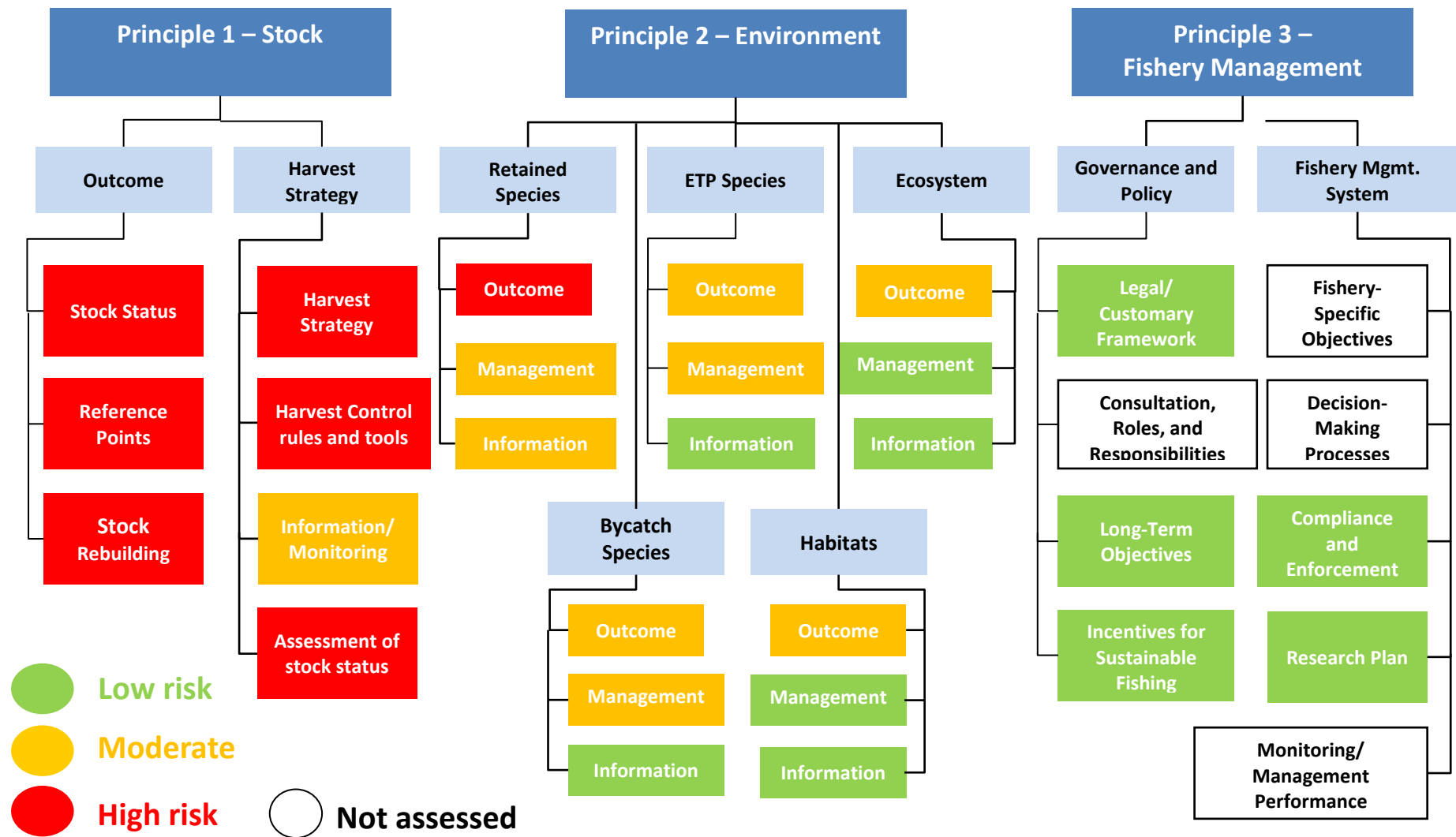


Figure 1. Risk outcomes for the 31 Performance Indicators under the three key MSC principles for the Commonwealth Trawl Sector. Note that the red squares in P1 primarily relate to the bycatch species leatherjacket which are not considered under the Tier 1 assessment process.



### 3.3 Assessment against the MSC 80 guidepost to determine outcomes and actions

All MSC PI from Table 1 were addressed individually. Information used in this process included relevant information from the ESES assessment, and any recent information available from government and the industry. By assessing each criterion individually, outcomes that are required for the fishery to meet MSC standards were identified. To address each outcome, a set of specific actions is required, with a list of potential actions provided in this scoping document that aim to promote discussion about the best ways to achieve the outcomes.

Table 2 provides a summary of the MSC PI assessed through this process with identification of the PI that require specific actions to reach the MSC 80 guidepost. Table 3 documents the outcomes and suggested actions for stakeholders to consider when developing a FIP Action Plan. The detailed assessments, outcomes and actions for each criterion in Table 2 are provided in Section 4: Appendix.

Table 2: MSC PI to be addressed during development of the FIP for CTS.

Principle	MSC Principles, PI and Description		Actions required
	PI	Description	
Status of retained species	1.1.1	Stock status prevents recruitment overfishing	Yes
	1.1.2	Reference Points are appropriate	No
	1.1.3	If stock is depleted, is there recovery?	Yes
	1.2.1	Robust and precautionary harvest strategy	No
	1.2.2	Effective harvest control rules	No
	1.2.3	Information to support the harvest strategy	Yes
	1.2.4	Adequate assessment of stock status	No
Impact on ecosystem structure and function	2.1.1	No risk to target species	Yes
	2.1.2	Strategy in place to manage retained species	Yes
	2.1.3	Adequate information on retained species	No
	2.2.1	No risk to bycatch species	Yes
	2.2.2	Strategy in place to manage bycatch species	No
	2.2.3	Adequate information on bycatch species	Yes
	2.3.1	Adequate protection of ETPs species	Yes
	2.3.2	Strategy in place to manage ETPs interactions	Yes
	2.3.3	Adequate information for management of ETPs	Yes
	2.4.1	No serious harm to habitats	No
	2.4.2	Strategy in place to manage habitat impacts	No
	2.4.3	Adequate information on habitat impacts	No
	2.5.1	Protects ecosystem structure and function	No
	2.5.2	Measures in place to manage ecosystem impacts	No
2.5.3	Adequate knowledge of ecosystem impacts	No	
Effective management system	3.1.1	Legislated management system	No
	3.1.2	Effective consultation with all stakeholders	No
	3.1.3	Precautionary management with long-term objectives	No
	3.1.4	Management has economic and social incentives	No
	3.2.1	Clear, specific management objectives	No
	3.2.2	Effective management strategies to achieve objectives	No
	3.2.3	Adequate compliance system	No
	3.2.4	Appropriate research plan	No
	3.2.5	Evaluation and review of management objectives	No

N/A Not assessed

Table 3: Outcomes and actions for PI addressed in the FIP.

