# **Surveillance Visit Report for**

# Spencer Gulf Prawn (*Penaeus (Melicertus) latisulcatus*) Trawl Fishery

**MRAG-MF-1630** 



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#### MSC reference standards:

MSC Principles and Criteria for Sustainable Fishing Version 1.1 MSC Certification Requirements Version 1.2 (Assessment tree) MSC Guidance to Certification Requirements Version 1.1 (Assessment tree) MSC Fisheries Certification Requirements Version 2.0 (process)

General Information		
Fishery Name:	Spencer Gulf Prawn Trawl Fishery	
Unit(s) of Certification:	Penaeus (Melicertus) latisulcatus	
Geographical boundaries	Cape Catastrophe S34° 59.12' E136° 0.18'	
	Cape Spencer S35° 17.99' E 136° 52.84'	
Certification Date:	25 <sup>th</sup> July 2011	
<b>Certification Expiry Date:</b>	24 <sup>th</sup> July 2016	
Surveillance Assessment	Principle 1, Principle 2, Principle 3.	
Team:	Richard Banks	
	Kevin McLoughlin	
On-site Audit Date:	27-31 July 2015	
Surveillance Stage:	Fourth surveillance audit	
Surveillance Frequency:	Annual	

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Prepared by:	Richard Banks, Kevin McLoughlin
Checked/Approved by:	RJT

### Contents

Sι	ummary	/	. 4	
1	Introduction 4			
2	The S	Surveillance Process	. 5	
3	Infor	mation Sources	. 6	
	3.1	Major changes notified by the client	. 6	
	3.2	Other information sources	. 7	
4	MSC	Certification validation requirements	. 7	
	4.1	Public claims made by the client	. 7	
	4.2	Review of any personnel changes in science, management or industry	. 7	
	4.3	Review of any changes to the scientific base of information, including stock		
	assessi	ments	. 7	
5	Prog	ress in implementing the client action plan	. 8	
6	Cond	clusions and Recommendations	19	
	6.1	Progress relative to milestones	19	
	6.2	Closed-out conditions	19	
	6.3	Surveillance	19	
	6.4	Certification Decision	19	
	Appen	dix 1. Re-scoring evaluation tables	20	

### Summary

The conclusion of the audit is that the certificate for the Spencer Gulf Prawn Trawl Fishery should be extended for another year. The audit found that the Client Action Plan has been implemented as agreed. Conditions 1, 2, and 3 have been closed. Conditions 4, 5, 6 and 7 were already closed previously.

### **1** Introduction

This report outlines the process and outcome of the fourth annual surveillance audit for the MSC certified fishery 'Spencer Gulf Prawn (*Penaeus (Melicertus) latisulcatus*) Trawl Fishery'. The fishery is conducted by members of the Spencer Gulf and West Coast Prawn Fishermen's Association (SGWCPFA).

There are 39 vessels in the fishery. Fishing takes place during the night. The fishing season lasts from November to June. All these vessels are twin rigged with limits set on vessel horse power (450 hp), and the size and headline of the trawls (a maximum 29.26m in total or 14.63 m per net).

No TAC as such is established in the fishery (CG5.1.1/2/3). The client group takes all commercial catches within preset periods. The total green weight catches of prawns in the 2012/2013 and 2013/2014 seasons were 1,699t and 1,675t respectively (CG5.1.4). Over the last twelve fishing years, since a low catch of 1,479 t in 2002/2003, the annual average catch has been in a range 1,479 t to 2,361 t (Noell and Hooper 2015<sup>1</sup>). The 2013/14 catch matches the smallest (with 2011/12) since 2002/03. Survey catch rate information (nominal or standardised) suggest continuing high stock size throughout the year and annually. The surveys also indicate ongoing acceptable levels of egg production, with 2013/14 egg production being the highest recorded for November surveys (Noell and Hooper, 2015). All indications are such that scoring on PI 1.1.1 would be unaffected.

The fishery operates in specific areas within the Spencer Gulf, associated with a series of gazetted and voluntary closed areas, along with real time move on actions at sea, supported through co-management actions. Effort has declined since 1978/1979 from 46,000 hours/year to ~ 17,000 hours/year for the last 8 years. Over the 8-year period (from 2004/2005), spatial analysis demonstrates that High and Medium intensity fishing areas resulted in a stable footprint at ~ 17% of fishable areas (>10 m depth). The High intensity trawled area has been stable at 2%.