<p><u>Outcome:</u> Rebuild the eastern stock of pink ling toward target biomass levels. Continue to develop approaches to improve model certainty for pink ling. Demonstrate the sustainable harvest of leatherjacket.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> <li>• Develop arrangements that ensure catch limits (within a global TAC) are not exceeded for the East and West stocks of pink ling.</li> <li>• Continue fishery-independent surveys to reduce statistical reliance on commercial CPUE data in the pink ling assessment.</li> <li>• Further increase the accuracy of logbook reporting through the eLearning initiative, particularly regarding discarding.</li> <li>• Conduct an independent Consequence Analysis and Productivity Susceptibility Analysis to ensure that leatherjacket are being harvested sustainably.</li> </ul>
<p><u>Outcome:</u> Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> <li>• Conduct a Spawning Potential Ratio analyses to aid assessment of stock status of blue warehou.</li> <li>• Implement performance measures to assess and minimise targeting of blue warehou and eastern gemfish while stocks are overfished.</li> <li>• For upper-slope dogfish (USDs), ensure the recently updated recovery strategy is being implemented successfully (i.e. new network of 10 spatial closures; regulated no retention of USDs).</li> <li>• Obtain improved information on the capture of Bight Skate, underpinned by education of fishers in identification of elasmobranchs.</li> </ul>
<p><u>Outcome:</u> Continue to reduce the discrepancy between fishery logbook and independent estimates of ETPs interactions. Continue to mitigate the impact of the trawl sector on ETP species. Ensure sustainability of migratory species.</p> <p><u>Actions:</u></p> <ul style="list-style-type: none"> <li>• Continue to improve education of fishers on the importance of ETP reporting to continue to reduce the discrepancy between logbook and independent reporting rates of ETP interactions.</li> <li>• Obtain an improved understanding of interactions with seabirds.</li> <li>• Continue to develop and implement mitigation strategies to reduce interactions with seabirds</li> </ul>

## 4. APPENDIX: ASSESSMENT AGAINST MSC PERFORMANCE INDICATORS

### 4.1 Status of retained species

**MSC criteria 1.1.1: The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing**

PI 1.1.1	Justification/Rationale		
A	It is highly likely that the stock is above the point where recruitment would be impaired.		
B	The stock is at or fluctuating around its target reference point.		
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Target ref. point	[e.g. Bmsy]	[Include value specifying units. eg 100,000t total stock biomass]	[Include current stock status in the same units as the reference point e.g. 90,000/Bmsy=0.9]
Limit ref. point	[e.g. Blim]	[Include value specifying units. eg 50,000t total stock biomass]	[Include current stock status in the same units as the reference point e.g. 90,000/Blim=1.8]

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

#### *Pink Ling*

This Performance Indicator has two Scoring Issues. The fishery is likely to meet the first Scoring Issue, but is not likely to meet the second Scoring Issue.

Stock status of pink ling in the CTS is assessed using a population model that was first developed in 2002 (Klaer 2003). The primary output of the model is relative biomass compared to unfished levels (i.e. % unfished), which provides a sound basis for assessment against the two scoring issues. The model has undergone a number of refinements since 2003, with each change usually resulting in consequential changes to the estimate of relative biomass and hence the interpretation of stock status. This has eroded confidence in the model outputs over time, particularly from industry.

Nevertheless, in 2013 the Resource Assessment Group (RAG) agreed on an updated stock assessment model for Pink Ling that produced biomass estimates of 58% unfished for the west stock indicating that it is a) highly likely it is above a point where recruitment would be impaired and b) likely that the west stock is at or above its target level. For the East stock, biomass estimates were 26% unfished with 50% confidence, and there was 85% certainty that the stock was above B20%. This fits with the MSC definition of highly likely (80% probability) and thus the East stock meets the first Scoring Issue.

The second Scoring Issue for the East stock regards the likelihood that the fishery is currently operating around the target reference level. For this fishery the target reference level is BMEY and the modelling outcomes do not support that the fishery is currently operating around BMEY. Further, the current model outputs that suggest that the fishery is operating around 25% virgin biomass suggests that the fishery is likely to be operating well

below BMSY (i.e. B40%). Thus the fishery does not meet the second Scoring Issue for the East stock.

There is some suggestion that commercial CPUE trends do not reflect changes in abundance of pink ling and this has affected model outputs. The primary reason put forward for this position is that industry believes the abundance of pink Ling has increased in recent years but trends in commercial CPUE do not reflect this because management and targeting behaviours have been modified. There needs to be further investment in approaches to improve certainty in the modelling of pink ling stocks.

#### *Blue Grenadier*

Assessment of the blue grenadier stock (it is considered as one stock only) indicated that biomass was well above the target limit reference in 2012 and 2014. Thus, despite the year round fishery accessing only juvenile blue grenadier, there are no issues with blue grenadier stocks and thus no actions are required.

#### *Flathead*

Assessment of flathead stocks indicates that flathead remains near to its target level (48%) and is highly likely to be above MSY. There are no actions required for flathead.

#### *Oreo Dory*

Stock assessments for oreo dory indicate that the fishery is highly likely to be above levels at risk of recruitment and it is also likely to be around the target reference point. Whilst there is noted uncertainties in the use of commercial CPUE data for assessment of oreo dory, this is balanced out by the fact that the TAC (and subsequent catch) has been set at levels well below the calculated RBC and therefore the likelihood of risk of being overfished is considered negligible (i.e. highly likely to be at or above target reference levels). There are no actions required for oreo dory.

#### *Leatherjacket*

Leatherjacket is considered as bycatch species in the CTS but they are retained by most vessels. Due to their low value they are not targeted directly by fishers and thus their harvest is incidental. They do occur in high abundances, particularly in association with flathead trawling grounds.

Given their value and the fact they are not targeted, there is no stock assessment for leatherjacket and they are not a quota species. The primary data source is commercial CPUE, which has remained steady in recent years. However there is considerable uncertainty in these data because it is believed that large volumes of leather jacket are discarded at sea and not recorded by fishers.

Given the paucity of data for this species, and given their low economic value and status as a non-target species, the MSC risk based framework (RBF) is an appropriate tool for determining the risk that the fishery poses to this species.

#### Related outcome required to meet the 80 guidepost:

Rebuild the eastern stock of pink ling toward target biomass levels.

Continue to develop approaches to improve model certainty for pink ling.

Demonstrate the sustainable harvest of leatherjacket.

Actions to attain the 80 guidepost:

- Develop arrangements that ensure catch limits (within a global TAC) are not exceeded for the East and West stocks of pink ling.
- Continue fishery-independent surveys to reduce statistical reliance on commercial CPUE data in the pink ling assessment.
- Further increase the accuracy of logbook reporting through the eLearning initiative
- Conduct an independent Consequence Analysis and Productivity Susceptibility Analysis to ensure that leatherjacket are being harvested sustainably.

**MSC criteria 1.1.2: Limit and target reference points are appropriate for the stock**

PI 1.1.2	Justification/Rationale
A	Reference points are appropriate for the stock and can be estimated.
B	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.
C	The target reference point is such that the stock is maintained at a level consistent with $B_{MSY}$ or some measure or surrogate with similar intent or outcome.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion as it is likely to meet each of the three Scoring Issues at the 80 guidepost.

The reference points for the fishery are established against the outputs from the biological models for pink ling, flathead, oreo dory and blue grenadier (e.g. see Tuck 2011). The model estimates the levels of current biomass relative to the virgin or unfished levels. This is an appropriate tool for developing reference points for the fishery.

The reference points are appropriate as they are based on the Commonwealth Harvest Strategy Guidelines (DAFF 2012). The Limit reference point is set at 20% of unfished levels, with biomass levels below this being considered as overfished. This is above the level that there is an appreciable risk of impairing reproductive capacity. The target levels are set at 48% of unfished levels, which is a proxy measure for BMEY. This is more conservative than the 80 scoring guidepost which requires target reference points to be maintained at  $B_{MSY}$  or equivalent. These levels are appropriate for a higher order trophic level species such as pink ling.

*Leatherjacket*

While there are no reference points for the harvest of leatherjacket, if this species is assessed through the MSC RBF and passes the CA and PSA analysis, this criteria is automatically given an 80 score (i.e a pass mark).

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 1.1.3: Where the stock is depleted, there is evidence of stock rebuilding**

PI 1.1.3	Justification/Rationale
A	Where stocks are depleted rebuilding strategies are in place.
B	A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.
C	There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

Pink Ling is the only one of these species that is likely to have a depleted stock. The rebuilding framework is appropriate to meet the second criterion. While it is possible that the stocks have been rebuilding in recent years, there remains considerable uncertainty around the stock assessment model so there is not sufficient evidence that the stocks have rebuilt.

Table: Biomass projections for pink ling.

Annual catch (t)	$B_{2015}/B_0$	$B_{2020}/B_0$	$P(B_{2015} > B_{2013})$	$P(B_{2020} > B_{2013})$	$P(B_{2015} < 0.2)$	$P(B_{2020} < 0.2)$	Rebuild year to $B_{48}$
0	0.33	0.56	1.00	1.00	0.01	0.00	2019
250	0.30	0.44	0.98	0.99	0.04	0.00	2022
300	0.30	0.42	0.96	0.99	0.05	0.01	2024
350	0.29	0.39	0.93	0.97	0.07	0.02	2026
400	0.28	0.37	0.88	0.93	0.09	0.04	2029
450	0.28	0.35	0.82	0.90	0.11	0.07	2034
500	0.27	0.32	0.75	0.82	0.14	0.11	2047

*Leatherjacket*

If this species is assessed through the MSC RBF and passes the CA and PSA analysis, this criteria is automatically given an 80 score (i.e a pass mark).

Related outcome required to meet the 80 guidepost:

Rebuild the eastern stock of pink ling toward target biomass levels.

Continue to develop approaches to improve model certainty for pink ling.

Actions to attain the 80 guidepost:

- Develop arrangements that ensure catch limits (within a global TAC) are not exceeded for the East and West stocks of pink ling.
- Continue fishery-independent surveys to reduce statistical reliance on commercial CPUE data in the pink ling assessment.
- Further increase the accuracy of logbook reporting through the eLearning initiative

**MSC criteria 1.2.1 There is a robust and precautionary harvest strategy in place**

PI 1.2.1	Justification/Rationale
A	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.
B	The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion. The fishery is likely to achieve both Scoring Issues.

The Southern and Eastern shark and scalefish fishery has a formal harvest strategy that is in line with the Commonwealth policy (DAFF 2012). The harvest strategy can be found at: <http://www.afma.gov.au/managing-our-fisheries/harvest-strategies/southern-and-eastern-scalefish-and-shark-fishery-harvest-strategy/#reference>

The harvest strategy has biological, socio-economic and ecosystem objectives. The harvest strategy framework uses a tiered approach to establishing reference points for various target species depending on the amount of data available and the level of assessment for each species. The framework establishes the management actions that are required if performance measures are not met. The fishery is likely to achieve the first Scoring Issue because the harvest strategy is responsive to the stock and works together toward achieving the objectives.

Although there are issues regarding rebuilding the stocks (see 1.1.3 above), the decision to recommend TACs that are not commensurate with the RBCs from the model is still made within the guidelines of the Harvest Strategy. Thus this Scoring Issue is likely to be met.

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 1.2.2: There are well defined and effective harvest control rules in place**

PI 1.2.2	Justification/Rationale
A	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
B	The selection of the harvest control rules takes into account the main uncertainties.
C	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

The fishery achieves these Scoring Issues as the harvest strategy defines harvest control rules that enable the determination of RBCs for any given level of relative biomass. If the stock is overfished (i.e. %unfished <20%) then fishing mortality is set at zero. In practical terms this is applied as a target catch of zero. For example, some pink ling will be caught as byproduct regardless because it is a multi-species fishery. If the relative biomass is >35% unfished then fishing mortality is set at the maximum value (i.e. the mortality to achieve the target biomass of 48% unfished). If the relative biomass is between 20-35% unfished, an equation is used to derive the fishing mortality rate based on a diminishing percentage of the maximum fishing mortality as biomass approaches the LRP (20%). These values consider uncertainty appropriately.

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 1.2.3: Relevant information is collected to support the harvest strategy**

PI 1.2.3	Justification/Rationale
a	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
b	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.
c	There is good information on all other fishery removals from the stock.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

*Pink ling*



The information available for the pink ling harvest strategy is sound, with one exception of a need to improve knowledge on discard rates. In recent years, catch caps have been applied in the fishery to ensure that catches are maintained within sustainable limits and this has resulted in increased levels of discarding from the fishery. While there is provision to report on discarding in commercial logbooks, it is suggested that reporting rates significantly underestimate the extent of pink ling discarding.

Underestimation of discarding reduces the estimates of commercial CPUE for this species but it also reduces the total catch. While it is difficult to estimate what difference improved knowledge of these two parameters would have on stock assessment outputs (without running the model), it must be noted that the current harvest strategy has provided estimates of recommended biological catches that have resulted in recovery of pink ling biomass in recent years. Therefore it is reasonable to suggest that criteria a) and b) above are met i.e. information is sufficient for the harvest strategy, however an action on discarding is required for c) regarding improved knowledge of all removals from the stock.

#### *Blue grenadier*

Information on blue grenadier is sufficient to meet SG80 for this criterion. Knowledge of life history, stock structure and other information is good and would meet sections (a) and (b). Blue grenadier is also caught in the Great Australian Bight Trawl Sector. Information from this fishery is good and included in stock assessment modelling.

#### *Flathead*

Life history of the most common flathead species is well understood, as are fishery removals and fleet composition. Stock structure of flathead is still poorly understood, however using a single stock in management practices has allowed for proper implementation of the harvest strategy. Data and knowledge of flathead are sufficient to meet SG80 for this criterion.

#### *Oreo Dory*

Information on stocks of oreo dory mainly consists of CPUE as an indicator of biomass. The robustness of using standardised CPUE remains uncertain because it is a highly aggregative, multispecies stock. Given the paucity of appropriate data for stock assessment, the harvest strategy has been established very conservatively, with a combination of extensive deepwater closures (>50% of the historic area fished) and conservative RBCs. Therefore although there is scant information for this species, it is likely to be sufficient for the current harvest strategy approach.

#### *Leatherjacket*

There is sufficient information to assess leatherjacket under the Risk Based Framework. If the species fails to meet the 80 guidelines from the RBF, additional information will be required to conduct an assessment for the species that will satisfy P1.1.1 using the default assessment tree.

#### Related outcome required to meet the 80 guidepost:

Continue to develop approaches to improve model certainty for pink ling.

Actions to attain the 80 guidepost:

- Further increase the accuracy of logbook reporting through the eLearning initiative, particularly regarding discarding.

**MSC criteria 1.2.4: There is an adequate assessment of the stock status**

PI 1.2.4	Justification/Rationale
a	The assessment is appropriate for the stock and for the harvest control rule.
c	The assessment takes uncertainty into account.
e	The assessment of stock status is subject to peer review.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Stock assessments in the fishery are conducted based on the data quality and availability. Tier 1 assessments are quantitative and model-based, and are used for those stocks that have the most data. Tier 3 assessments primarily involve analyses of catch age or size alongside maturity and selectivity information. Tier 4 assessments are based on catch and effort data. These tiers generate a recommended biological catch (RBC) that is intended to move stock towards the target reference point. TACs are determined from these RBCs through a set of rules outlined in the HSP. TACs become increasingly precautionary as they move from Tier 1 to 3 to 4 to reflect the data input in each tier. Stock assessments, RBCs and TACs are reviewed by the SESSF Resource Assessment Group.

*Leatherjacket*

If this species is assessed through the MSC RBF and passes the CA and PSA analysis, this criteria is automatically given an 80 score (i.e a pass mark).

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**4.2 Impact on ecosystem structure and function**

**MSC criteria 2.1.1: The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species**

PI 2.1.1	Justification/Rationale
a	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).
c	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

The fishery retains 28 target species and 95 byproduct species.

Quantitative stock assessments are conducted annually for most of the main retained species. For all other retained species, the risk of overfishing was determined through the Ecological Risk Assessment for the Effects of Fishing (ERAEF).

There are several main retained species that are currently considered overfished or at risk of overfishing (i.e. not highly likely to be within biologically based limits). These include Eastern gemfish, Blue warehou, and School shark.

*Eastern gemfish*

Biomass is stable but at very low abundance; the stock is likely to have collapsed. Recommendation is to keep the quota at 100t incidental catch. There is still likely to be low levels of targeting which means the current strategy is likely to hinder any potential stock recovery.

*Blue Warehou*

Recovery strategy was published in 2008. Blue warehou was to be dealt with as a Tier 4 species, with a target of BMEY (B48%) and an interim target of BMSY (B40%). As the latest assessment suggested biomasses in the east and west of 15% and 17%, respectively, a zero target catch policy was implemented.

RAG minutes Sep 2013 – Rebuilding strategy is due for review in 2014 and the Minister is due to make a decision on the listing of Blue Warehou as a threatened species by September 2014.