The fishery is supported through a series of legal instruments including the Fisheries Management Act 2007 Act which embraces management principles as laid down in Commonwealth Legislation, which acknowledge the precautionary approach, stakeholder participation and the Ecosystem Approach to Fisheries Management. The principles of co-

<sup>&</sup>lt;sup>1</sup> Noell, C. J. and Hooper, G. E. (2015). <u>Spencer Gulf Prawn Penaeus (Melicertus) latisulcatus Fishery 2013/14. Fishery</u> <u>Assessment Report to PIRSA Fisheries and Aquaculture</u>. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-8. SARDI Research Report Series No. 843. 68pp

management are endorsed through the Fisheries Act 1982, which facilitates the active participation in management decision making by the SGWCPFA Fisheries Management Committee (FMC). The fishery also has a management plan, which runs from 2014 to 2019, replacing the previous plan that ran from 2007 to 2012.

Principal support organisations include the SGWCPFA and Primary Industries and Resources, South Australia (PIRSA). The principal research organization is South Australia Research and Development Institute (SARDI). The main stakeholder, at State level, additional to the fishermen, is the Conservation Council for South Australia (CCSA). The World Wildlife Fund, Australia is also a major NGO stakeholder with an interest in this fishery.

In preparation for this surveillance audit, stakeholders were first contacted by email on 15 May and by follow up emails between 9 June and 3 July 2015, and invited to submit comments. The notification of the surveillance audit was also published on the MSC website on the 9 June 2015. The audit was carried out at the offices of DMAW Lawyers, Adelaide between 27 July and 29 July, 2015, by the surveillance team consisting of Richard Banks and Kevin McLoughlin. No written comments had been received from stakeholders, but the assessment team met with the SGWCPFA, PIRSA and SARDI on 27 July, and thereafter with the Conservation Council for South Australia on 29 July, 2015. A separate telephone interview was held with WWF on 28 July, 2015.

### 2 The Surveillance Process

The assessment processes followed the determination of the surveillance level based on Table C3 and C4 shall be included in the Surveillance Certification Report.

Criteria	Surveillance
	score
Default Assessment Tree used	
Yes	0
No	2
Number of open conditions	
Zero conditions	0
Between 1-5 conditions	1
More than 5	2
Principle Level scores	
>=85	0
<85	2
Conditions on outcome PIs	
Yes	2
No	0

Table C3. Criteria to determine surveillance score

Table	C4:	Surveillance	Level
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			Years after certification or recertification			
Surveillance score from Table C3)	Surveillance Level		Year 1	Year 2	Year 3	Year 4
2 or more	Normal surve audit	eillance	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & recertification site visit
1	Remote surveillance	Option 1 Option 2	Off-site surveillance audit Off-site surveillance audit	On-site surveillance audit Off-site surveillance audit	Off-site surveillance audit On-site surveillance audit	On-site surveillance audit & recertification site visit
0	Reduced Surveillance		Review of new information	On-site surveillance audit	Review of new information	On-site surveillance audit & recertification site visit

The surveillance team met with Simon Clark, Executive Officer of the SGWCPFA; Anabelle Jones and Brad Milic (PIRSA), and Craig Noell, Stephen Mayfield and Owen Burnell (SARDI), and James Brook, CCSA.

Discussions covered all issues as laid out in annex CG of the MSC Certification Requirements, including the principal changes occurring to the fishery within the third year of certification and the outcomes as outlined in the Client Action Plan (CAP) against the conditions set.

### **3 Information Sources**

### 3.1 Major changes notified by the client

The Minister disbanded the Fisheries Council on 30 June, 2015. In some cases, with comanagement systems in place, e.g. Spencer Gulf Prawn Trawl, it was deemed sufficient to rely on the management committees as the effective tool for implementing management actions, and in others, Management Advisory Councils were re-established.

PIRSA finalised and adopted the revised Spencer Gulf Prawn Trawl Management Plan in October 2014, incorporating a revised harvest strategy implemented for the start of the 2014/2015 fishing year.

The results of the survey into the Giant Australian Cuttlefish spawning activities in Northern Spencer Gulf (Steer, M., 2015) was competed indicating the recent dynamics of the prawn trawl fleet had not adversely affected the Giant Australian Cuttlefish population in northern Spencer Gulf.

The Fishery had extended its data collection in fishery independent stock assessment surveys to include *Filipcampus tigries* (Tiger pipefish) from September 2014. This was in response to the Ecologically Sustainable Development (ESD) (PIRSA, 2014), which had identified Tiger pipefish as medium risk. This is now an ongoing requirement, but early data has indicated very low levels of interaction in fished areas.

### **3.2 Other information sources**

The assessors drew from referenced material (published documents) to support the findings in the report.

### 4 MSC Certification validation requirements

### 4.1 Public claims made by the client

The client uses the MSC logo on a brochure with recipes, standard letterhead, and shirts for fishery participants; all of these were sighted during the surveillance audit. In addition, the client uses a video<sup>2</sup> to support MSC certification of the fishery. The only claim by the client is that the fishery is MSC certified and is a sustainable fishery. Statements by interviewees on the video go no further. No unsupportable claims are made.

### 4.2 Review of any personnel changes in science, management or industry

There have been no organisational and personnel changes at the management authority, PIRSA. There have been no changes to the scientific provider. There has also been no change in the role of the Association and its role in co-managing the fishery.

# 4.3 Review of any changes to the scientific base of information, including stock assessments

A number of projects that identify information against the background of the needs required to fulfil the certification conditions have now been completed (a CRC project (see Condition 1) and FRDC funded projects (see Conditions 3 and 4)). Changes in logbooks and reporting of bycatch (see Condition 2) now provide additional information to guide mitigation measures and feed in to ecological risk assessments.

<sup>&</sup>lt;sup>2</sup> <u>http://spencergulfkingprawns.com.au/home/</u>

Research to standardise survey catch per unit of effort (CPUE) has been undertaken (as in Recommendation 2, SG1.2.3, of the assessment report). The 2012/13 and 2013/14 stock assessments present information undertaken on standardisation of survey data CPUE. A major function of this CPUE standardisation was to support the development of a bio-economic model for the fishery, which has now been undertaken. The main outputs of the model are WKP population and economic status based on reference points for MSY and maximum economic yield (MEY), and evaluation of 10-year projections of simulated management procedures for the fishery (Noell et al. 2015<sup>3</sup>). The results of the bio-economic model are seen as provisional and further work on this and the CPUE standardisation is planned.

### 5 Progress in implementing the client action plan

PI	1.1.2
Guidepost not met	• For low trophic level species, the target reference point takes into account the ecological role of the stock.
	Note that while only the fourth SG80 level Guidepost was not met, the condition set was slightly wider (see below).
Condition	A clear explanation of the use of reference points and triggered actions, clearly linked to the requirements for limits and targets in the FAM P1.1.2, should be prepared and agreed for inclusion in the new Management Plan. Limits and targets adopted in the new Management Plan should explicitly consider the role of prawns in the SG ecosystem.
	The client is required by the first surveillance to provide a plan for necessary work in support of this condition with a clear outline of the approach to be taken. The plan should be enacted by the second annual surveillance audit. By 3 years after certification is granted, work will be completed sufficient to provide clarity as to the targets and limits set and to provide confidence that they explicitly or implicitly meet PI 1.1.2 requirements at the 80 scoring level or better.
Requirement by Year 1	The client is required by the first surveillance to provide a plan for necessary work in support of this condition with a clear outline of the approach to be taken.
Requirement by Year 2	The plan should be enacted by the second annual surveillance audit.
Requirement by Year 3	By 3 years after certification is granted, work will be completed sufficient to provide clarity as to the targets and limits set and to provide confidence that they explicitly or implicitly meet PI 1.1.2 requirements at the 80 scoring level or better.
Requirement by Year 4	Adequacy of information will be evaluated by the fourth surveillance audit.
Client Action Plan	On behalf of the Fisheries Council of SA, PIRSA will prepare a new management plan for the Spencer Gulf Prawn fishery by 30 June 2013 (Recommendation 4). PIRSA will prepare a project statement in 2011 for preparing the Management Plan. The project statement will provide a

Condition 1: Reference Points

<sup>&</sup>lt;sup>3</sup> Noell, C.J., O'Neill, M.F., Carroll, J.D. and Dixon, C.D. (2015). A bio-economic model for South Australia's prawn trawl fisheries. Final Report. Prepared by the South Australian Research and Development Institute (Aquatic Sciences), Adelaide. CRC Project No. 2011/750. 115pp.