Many problems keep arising when trying to determine an effective strategy for blue warehou stock recovery. In the absence of a reliable understanding of stock status, it cannot be argued that the partial strategy is unlikely to inhibit stock recovery.

*School shark*

While school shark are considered overfished, it can be argued that the catch from the otter trawl fishery is not likely to hinder recovery of the species. School shark catch from the otter trawl subfishery was 16 t average for the last 3 years. This is less than 10% of the total catch of the species in the south east.

Related outcome required to meet the 80 guidepost:

Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.

Actions to attain the 80 guidepost:

Conduct a Spawning Potential Ratio analysis to aid assessment of stock status of blue warehou.

Implement performance measures to assess and minimise targeting of blue warehou and eastern gemfish while stocks are overfished.

**MSC criteria 2.1.2: There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species**

PI 2.1.2	Justification/Rationale
A	There is a partial strategy in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits or to ensure the fishery does not hinder their recovery and rebuilding.
B	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.
C	There is some evidence that the partial strategy is being implemented successfully.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion. The fishery is likely to meet the first two Scoring Issues but not the third.

There are two components to the AFMA strategy to maintain the stock status of retained species. The first is the process to determine the likelihood of overfishing, and the second is the Total Allowable Catch Quotas that are used to maintain exploitation rates to acceptable levels. These tools are appropriate for ensuring the status of retained species and thus the first two Scoring Issues are likely to be met. However the evidence suggests that for some species low levels of targeting may be occurring which may be inhibiting stock recovery.

AFMA has a clear, well-documented strategy for addressing the risks of fishing posed on retained species. This includes quantitative stock assessments conducted annually for several of the target species. For all other retained species, the risk that the fishery poses was assessed through the application of an ecological risk assessment process. The Ecological Risk Assessment for the Effects of Fishing (ERAEF) employed for the fishery was a four step process:

1. Level 1 analysis (SICA – Scale Intensity Consequence Analysis)
2. Level 2 analysis (PSA – Productivity Susceptibility Analysis)
3. Level 2 analysis (Residual risk PSA)
4. Level 3 analysis (SAFE - Sustainability Assessment for Fishing Effects)

Of the 123 retained species, 3 byproduct species were identified as priority species that required specific Ecological Risk Management (ERM). These were the Longsnout Dogfish (*Deania quadrispinosa*) which was assigned the risk rating of Precautionary Extreme High Risk, Harrison’s Dogfish (*Centrophorus harrissoni*) which was assigned Precautionary High Risk and the Greeneye Spurdog (*Squalus chloroculus*) which was also assigned Precautionary High Risk.

Other strategies include fishery specific management actions for all priority species (including retained byproduct species) identified and documented in the Bycatch and Discarding Workplan for the South East Trawl Fishery. These plans are updated every two years. Progress against the actions for each Bycatch and Discard Workplan are provided

annually to SEWPaC. Further, for target species considered overfished, Stock Rebuilding Strategy documents are published based on the principles of recovery established in the Harvest Strategy. An example of a Stock Rebuilding Strategy document for blue warehou can be found at:

<http://www.afma.gov.au/wp-content/uploads/2010/07/B72QBUE.pdf>

It does not appear that the setting of incidental catch quotas for gemfish and blue warehou have yet been successful at recovering these stocks. For gemfish this may be the result of a regime shift, for blue warehou there is considerable uncertainty regarding stock status. A considerable amount of work has been done to examine the targeting behaviour of the fleet with respect to these two species. While ensuring that targeting is minimised is a strategy that should ensure the greatest opportunity for recovery of these species, currently there are no formal measures or assessments to determine whether or not targeting minimisation strategies are effective.

Related outcome required to meet the 80 guidepost:

Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.

Actions to attain the 80 guidepost:

Conduct a Spawning Potential Ratio analysis to aid assessment of stock status of blue warehou.

Implement performance measures to assess and minimise targeting of blue warehou and eastern gemfish while stocks are overfished.

**MSC criteria 2.1.3: Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species**

PI 2.1.3	Justification/Rationale
c	Information is adequate to support measures to manage main retained species.
a	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.
b	Information is sufficient to estimate outcome status with respect to biologically based limits. [Scoring issue need not be scored when RBF used to score PI 2.1.1]
c	Information is adequate to support a partial strategy to manage main retained species.
d	Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

Although not all information is reported or is being used to aid management of retained species, adequate information has been or is being collected to manage all main retained species.

If the current data strategies are maintained then ongoing data collection will be adequate to assess any changes in risk to main retained species.

Additional information:

*Eastern Gemfish*

Eastern Gemfish is also managed under a rebuilding strategy. However, current analyses show that over recent years there have been below-average recruitment, and that the stock is unlikely to rebuild in the required timeframe, even in the absence of fishing. Recovery may be influenced by biological or environmental factors that mean the stock will not be able to recover to its former levels.

Currently, efforts are concentrating on strengthening the implementation of management measures under the rebuilding strategy to reduce fishing mortality. A workshop on Eastern Gemfish was held in February 2011. Outcomes of this workshop were for industry and AFMA to work towards eliminating possible targeting, and to strengthen implementation of the rebuilding strategy. A series of port visits were conducted in June 2011 to work with industry towards these outcomes. As a result of the visits and in response to Stage 1 of the rebuilding strategy, industry members developed and agreed on a Code of Practice that outlines initiatives designed to assist the rebuilding of the Eastern Gemfish stock.

*Blue Warehou*

Currently it is difficult to assess the success of the rebuilding strategy in the absence of an adequate data set. The Blue Warehou stock assessment has suffered from data issues arising from the patchy distribution of the stock, and a low amount of commercial data due to a bycatch TAC. The species is also caught by both trawl and non-trawl sectors of the fishery. AFMA, in conjunction with CSIRO, is also examining whether there is evidence of targeting of Blue Warehou.

A workshop on Blue Warehou was held in February 2011 to address some of the issues with the stock assessment. Key outcomes of this workshop were to examine the feasibility of running a Blue Warehou survey in 2011 and develop and implement a sampling strategy to collect more data which could provide input into assessment options. A Blue Warehou survey was subsequently conducted in August, September and October 2011. Industry vessels have also started collecting biological information on Blue Warehou that may be able to be used to increase the data set.

There is evidence of separate stocks in eastern and western Bass Strait, separated at longitude 147°E. Recent stock assessments have been conducted on the basis of two stocks, and have shown that both stocks are depleted with the east more depleted than the west. Due to the two stocks, the TAC is managed within an east/west split to keep catches within levels appropriate for each stock.

Related outcome required to meet the 80 guidepost:

Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.

Actions to attain the 80 guidepost:

Conduct a Spawning Potential Ratio analysis to aid assessment of stock status of blue warehou.

Implement performance measures to assess and minimise targeting of blue warehou and eastern gemfish while stocks are overfished.

**MSC criteria 2.2.1: The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups**

PI 2.2.1	Justification/Rationale
a	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).
b	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

The fishery discards 276 bycatch species. For all bycatch species, the risk that the fishery poses was assessed through the application of an ecological risk assessment process. Of the 276 bycatch species, 3 species were identified as priority species that required specific Ecological Risk Management (ERM). These were the Bight Skate (*Dipturus gudgeri*) which was assigned the highest risk rating of Extreme High Risk, the Leafscale Gulper Shark (*Centrophorus squamosus*) which was assigned Precautionary Extreme High Risk and the Southern Dogfish (*Centrophorus zeehaani cf. uyato*) which was assigned Precautionary High Risk. These can be considered as species that are not highly likely to be within biologically based limits.

Fishery specific management actions for all priority bycatch species are identified and documented in the Bycatch and Discarding Workplan for the South East Trawl Fishery. These plans are updated every two years. Progress against the actions for each Bycatch and Discard Workplan are provided annually to SEWPaC.

*Bight skate:*

A part of the strategy to address Bight Skate is improved data collection through the Skates id guide in the management arrangements booklet: <http://www.afma.gov.au/managing-our-fisheries/fisheries-a-to-z-index/southern-and-eastern-scalefish-and-shark-fishery/publications-and-forms/>

However at this point there are insufficient data on the species to effectively determine actual risk. Improved data collection is required, underpinned by improved identification by fishers so that an improved understanding of risk can be obtained.