	work plan and timelines for completing components of the Management Plan, including the harvest strategy for the Fishery.
	As part of the new management plan, PIRSA are currently developing a harvest strategy framework to objectively assess current stock status based on Performance Indicators (PIs). The new suite of PIs for the fishery will be written to address the requirements of MSC PI 1.1.2. The primary PIs will involve measures of relative biomass determined from standardised measures of CPUE from fishery-independent surveys. Standardisation will examine key environmental factors as well as differences among survey vessels (addresses Recommendation 1). PIs will have relevant limit reference points and triggers that evoke a management response specified in the Management Plan.
	SARDI will also undertake standardisation of commercial fishing CPUE to determine whether it is
Year 3 Actions by SGWCPFA and management organisation	PIRSA established a Management Plan Steering Committee which first met in July 2012 to provide oversight in the development of a draft Management Plan (MP) to replace the existing Plan. A draft MP was available for the 2013 surveillance audit. As indicated at the 2013 audit, the draft MP was comprehensive and included a place holder for a revised Harvest Strategy (HS). A draft HS document was also made available for the 2013 review. The revised MP and its HS were due to be in place in 2013 but the requirements for extensive consultation by the Committee, Fisheries Council and then a public consultation process, meant that this did not happen. Unfortunately, there have been further delays and this Plan had not been adopted by the time of the 3rd surveillance audit. There have been revisions made to the draft HS seen in 2013. As with the 2013 draft, the revised 2014 draft HS includes a comprehensive specification of biological indicators and reference points, decision rules, and fishing strategies. Information provided to the assessors showed that there has been external review of the draft strategy (Dichmont, 2013) and that technical analysis of the implications of the revised strategy on the fishery has been undertaken. The Surveillance team was advised that no further revision of the draft MP is anticipated and the Plan is expected to be in place by July 2014, and will be the Plan under which the fishery operates in the 2014/15 fishing year. Once finalised and implemented, the MP (including HS) should satisfy the condition requirement to meet the SG80 Scoring Guideposts by 4 years after certification. It is also required that by 3 years after certification, work will be completed sufficient to provide clarity to the targets and limits set and to provide orbifdence that they explicitly or implicitly meet PI 1.1.2 requirements at the 80 scoring level or better. The HS has been through several iterations to get to its current state. As indicated above, the 2007 MP contains complex measures developed over time, ba
	status approaches (Flood et al. 2012) and the fishing strategy permitted is based on this status determination. The draft 2012/13 stock assessment presents information undertaken on survey data CPUE standardisation, suggesting that factors such as the region, vessel and tide direction have a

	significant effect. Further work to consider commercial CPUE standardisation (as in Recommendation 2 (SG1.2.3) of the assessment report) is planned and may have implications for future harvest strategy evaluation and development.
	The draft HS does not explicitly consider the role of prawns in the ecosystem. However, the assessors note that fishing for Western King Prawns in Western Australia and South Australia is considered to be of low risk to the trophic structures of these regions (Flood et al 2012). Prawns have very high natural mortality rates and make up only a small proportion of the total biomass on the trawl grounds and it is considered unlikely that the commercial take of prawns impacts significantly on other trophic levels (Flood et al 2012). MSC assessment of Australia's Northern Prawn Fishery does not identify prawns as low trophic level species. Given this information, the assessors consider that the reference points in the draft HS adequately address consideration of the ecological role of the stock.
	The revised MSC Certification Requirements (Version 1.3, 14 January 2013) refer to consideration under Pl 1.1.2 of whether a species is a key low trophic level species. Although it is unlikely that Western King Prawns would be regarded as a key low trophic level species when assessed against the MSC criteria, consideration will need to be given against these criteria at future MSC assessments of the species.
	In 2012 it was noted that SARDI had already obtained funding for a Commonwealth Research (\$187K over two years). The project objectives focus on harvest strategy evaluations and the modelling is intended to provide a robust basis for determining performance indicators and reference points (limit and target) to be used in the revised harvest strategy consistent with MSC SG requirements. The 2013 audit was informed that there had been difficulty recruiting a modeller for the project, however the work has commenced. Information has been collected and a modeller has been employed, with results anticipated in late 2014. It is unclear how this work will feed in to a future HS.
Year 4 Actions by SGWCPFA and management organisation	The MSC assessment of this PI for the SGPF was based on the 2007 Management Plan (MP) in place at that time. Subsequently, PIRSA established a Steering Committee, which first met in July 2012, to provide oversight in the development of an updated MP and HS. It had been anticipated that this revised MP and HS would be in place for the 3 <sup>rd</sup> surveillance audit for the fishery. Draft versions were available for the 3 <sup>rd</sup> surveillance audit; however the HS was not evaluated against this PI as it had not been formally adopted.
	The revised MP was adopted and implemented in 2014, in time for the 2014/15 fishing season. The finalised MP includes a harvest strategy (HS) with comprehensive specification of biological indicators and reference points, decision rules, and fishing strategies. PI 1.1.2 has been rescored on the basis of this HS. The HS attempts to bring together the key scientific monitoring, assessment and management elements to form an integrated package for decision making on the level of fishing intensity to be applied in the fishery.
	The 2012/13 and 2013/14 stock assessments present information undertaken on standardisation of survey data CPUE. A major function of this CPUE standardisation was to support the development of a bio-economic model for the fishery, which has now been undertaken. The main outputs of the model are WKP population and economic status based on reference points for MSY and maximum economic yield (MEY), and evaluation of 10-year projections of simulated management procedures for each fishery. It is anticipated that the model should be a useful tool for providing managers and stakeholders with improved information about the current status of the WKP stocks relative to their biological reference points, however the results are considered provisional and are not included in the current HS. The modelling of survey catch rates was undertaken on survey data from 2004/05 to 2013/14 (over which time a consistent survey methodology was used). The standardised model fit showed some difference from raw data over the available time series (Fig. 3.12 of Noell and Unemer 2015), but not the overall trend.