*Upper slope dogfish (USDs):*

A sound strategy for managing the recovery of Gulper sharks has been implemented in recent years. The early phase of the strategy has demonstrated some success. Implementation of the second stage should see the fishery achieve the second Scoring Issue for Gulper sharks.

AFMA has implemented management measures for upper-slope dogfish in stages. Catch limits were first introduced in the early 2000's, spatial closures in 2007 and additional spatial closures and revised catch limits were implemented in 2010, under the original Upper-Slope Dogfish Management Strategy (original Strategy). Currently, a network of seven targeted spatial closures, covering more than 4738 km<sup>2</sup> between the depths of 200m to 650m is closed. AFMA notes that the Musick Review (2011) of these measures indicates that the decline in biomass of both species has been halted and more needs to be done to rebuild it.

The biomass target is to get to B25%. In the absence of biomass estimates for these species a habitat proxy has been used for biomass. This will take up to 86 years to recover Harrison's Dogfish. The Strategy relies on a new network of spatial closures supplemented by a range of operational measures including regulated handling practices, 100% monitoring, move-on provisions and no retention of gulper sharks.

Populations of Endeavour Dogfish, Harrison's Dogfish and, to a lesser extent, Southern Dogfish are also within waters managed by NSW. Actions under this Strategy will be complemented by actions of NSW which has previously implemented a possession limit for dogfish species as a group, and is considering further spatial closures and other management arrangements for Harrison's and Southern dogfish. It should be noted that the NSW actions are not under AFMA's control.

There is also a western stock of Southern Dogfish that is primarily under the jurisdiction of Western Australia. However, there is limited data for this stock and no assessment of depletion has been made. Up to 33% of the habitat will be subject to closures for some or all fishing methods for this stock, creating large areas of protection, noting some of these rely on proposed Commonwealth Marine Reserves.

Related outcome required to meet the 80 guidepost:

Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.

Actions to attain the 80 guidepost:

For upper-slope dogfish (USDs), ensure the recently updated recovery strategy is being implemented successfully (i.e. new network of 10 spatial closures; regulated no retention of USDs).

Obtain improved information on the capture of Bight Skate, underpinned by education of fishers in identification of elasmobranchs.



**MSC criteria 2.2.2: There is a strategy in place for managing by-catch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to by-catch populations**

PI 2.2.2	Justification/Rationale
a	There is a partial strategy in place, if necessary, for managing by-catch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.
b	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or the species involved.
c	There is some evidence that the partial strategy is being implemented successfully.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

There is a sound strategy for managing bycatch species at levels within biologically based limits. There are several elements to the strategy.

Fishery specific management actions for priority bycatch species are identified and documented in the Bycatch and Discarding Workplan for the South East Trawl Fishery. The workplan also aims to ensure that general approaches to improvements in gear technology continue to be investigated to ensure that overall bycatch is reduced. The Workplan is updated every two years. Progress against the actions for the Workplan are provided annually to SEWPaC.

The main objectives of the Bycatch and Discarding Work Plan are to:

- Respond to high ecological risks assessed through AFMA’s Ecological Risk Assessment for the Effects of Fishing (ERAEF) and other assessment processes;
- Avoid interactions with species listed under the EPBC Act;
- Reduce discarding of target species to as close to zero as practically possible; and
- Minimise overall bycatch in the fishery over the long-term.

Other measures introduced to reduce bycatch include:

- an increase in the minimum mesh size for trawl codends;
- efforts to increase the recording of discards in logbooks; and
- a quota reconciliation system that prevents operators who are over-quota on one or more species from continuing to fish (and discard) those species.

*Upper-slope dogfish*

Upper-slope gulper sharks were targeted in the SESSF, GABTF and NSW trawl fisheries in the 1980s and 1990s and this resulted in the stocks being substantially depleted. Targeted fishing appeared to have effectively ceased in 2002, due to declining catch rates (Wilson et al. 2009), but the species are still taken as byproduct (with trip limits). Stock status is estimated to be <5–10 per cent of unfished levels on the upper slope off New South Wales, and unknown in other areas. Gulper sharks are also caught using gear types other than otter trawl.

Information is now sufficient to suggest that Gulper shark populations have stabilised. A recent FRDC project on their distribution and movement was also completed. Information for this species is now likely to be sufficient to determine the risk posed by the fishery.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.2.3: Information on the nature and the amount of by-catch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage by-catch**

PI 2.2.3	Justification/Rationale
a	Qualitative information and some quantitative information are available on the amount of main by-catch species affected by the fishery.
b	Information is sufficient to estimate outcome status with respect to biologically based limits. [Scoring issue need not be scored when RBF used to score PI 2.2.1]
c	Information is adequate to support a partial strategy to manage main by-catch species.
d	Sufficient data continue to be collected to detect any increase in risk to main by-catch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

Quantitative information on bycatch and discards is collected by the Integrated Scientific Monitoring Program (ISMP). In 2010, observer coverage in the otter trawl sub-fishery was 3.5%. This and other information has been used over a number of years to assess risk in the fishery to bycatch species.

As discussed in 2.2.1, bight skate was found to be at extreme high risk from fishing, mainly due to a lack of information combined with risk from the fishery. Part of a strategy for bight skate included a skate ID guide for the fishery. Further information needs to be collected on this species to determine actual risk.

Related outcome required to meet the 80 guidepost:

Ensure recovery of retained and bycatch species that are overfished or at risk from overfishing.

Actions to attain the 80 guidepost:

Obtain improved information on the capture of Bight Skate, underpinned by education of fishers in identification of elasmobranchs.

**MSC criteria 2.3.1: The fishery meets national and international requirements for the protection of ETP species. The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.**

PI 2.3.1	Justification/Rationale
a	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.
b	Direct effects are highly unlikely to create unacceptable impacts to ETP species.
c	Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

While some information is available on the ETP species that are likely impacted by the fishery, the information is insufficient to determine whether or not the fishery is highly likely to be within limits of national and international requirements. As a result of this the direct and indirect effects cannot be assessed.

201 ETP species are thought to occur in the area of the fishery, including: 3 species of sharks/rays, 79 species of seabirds, 49 species of marine mammal, 7 species of marine reptiles, and 63 species of syngnathids. For all ETP species, the risk that the fishery poses was assessed through the application of an Ecological Risk Assessment of the Effects of Fishing (ERAEF) process. Of the 201 ETP species, 6 species were identified as priority species that required specific Ecological Risk Management (ERM). These were the Australian fur seal (*Arctocephalus pusillus doriferus*) and 5 species of marine birds. All were ranked as High Risk.

Substantial discrepancies exist between ETP logbook entries and interactions observed at sea as part of the ISMP. As a result of this, SEWPaC placed the following condition on WTO approval:

Condition #8: "By 1 July 2010, AFMA to:

- a) ensure statistically robust levels of ongoing observer effort (or other reliable method) to validate the nature and level of interactions with, and to facilitate a quantification of the effects of fishing on: species that are identified as high risk through ecological risk assessment processes, species listed under the Environment Protection and Biodiversity Conservation Act 1999 and any other species identified by DEWHA to be of concern; ensuring that scientific observer coverage is representative of each sector of the SESSF, by vessel-types, areas and months;
- b) report on the level of scientific observer coverage by gear-specific effort as part of the annual reporting to DEWHA prescribed in Condition 3, and make this observer coverage level publicly available; and

c) annually compare observer reports with logbook records for species listed under the Environment Protection and Biodiversity Conservation Act 1999 and put measures in place to address any inconsistencies.”

Protected species interactions are reported on the AFMA website:

<http://www.afma.gov.au/managing-our-fisheries/environment-and-sustainability/protected-species/>

#### *Australian fur seals*

The CTS does interact with Australian Fur Seal populations in south-east Australia. However, during the fishery's existence there has been a continued increase in population abundance for the region (Kirkwood et al. 2010). This includes expansion in terms of population abundance as well as the establishment of new colonies. While there is some uncertainty in the levels of interactions due to discrepancies between observer and commercial logbook data, it is known that the levels of interactions are not impacting on recovery of the species following historic seal harvesting activities in the previous century. Irrespective of this position, AFMA and SETFIA continue to undertake ongoing research and management to attempt to mitigate seal interactions for the fishery. Currently a project comparing interaction levels among different cod-end lengths is being conducted. Also, an E-learning project for fishers is underway that aims to educate fishers on the importance of accurately reporting interactions with ETPs species.

#### *Seabirds*

There is significant uncertainty in the levels of interactions with seabirds for this sector. Currently SETFIA is undertaking a project to trial different mitigation techniques to reduce these interactions. This research needs to be underpinned by a strategy developed by AFMA to ensure that seabirds are managed to National and International requirements for ETPs.

#### *Shortfin mako and Porbeagle*

Listed as migratory species. Fishers are allowed to retain dead animals. Walker et al., (2007) reported rapid assessments for shark species interacting with the SESSF, and reported shortfin mako as a high risk and porbeagle as medium risk. The 2013 AFMA report on ETP interactions identified that only two porbeagle were caught from 2011 to 2013 in the SESSF. During this period only 1 longfin mako was caught (and was retained). While shortfin mako catches were approximately 250 individuals per year, CTS catches were less than 10% of these. There are no actions required by the CTS fishery for the harvest of porbeagle or mako shark.

#### Related outcomes required to meet the 80 guidepost:

Continue to reduce the discrepancy between fishery logbook and independent estimates of ETPs interactions. Continue to mitigate the impact of the trawl sector on ETP species. Ensure sustainability of migratory species.

#### Actions to attain the 80 guidepost:

Continue to improve education of fishers on the importance of ETP reporting to continue to reduce the discrepancy between logbook and independent reporting rates of ETP interactions.

Obtain an improved understanding of interactions with seabirds.

Continue to develop and implement mitigation strategies to reduce interactions with seabirds.

**MSC criteria 2.3.2: The fishery has in place precautionary management strategies designed to:**

- **Meet national and international requirements;**
- **Ensure the fishery does not pose a risk of serious harm to ETP species;**
- **Ensure the fishery does not hinder recovery of ETP species; and**
- **Minimise mortality of ETP species.**

PI 2.3.2	Justification/Rationale
a	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.
b	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.
c	There is evidence that the strategy is being implemented successfully.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion. The fishery is likely to meet the first two Scoring Issues, but does not meet the third.

The fishery does have a robust strategy to manage ETPs interactions but it is currently not being implemented successfully.

For all 201 ETP species, the risk that the fishery poses was assessed through the application of an ecological risk assessment process. The Ecological Risk Assessment for the Effects of Fishing (ERAEF) employed for the fishery was a four step process:

1. Level 1 analysis (SICA – Scale Intensity Consequence Analysis)
2. Level 2 analysis (PSA – Productivity Susceptibility Analysis)
3. Level 2 analysis (Residual risk PSA)
4. Level 3 analysis (SAFE - Sustainability Assessment for Fishing Effects)

Six species were identified as priority species that required specific Ecological Risk Management (ERM). These were the Australian fur seal (*Arctocephalus pusillus doriferus*) and 5 species of marine birds. All were ranked as High Risk.

Fishery specific management actions for priority ETP species are identified and documented in the Bycatch and Discarding Workplan for the South East Trawl Fishery. The Workplan is updated every two years. Progress against the actions for the Workplan are provided annually to SEWPaC.

The objectives of the Bycatch and Discarding Work Plan include:

- Respond to high ecological risks assessed through AFMA’s Ecological Risk Assessment for the Effects of Fishing (ERAEF) and other assessment processes;
- Avoid interactions with species listed under the EPBC Act;

In addition to addressing the high risk species identified through the ERA process, part of AFMA’s Ecological Risk Management response is to ensure all reasonable steps are taken to minimise interactions with all ETP species thought to occur in the area of the fishery. Fishers must report all ETP species interactions to the Australian Fisheries Management Authority (AFMA), and AFMA is obligated to report the interactions to the Department of Sustainability, Environment Water Populations and Community (SEWPaC) under the Environmental Protection of Biodiversity and Conservation Act 1999 (EPBC).

Many of the identified ETP species are also managed under various international plans of action. Those applicable to the Otter Trawl sub-fishery include the:

- National Strategy to Address Interactions between Humans and Seals: Fisheries Aquaculture and Tourism;
- Recovery Plan for Marine Turtles in Australia; and
- Draft Recovery Plan for the Australian Sea Lion.

Operators are required to report all interactions with ETP species in daily logbooks, and to carry an independent observer upon request by AFMA.

While these strategies are appropriate for the international management of ETP species, there is no evidence to suggest that the strategy is working. The primary issue here is the provision of adequate data through on-board observing to demonstrate that the strategies are effective.

Related outcome required to meet the 80 guidepost:

Continue to reduce the discrepancy between fishery logbook and independent estimates of ETPs interactions. Continue to mitigate the impact of the trawl sector on ETP species. Ensure sustainability of migratory species.

Actions to attain the 80 guidepost:

Continue to improve education of fishers on the importance of ETP reporting to continue to reduce the discrepancy between logbook and independent reporting rates of ETP interactions.

Obtain an improved understanding of interactions with seabirds.

Continue to develop and implement mitigation strategies to reduce interactions with seabirds.

**MSC criteria 2.3.3: Relevant information is collected to support the management of fishery impacts on ETP species including: Information for the development of the management strategy; Information to assess the effectiveness of the management strategy; and Information to determine the outcome status of ETP species.**

PI 2.3.3	Justification/Rationale
----------	-------------------------

PI 2.3.3	Justification/Rationale
A	Sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.
B	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.
C	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.

Assessment relative to the 80 guidepost:

The fishery **does not meet** the 80 guidepost for this criterion.

As discussed in 2.3.1, the main impediment to understanding risk to ETP species is insufficient information. The information in 2.3.1 applies to this criterion as well.

Related outcome required to meet the 80 guidepost:

Continue to reduce the discrepancy between fishery logbook and independent estimates of ETPs interactions. Continue to mitigate the impact of the trawl sector on ETP species. Ensure sustainability of migratory species.

Actions to attain the 80 guidepost:

Continue to improve education of fishers on the importance of ETP reporting to continue to reduce the discrepancy between logbook and independent reporting rates of ETP interactions.

Obtain an improved understanding of interactions with seabirds.

Continue to develop and implement mitigation strategies to reduce interactions with seabirds.

**MSC criteria 2.4.1: The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function**

PI 2.4.1	Justification/Rationale
a	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

The CTS is approximately 58,000 square nautical miles, although the core fishing areas cover approximately 7,500 square nautical miles. Effort in the CTS (measured in trawl hours) almost doubled between 1989 and 2003 (Caton & McLoughlin 2004), although since 2001, the total number of shots in the CTS has declined and in 2009 about 15,800 shots are conducted annually (AFMA 2010b). The 2007 Bycatch Action Plan for 2007-09 states that

“Over 95% of the designated area of this sector, consisting of both trawlable and untrawlable fishing grounds, is not fished.”

Habitat information in the SESSF has been collected by Bax & Williams (2001) and William et al. (2006). The 2007 ERAEF process assessed 158 habitat types. Habitat types were classified based on substratum, geomorphology, and dominant fauna, using photographic data. Of the 158 habitat types, 46 were assessed to be at high risk, 58 medium, and 54 low. Of the high risk habitats, none were found on the inner shelf (0-100m), 18 were on the outer shelf (100-200m), 12 were on the upper slope (200-700m), and 16 were on the mid slope (700-1500m). These depth categories are somewhat different from those used for species.

High risk mid slope habitats include several categories of hard bottom (but still accessible to trawl gear) with delicate epifauna consisting of octocorals, crinoids, small sponges, and sedentary animals. There are also several types of soft bottom habitat that support large, erect or delicate epifauna. Habitats of seamount and canyon features occur at this depth zone.