	survey and vessel were all highly significant; however there was a low overall goodness of fit (adjusted R <sup>2</sup> value 0.34). Although generally less than the nominal catch rate, standardised catch rates tracked the trend of nominal catch rate (Noell et al. 2014). Further work is planned to improve the survey catch standardisation. For those months in which surveys and commercial fishing have taken place since 2004/05, there is a high correlation between normalised survey and fishery CPUE, indicating that the survey CPUE is representative of abundance (Noell and Hooper, 2015).
Evidence Provided	PIRSA 2013. DRAFT Commercial South Australian Spencer Gulf Prawn Fishery Management Plan.
	PIRSA 2014. Management Plan for the Commercial South Australian Spencer Gulf Prawn Fishery.
	Dichmont, C. 2013 Review of draft SPGF Management Plan 2013 (July 2013 draft). Advice provided to PIRSA, CSIRO, August 2013.
	Dixon, C.D., C. J. Noell, and G.E. Hooper. SARDI Research Report series No 6853, March 2013 (http://www.sardi.sa.gov.au/data/assets/pdf_file/0004/183550/SPG_Prawn_11_12_Stock_A ssessment.pdf).
	Noell, C. J., Hooper, G. E. and Beckmann, C. L. (2014). Spencer Gulf Prawn <i>Penaeus (Melicertus) latisulcatus</i> Fishery 2012/13. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-7. SARDI Research Report Series No. 788. 84pp.
	Noell, C. J. and Hooper, G. E. (2015). Spencer Gulf Prawn <i>Penaeus (Melicertus) latisulcatus</i> Fishery 2013/14. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-8. SARDI Research Report Series No. 843. 68pp.
Conclusion	A standardised survey approach has now been used since 2004/05, with 3 surveys per year and a well-established survey design. CPUE standardisation of survey catch rate data has been undertaken but not yet integrated into the reference points in the HS. A major consideration in using nominal catch rate information in the HS is the use of real-time data from the fishery. Although the assessors support the need for ongoing development of catch rate standardisation, examination of nominal and standardised catch rates undertaken to date suggest the survey nominal catch rates are appropriate for use in the harvest strategy.
	As indicated at the 3 <sup>rd</sup> surveillance audit, the HS does not explicitly consider the role of prawns in the ecosystem. However, the assessors concluded that WKP are not a low trophic level species in the context of MSC assessment.
	A revised MP and HS were implemented in 2014. The revised HS incorporates a complex hierarchy of decision-making which guides management and performance measurement, with well-defined target, limit, and trigger reference points. On this basis, PI 1.1.2 has been re-scored at 90 as at Appendix 1.

1	
PI	2.3.3
Guidepost not	<ul> <li>Information is <u>sufficient</u> to determine whether the fishery may be a threat to protection</li> </ul>
met	and recovery of the ETP species, and if so, to measure trends and support a <u>full strategy</u> to
	manage impacts.
	<u>Sufficient data</u> are available to allow fishery related mortality and the impact of fishing to
	be <u>quantitatively</u> estimated for ETP species.
Condition	The strategy to achieve this should be in place by the first annual surveillance audit. The results should be available from the second annual review onwards (and used to assist the development of additional management mitigation measures, if deemed appropriate). The adequacy of information will be evaluated by the fourth surveillance audit.
	The client could consider the following :
	Logbooks can contain explicit reference to Syngnathid species and other FTP species
	indicating the state (dead, damaged or released alive).
	<ul> <li>Independent trawl surveys may be conducted to include data on the seasonal distribution</li> </ul>
	and abundance of Syngnathids, or any other FTP in trawled areas
	The distribution and abundance of FTPs in areas outside the trawl areas can be determined
	• The distribution and abundance of LTPs in areas outside the traw areas can be determined through independent surveys to develop an understanding of the success or otherwise of
	mitigation measures that are in place
Requirement	The strategy to achieve this should be in place by the first annual surveillance audit
by Year 1	
Requirement	The results should be incorporated into an annual by-catch report, commencing from the second
by Year 2	annual review onwards, which will be made available for public scrutiny, and used to assist the
	development of additional management mitigation measures, if deemed appropriate.
Requirement	No timeline set
by Year 3	
Requirement	Adequacy of information will be evaluated by the fourth surveillance audit.
by Year 4	
Action Plan	The commercial daily logbook, used by the fishery to record catch, was modified in 2011 to identify interactions with Threatened Endangered and Protected Species (TEPS) (including syngnathids) on a shot by shot basis. Additional details on each interaction are provided in a separate logbook that is specific to TEPS. The TEPS log books record the status of the animal when returned to the marine environment i.e. dead, alive etc. The Association will educate the license holders and skippers on the importance and legal obligation for reporting TEPS interactions.
	SARDI Aquatic Sciences collate and analyse data collected through the TEPS log books (cross referenced to the catch log books) and produce a regular TEPS by-catch report for PIRSA, which is made available to the public on its website. This first annual by-catch report will be implemented commencing from the second annual review.
	Fisheries Independent Surveys (FIS) will collect data on TEPS interactions. The FIS covers areas inside and outside fishing grounds at three different times per year (generally November, February and April). This will be used to report the spatial and temporal distribution and abundance of syngnathids (and other TEPS species) inside and outside trawl areas by the second annual surveillance.
	PIRSA will lead an Ecological Sustainable Development risk assessment for the Spencer Gulf prawn fishery (2011-12). Following this, PIRSA will also lead a by-catch risk assessment for the fishery, where all available data on by-catch is considered for all species of by-catch captured by the fishery. Syngnathids (and other TEPS species if identified through the assessment) will be critically examined during these processes. Mitigation measures will be developed based on the available