High risk habitats on the upper slope also include several hard bottom types, in this case dominated by large sponges not seen on the mid slope. There are also several soft bottom habitats based on bryozoan communities which are restricted to a narrow zone near the shelf break. Habitats of canyon features occur at this depth zone.

High risk habitats on the outer shelf include soft sediment seabed types interspersed with harder bottom supporting large sponges, mixed epifauna, and the bryozoan communities at the shelf break.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.4.2: There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types**

PI 2.4.2	Justification/Rationale
a	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
b	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.
c	There is some evidence that the partial strategy is being implemented successfully.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.



As stated above, the main strategy used by the fishery to mitigate the risk of otter trawling is through fishing closures. Over 95% of the area designated for fishing is not fished, either due to grounds being untrawlable or because of closures. Ongoing monitoring via the observer program gives some objective basis for confidence in the strategy.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.4.3: Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types**

PI 2.4.3	Justification/Rationale
a	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.
b	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.
c	Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).

Assessment relative to the 80 guidepost:

As stated in 2.4.1, habitat information in the SESSF has been collected by Bax & Williams (2001) and William et al. (2006). In addition, the 2007 ERAEF determined habitat types in the fishing area. Knowledge of the distribution and vulnerability of habitats in the area is known.

Information on habitat impacts is collected by logbooks and observers. Operators are required to complete a shot-by-shot logbook, and vessels are monitored using satellite Vessel Monitoring Systems (VMS). Observers record all bycatch, including benthos, caught by the fishery.

Parks Australia launched a new service in July 2014 that alerts operators via text message when they are transiting a marine protected area. Onboard VMSs alert Parks Australia when a vessel enters an MPA, and the text message is then sent. This further helps trawlers avoid fishing in MPAs.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.5.1: The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function**

PI 2.5.1	Justification/Rationale
a	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Wayte et al. (2004) stated “Removal, modification or disturbance of seabed flora and fauna by these methods does occur. However the extent of these impacts and their effects on the ecosystem is poorly understood”. This sub-fishery has caused impacts to the ecosystem and habitat although as much of the effects to ecosystem functionality remain unknown they are considered ‘moderate’ (i.e., “Measurable changes to the ecosystem components without there being a major change in function (i.e. no loss of components)” and the “Impacts more widespread but still acceptable; 5–50% of habitat area is affected”.

An Atlantic model and other relevant ecosystem work has been performed to assess the level of impact of the SESSF on the surrounding ecosystem (Fulton et al. 2007).

The 2007 ERA (Wayte et al., 2007) stated that “Fishing occurs throughout the year over the entire SEF. Fishery management plan requires operators to take all reasonable steps to minimise loss of gear, though evidence of gear loss does exist, and retrieval may be impossible. Trawl gear most likely to be lost by being caught up on rocky outcrops. Lost gear may change habitat structure by virtue of creating new structure, which remains to eventually become habitat.” Australian MARPOL regulations apply to all Australian fishing vessels including operators in the CTS. Operators are required to make every effort to retrieve lost or damaged gear. If lost gear is irretrievable, there is a requirement for it to be reported (along with the approximate position), to the nearest port authority or the Australian Search and Rescue Centre in Canberra (Australian Maritime Safety Authority (AMSA)). In the ERAEF, Intensity was scored as minor because little gear is lost, Consequence was scored as minor as lost gear may cause very localised long-term change to habitat structure and function and Confidence was high as little gear is lost.”

On balance, and given that the 2007 Bycatch Action Plan for 2007-09 states that “Over 95% of the designated area of this sector, consisting of both trawlable and untrawlable fishing grounds, is not fished.”, it is unlikely that the fishery has impacted the key elements of the ecosystem irreversibly. The one exception to this case may be the reduction in abundance of several shark species, which are higher order predators/scavengers. While the impact of the loss of these sharks is poorly understood, it is considered highly unlikely to have disrupted the underlying function of the ecosystem.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.5.2: There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function**

PI 2.5.2	Justification/Rationale
a	There is a partial strategy in place, if necessary.
b	The partial strategy takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.
c	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).
d	There is some evidence that the measures comprising the partial strategy are being implemented successfully.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Some principles of Ecosystem Based Management (EBM) for fisheries have been implemented within the management plans of the SESSF. The identification, avoidance and reduction of impacts to the ecosystem have been implemented through:

- Harvest strategy (target stock and retained bycatch (byproduct));
- Bycatch Action Plans (discarded bycatch);
- Gear modification requirements (to mitigate capture of juvenile target species and bycatch);
- Introduction of spatial closures (including Marine Protected Areas);
- Ongoing monitoring (observer coverage and logbook assessment);
- Research and modelling into the trophic ecology of south-eastern Australia.

It is likely that these strategies ensure the fishery does not pose significant harm to the ecosystem.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 2.5.3: There is adequate knowledge of the impacts of the fishery on the ecosystem**

PI 2.5.3	Justification/Rationale
a	Information is adequate to broadly understand the key elements of the ecosystem.
b	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.

PI 2.5.3	Justification/Rationale
c	The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.
d	Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.
e	Sufficient data continue to be collected to detect any increase in risk level (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Knowledge of the ecosystem is obtained both from logbook and observer records. These sources of data combined provide information on catch, bycatch, ETP species and habitats.

Information from these sources has been used in a detailed Ecological Risk Assessment of the fishery. The ERA allows for prioritisation of management, research, data collection, and monitoring needs.

The main impacts of the fishery on ecosystem elements (i.e. seabirds, marine mammals) are known, and a research plan is in place to allow for continued data collection on ecosystem impacts.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**4.3 Effective management system**

**MSC criteria 3.1.1: The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and incorporates an appropriate dispute resolution framework.**

PI 3.1.1	Justification/Rationale
a	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.

PI 3.1.1	Justification/Rationale
b	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.
d	The management system has a mechanism to <b>observe</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

Assessment relative to the 80 guidepost:

The Australian Fisheries Management Authority (AFMA) manages the SESSF under the *Fisheries Management Act 1991* and relating sub-ordinate legislation (including management plans, bycatch action plans, and harvest strategies). There are also Management Advisory Committees (MACs) relating to the SESSF and Resource Assessment Groups (RAGs) for various areas of the SESSF. Ecological sustainability is mentioned within the Act, and the SESSF has been evaluated under Ecological Risk Assessment (Wayte *et al.*, 2004), and Wildlife Trade Operation declaration (EPBC Act).

There are provisions in the Fisheries Management Act for the settlement of disputes, and these have been tested and were effective (see Public Certification Report for Australian Northern Prawn Fishery produced by MRAG for the purposes of MSC Accreditation).

There is no specific mention of traditional fishing in Commonwealth fisheries law. There are also no special provisions for Aboriginal fishing under state law in NSW, VIC and TAS. In SA, the Fisheries Act 1971 states that Aboriginal peoples are subject to the same laws as all other citizens (<http://www.alrc.gov.au/publications/35.%20Aboriginal%20Hunting,%20Fishing%20and%20Gathering%20Rights%3A%20Current%20Australian%20Legislation/-0> ). However, there are no customary fishing formally recognised in the areas where CTS operates.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 3.1.2: The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.**

PI 3.1.2	Justification/Rationale
a	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.
b	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system

PI 3.1.2	Justification/Rationale
	demonstrates consideration of the information obtained.
c	The consultation process provides opportunity for all interested and affected parties to be involved.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Commonwealth fisheries are managed by AFMA in a consistent and consultative manner with clear roles and responsibilities for all stakeholders. All management processes are documented publically on the world wide web, as are all relevant documents for decision making and all minutes from management meetings.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 3.1.3: The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.**

PI 3.1.3	Justification/Rationale
a	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within management policy.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

Objectives are outlined in the FMA and the EPBC Act. In addition, the harvest strategy and control rules guide decision-making in the fishery. The precautionary approach is explicitly required in management. These objectives are consistent with MSC Principles and Criteria.

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 3.1.4: The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.**

PI 3.1.4	Justification/Rationale
a	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that <b>perverse incentives</b> do not arise.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

The SESSF Harvest Strategy Framework provides a framework to assess the fishery against economic objectives. Targets are set to achieve Bmey, and the fishery is assessed against this target regularly.