#### Condition 2: ETP information

	data and the success of these mitigation measures will be evaluated against 1) data from the long-term by-catch studies, 2) data from fishery-independent surveys and 3) data from TEPs logbook interactions. This will also contribute towards satisfying recommendation 6.
Actions by SGWCPFA and management organisation	The commercial daily logbook, used by the fishery to record catch, was modified in 2011 to include interactions with Threatened Endangered and Protected Species (TEPS) (including syngnathids) on a shot by shot basis.
	Additional details on each interaction are then provided in a separate logbook that is specific to TEPS. The TEPS log books record the status of the animal when returned to the marine environment i.e. dead, alive etc. The SGWCPFA will educate the license holders and skippers on the importance and legal obligation for reporting TEPS interactions.
	SARDI Aquatic Sciences collate and analyse data collected through the TEPS log books (cross referenced to the catch log books) and produce a regular TEPS by-catch report for PIRSA, which is made available to the public on its website. This second annual by-catch report was produced in February 2014 and contains details on TEP interactions for the years 2009/10 to 2012/2013. The bycatch annual report now includes TEP bycatch details by fishery. The third annual report is available in draft only, but soon to be published.
	The Association strengthened the process of data collection with 'Information sessions' (SGWCPFA, 2013) for crews. These were preceded with a letter to all vessel owners informing them of the sessions in Port Lincoln and Adelaide/Wallaroo (Clark, 2011).
	Fisheries Independent Surveys (FIS) collect data on TEPS interactions. The FIS covers areas of variable fishing intensity, from areas that are closed to high trawl areas at three different times per year (generally November, February and April). This is used to report the spatial and temporal distribution and abundance of syngnathids (and other TEPS species).
	PIRSA undertook an Ecological Sustainable Development RA for the Spencer Gulf prawn fishery (2012), now completed, applying the Hobday <i>et a</i> l, 2007 methodology. The assessment workshops included multiple stakeholders including fishers, CCSA, scientists and fishery managers (The Expert Panel). Species, including ETPs were categorized into risk levels and included <i>Filipcampus tigries</i> (Tiger pipefish) and <i>Histiogamphilus cristatus</i> (Rhino pipefish) as medium and low risk species. There was only one individual recorded in the by-catch survey which occurred in the Wardang closure area (Currie et al. 2009). Tiger Pipefish (Filicampus tigris) is distributed throughout the subtropics from Queensland to northern Western Australia, and Spencer Gulf and Gulf St Vincent (Gomon et al. 2008). The South Australian gulf populations are a tropic relic of more widespread distribution of this species. The ESD RA was subject to an external Peer Review. This report was made available to the public in November 2013 (http://pir.sa.gov.au/data/assets/pdf_file/0007/232477/FINAL_ESD_risk_assessment_of_Sout h_Australias_SGPF_July_2014.pdf).
	The Management Committee of the SGWCPFA has been proactive in voluntarily closing areas known or likely to include preferred habitat of syngnathids, and have advised PIRSA that an increase in the size of the closure at Wardang to further protect syngnathids has taken place voluntarily. The expert panel agreed that the Tiger pipefish species required further consideration of current management arrangements. The expert panel agreed that further risk mitigation strategies should be investigated in conjunctions with those developed for other sygnathids. Information on post capture mortality, or introduction of strategies that increase survival of tiger pipefish (and other sygnathids) is considered likely to reduce the level of risk. The Management Plan contains the Reference Point Indicator 'TEPS number/ hectare monitored and reported in EBFM reports regularly'.