The Securing our Fishing Future program resulted in the removal of approximately half the boat statutory rights in the CTS, and likely resulted in the removal of the least efficient vessels in the fishery. This was a positive incentive for the fishery as it limited harvest and increased efficiency.

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 3.2.1: The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2**

PI 3.2.1	Justification/Rationale
a	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

The Southern and Eastern shark and scalefish fishery has a formal Management Plan that is regularly updated, and also a formal harvest strategy, both of which incorporate biological, socio-economic and ecosystem objectives that reflect MSC Principles 1 and 2.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required.

**MSC criteria 3.2.2: The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives**

PI 3.2.2	Justification/Rationale
a	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.
b	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
c	Decision-making processes use the precautionary approach and are based on best available information.
d	Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

All management strategies and decision-making processes for the fishery are established to address the principles of Ecosystem Based Fishery Management as required by the EPBC Act which is underpinned by precautionary principles.

Assessments and management decision-making of target species is underpinned by information obtained from quantitative stock assessments that incorporate fishery-dependent and independent data sources. There is an elaborate and thorough tiered approach to risk assessment that aims to identify risks of overfishing on all elements of the fishery including retained species, discarded species, ETPs, habitats and ecosystems. Scientific research is conducted by an independent scientific body (CSIRO). All processes and research and management outcomes are publically documented on the world wide web, including discussion of decision-making processes and outcomes.

Related outcome required to meet the 80 guidepost:

None required

Actions to attain the 80 guidepost:

None required

**MSC criteria 3.2.3: Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.**

PI 3.2.3	Justification/Rationale
a	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.



PI 3.2.3	Justification/Rationale
b	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.
c	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.
d	There is no evidence of systematic non-compliance.

Assessment relative to the 80 guidepost:

AFMA administers compliance programs directed towards domestic and foreign fishing vessels, covering licensed and illegal fishing activity. AFMA provide monthly and annual reports, which outline program outcomes and, provide a means for measuring success. AFMA use a range of compliance tools to gather intelligence and conduct routine surveillance, and compliance monitoring programs include the use of:

- Vessel Monitoring Systems (VMS);
- Prior-to-landing Reports;
- Catch Disposal Records; and
- Fish Receiver Records.

In 2009, the Australian National Audit Office (ANAO) released its performance audit report on the Management of Domestic Fishing Compliance.

In 2010-11 AFMA's domestic compliance and enforcement activities involved a range of compliance measures designed to prevent, detect and respond to illegal fishing activities. AFMA has adopted a targeted risk-based compliance and enforcement program. During 2010–11 the key risks targeted were:

- failure to carry observers when required;
- taking in excess of allocated quota and failing to reconcile in the required timeframe;
- not having an integrated computer vessel monitoring system on board and operating at all times;
- breaching conditions designed to implement the threat abatement plan for the Eastern Tuna and Billfish Fishery;
- shark finning and not retaining the carcasses;
- failing to accurately complete or submit logbooks;
- fishing and navigating in closed areas; and
- quota avoidance and evasion.

In addition to the intervention measures adopted to target these risks and to ensure compliance with Commonwealth conditions, Commonwealth fisheries officers conducted eight at-sea patrols, made 37 visits to 23 ports (including 20 of the 30 most active ports) and inspected 176 vessels and 40 fish receiver facilities, equating to 39 percent of the Commonwealth fleet being inspected at least once (AFMA 2011b).

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 3.2.4: The fishery has a research plan that addresses the information needs of management.**

PI 3.2.4	Justification/Rationale
a	A <b>research plan</b> provides the management system with a strategic approach to research and <b>reliable and timely information</b> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
b	Research results are <b>disseminated</b> to all interested parties in a <b>timely</b> fashion.

Assessment relative to the 80 guidepost:

The SESSF Five year research plan (2011-2015) outlines the research priority areas for the SESSF, including the CTS (AFMA, 2011a). AFMA and SETFIA have invested significant resources into improving knowledge and research in the CTS, and continues to do so for key priorities. Research outcomes are peer reviewed and are all available online.

Related outcome required to meet the 80 guidepost:

None required.

Actions to attain the 80 guidepost:

None required.

**MSC criteria 3.2.5: There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.**

**There is effective and timely review of the fishery-specific management system.**

PI 3.2.5	Justification/Rationale
a	The fishery has in place mechanisms to evaluate key parts of the management system
b	The fishery-specific management system is subject to regular internal and occasional external review.

Assessment relative to the 80 guidepost:

The fishery **is likely to meet** the 80 guidepost for this criterion.

All elements of the management system are regularly reviewed, including management plans, harvest strategies etc. Many of the systems developed, such as the three-tiered risk assessment process, have been externally reviewed and published in the scientific literature.

Related outcome required to meet the 80 guidepost:

Not required.

Actions to attain the 80 guidepost:

Not required.

### **References and other relevant documents for the fishery**

DAFF (2012). Commonwealth Fisheries Harvest Strategy: Policy and Guidelines. Department of Agriculture, Fisheries and Forestry.

[http://www.daff.gov.au/\\_data/assets/pdf\\_file/0004/397264/hsp.pdf](http://www.daff.gov.au/_data/assets/pdf_file/0004/397264/hsp.pdf)

Kirkwood, R., Pemberton, D., Gales, R., Hoskins, A., Mitchell, T., Shaughnessy, P. D., and Arnould, J. P. Y. (2010). Continued population recovery by Australian fur seals. *Marine and Freshwater Research* 61, 695–701.

Klaer N. 2003. Data summary and assessment update for Pink Ling (*Genypterus blacodes*) in the South East Fishery. Ling Workshop 2003, Hobart, Tasmania.

Punt, A.E. and Taylor, B.L. (2011). Stock Assessment of Pink Ling (*Genypterus blacodes*) using data up to 2010.

ShelfRAG (2012) 2011 Stock Assessment Reports for the South East Scalefish and Shark Fishery. Summaries for Species Assessed by Slope/DeepRAG & ShelfRAG.

Thompson, R. 2000a. Initial assessment and forward projection of Pink Ling (*Genypterus blacodes*) in the South East Fishery. Report to the Workshop on Pink Ling in the South East Fishery for the South East Fishery Assessment Group, 2000.

Thompson, R. 2000b. Report of the workshop on pink ling in the South East Fishery for the South East Fishery Assessment Group.

Thomson, R.B. 2002a. South East Fishery data for stock assessment purposes. Draft version. May 2002. 26pp.

Thomson, R.B. 2002b. Automated catch curve analysis of South East Fisheries quota species. Presented to the South East Fishery Assessment Group, July 2002.

Thomson, R.B. 2002c. South East Fishery data for stock assessment purposes. Draft CSIRO Report.

Thomson, R. and Smith, A. 2002. Yield-per-recruit calculations for SEF quota species. CSIRO Report.

Tuck, G.N. (ed.) 2006. Stock assessment for the South East Scalefish and Shark Fishery 2004-2005. Australian Fisheries Management Authority and CSIRO Marine and Atmospheric Research, Hobart. 222 p.

Tuck, G.N. (ed.) 2007. Stock Assessment for the Southern and Eastern Scalefish and Shark Fishery 2006-2007. Volume 1: 2006. Australian Fisheries Management Authority and CSIRO Marine and Atmospheric Research, Hobart. 570 p.

Tuck, G.N. (ed.) 2011. Stock Assessment for the Southern and Eastern Scalefish and Shark Fishery 2010. Part 1. Australian Fisheries Management Authority and CSIRO Marine and Atmospheric Research, Hobart. 374 p.

Walker, T. I., Gason, A. S., and Koopman, M. (2006). SESSF scalefish abundance and spatial distributional trends from available ISMP data. Final report to Australian Fisheries Management Authority Project No. R05/1096.

Wilson, DT, Patterson, HM, Summerson, R & Hobsbawn, PI (2009). Information To Support Management Options For Upper-Slope Gulper Sharks (including Harrison's Dogfish And Southern Dogfish), Final Report To The FRDC, Project 2008/65, Bureau Of Rural Sciences, Canberra.