SARDI, 2011a, South Australia Western King Frawn Daily Logbook form SARDI, 2011b, South Australia managed fisheries, Wildlife Interaction form Tsolos A and Boyle M, Interactions with Threatened, Endangered and Protected species, in South			
SARDI, 2011b, South Australia managed fisheries, Wildlife Interaction form Tsolos A and Boyle M, Interactions with Threatened, Endangered and Protected species, in South			
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Clark, S, 2011, Letter from SGWCPFA. Crew briefings on threatened, endangered and protected species			
SGWCPFA, 2011b, Report all captures of threatened endangered & protected species. Knight, M., and Vainickis, A., F2009/F0005444-2, SARDI Report Series, 593, December 2011, available at			
http://pir.sa.gov.au/ data/assets/pdf file/0015/232107/Interactions with Threatened, Endan gered or Protected Species in South Australian Managed Fisheries - 2008 09, 2009 10, and 2010 11pdf.pdf			
The condition has now been achieved with the TEP logbook initiated and SARDI reports. The trawl surveys now specifically record <i>Filipcampus tigries</i> (Tiger pipefish) and <i>Histiogamphilus cristatus</i> (Rhino pipefish) from September 2014. The ESD report (PIRSA, 2014) was published and is available on the PIRSA website (http://pir.sa.gov.au/ data/assets/pdf file/0007/232477/FINAL ESD risk assessment of Sout h Australias SGPF July 2014.pdf). This condition has now been closed. The performance indicator is re-scored to 80			
A S P(lh Sc2 Cs SKahg Ts(la(lhir			

#### Condition 3: Habitat information

PI	2.4.3		
Guidepost not	• The nature, distribution and vulnerability of all main habitat types in the fishery		
met	area are known at a level of detail relevant to the scale and intensity of the fishery.		
Condition	A detailed plan to achieve this should be in place at the first annual surveillance audit. The results on benthic interactions should be available from the second annual review onwards (and used to assist the development of additional management mitigation measures, if deemed appropriate). The adequacy of information will be evaluated by the fourth surveillance audit. The Condition is to strengthen the information available to allow any detection of an increase in risk to habitat as a result of fishing or other exogenous environmental variables, within the Gulf		
Requirement by	A detailed plan to achieve this should be in place at the first annual surveillance audit.		
Year 1			
Requirement by	Evidence that this condition has been implemented, will be required by the second		
Year 2	annual review and available to the public		

Requirement by	No milestones set for year 3			
Year 3				
Requirement by Year 4	The adequacy of information will be evaluated by the fourth surveillance audit.			
Action Plan	As per condition 2, PIRSA will lead an Ecological Sustainable Development risk assessment, as a step in developing the new management plan, which will identify the components, including habitats and species, at risk from interactions from prawn trawling.			
	<ul> <li>The ESD risk assessment will be used to develop an Environmental Evaluation Plan by the first annual audit. The "Environmental Evaluation" plan will include: <ol> <li>Assessments of the available data on environmental impacts of the prawn fishery in Spencer Gulf;</li> <li>Recommendations for appropriate on-going measures and timescales for environmental assessment;</li> <li>Recommendations for potential performance indicators for environmental assessment.</li> </ol></li></ul>			
	This plan will assess the on-going measures and time scales for environmental assessment. Data from the FIS and fishing log books will also be incorporated in the model. This plan will provide a basis for on-going reporting of by-catch on a short term and long term scale. It will inform the annual by-catch report, commencing from the second annual review, which will subsequently be made publicly available. The report will be used to assist the development of additional management mitigation measures, if needed.			
Actions by SGWCPFA and management organisation	FRDC funding has supported a project led by SARDI, with PIRSA support and involvement, to provide a reporting framework for an ecosystem based assessment of the Spencer Gulf, including provision to strengthen information available to allow detection of an increase in risk to habitats and strengthening monitoring of information to assess distribution and abundance of benthic species. The project collated existing data and information from various research projects previously conducted for the Spencer Gulf Prawn Fishery, and incorporated the results of ongoing work conducted in research surveys, and from the SGWCPFC observer programme. The work also included analysis of two existing data sources: 1) GPS data gathered for 30% of all trawl shots conducted in the Spencer Gulf Prawn Fishery since 2002/003. GPS data was provided by fishers as the centre point of a trawl shot, and with assumptions regarding the direction and distance of trawls based on catch and effort data and fisher knowledge, the area trawled and percentage overlap of trawl shots was used to examine the historic trawl footprint and to determine reference points for performance indicators to manage the footprint. 2) Core sediment samples including those in storage and new, were analysed for the trawled and non-trawled areas of the Gulf. These were analysed for substrate structure which was used to assess habitat, and provide core data to evaluate any future risk assessment.			
Duidonaa	exogenous environmental variables, within the Gulf.			
Provided	fisheries – a case study of the Australian Spencer Gulf Prawn Fishery (SGPF), FRDC Project No 2011/062			
	S. Mayfield, G.J. Ferguson, R.C. Chick, C.D. Dixon and C. Noell, A reporting framework for			

	ecosystem-based assessment of Australian prawn trawl fisheries: a Spencer Gulf prawn			
	1 rawi lishery case study, RDC Project No. 2011/062 ISBN: 978-1-921563-70-6 December			
	2014			
Conclusion	The condition is now closed. There are no spatial changes in footprint (Mayfield <i>et al</i> ,			
	2014). The assessors were conscious of the WWF submission made in 2013 such that the			
	revised Management Plan should provide mechanisms/performance measures that			
	ensure the footprint of the fishery is not expanded, no new areas are opened to			
	trawling, and that sensitive habitats such as sponge beds identified by Currie et al 2009			
	are demonstrably protected. The Spencer Gulf Management Plan allows for no changes			
	by more than 2% from historic maximum annual fishing footprint. The assessors			
	reviewed this component and concluded that it was acceptable to allow some margin of			
	error without knowing what the baseline calculations were. The assessors have			
	requested that that the baseline is established to provide a basis for the current trigger.			
	This is now underway with a study initiated to develop specific reference points for real			
	time spatial management and to evaluate impacts of the fishery on the ecosystem			
	through ongoing monitoring of selected species incidentally taken as by-catch. The			
	condition has been met, and the assessors understand the rationale for developing			
	specific footprint reference points. This condition has now been closed. The performance			
	indicator is re-scored to 80.			
Recommendation	The recommendation is to ensure that the proposed research plan is implemented.			

### Condition 4: Ecosystem information

PI	2.5.3		
Guidepost not met	• The main functions of the Components (i.e. target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are <u>known</u> .		
Condition	Based on the outputs from Condition 2 and 3, and Recommendation 3, continuous information should be collected in order to detect the ecosystem outcomes of management measures implemented under the management strategy, once in full operation.		
Requirement by Year 1	A detailed plan to achieve this should be in place at the first annual surveillance audit.		
Requirement by Year 2	The information should be presented in the annual by-catch report, identifying any possible risks to the trophic balance. Evidence that this condition has been implemented, will be required by the second annual review (2013).		
Action Plan       The Environmental Evaluation Plan described under Condition 3 will examine av         inform potential risks to trophic level impacts of the fishery, and will recomment         requirements to report on these risks annually, to be completed by the second a         Data considered will include: long-term data from independent by-catch survey.         every 7 years; fishery-independent survey data collected 3 times every year.         A joint research proposal has recently been developed between SARDI, Adelaide         Flinders University. This project aims to develop an ecosystem model for Spence         Collaboration on this project (if the grant application is successful) could enable			
	examination of the ecosystem effects of prawn trawling in Spencer Gulf.		
Actions by	FRDC funding was been obtained for a project led by the University of Adelaide, with PIRSA		
SGWCPFA	and SARDI support (University of Adelaide 2011) aims to develop a system model for the		
and	Spencer Gulf, building on work already completed for the GAB (Goldsworthy et al0. Data to		
management	populate the model will be drawn from prawn stock assessment surveys and the commercial		

organisation	fishery. The project may provide a useful basis for broad understanding of features of the				
	Spencer Gulf ecosystem but it is unclear that the proposed modelling will provide any				
	predictive capability or the ability to test management measures that might be implemented				
	under the Management Plan (as called for in condition 4).				
	The analysis determined the general species abundance, biomass and richness and				
	determined the community structure from current and past trawl intensity. The work				
	concludes that the community structure is well separated by region and is substantially dr				
	by salinity and depth gradients. There is also no evidence for recent (5 years) trawl intensity				
	related differences in community structure.				
Evidence	University of Adelaide 2011, Spencer Gulf Research Initiative: development of an ecosystem				
Provided	model for fisheries and aquaculture Goldsworthy, S.D. B. Page, P. J. Rogers, C. Bulman,				
	A.Wiebkin, L. McLeay, L. Einoder, A.M.M. Baylis, M. Braley, R. Caines, K. Daly, C. Huveneers,				
	Peters, A.D. Lowther, T.M. Ward (in prep.) Trophodynamics of the eastern Great Australian				
	Bight ecosystem: ecological change associated with the growth of Australia's largest fishery				
	(supplied during meeting)				
Conclusion	The Condition is now closed with all the elements of the condition have been achieved is				
	made available in the ESD report, which is available for public review				
	(http://pir.sa.gov.au/ data/assets/pdf file/0007/232477/FINAL ESD risk assessment of S				
	outh <u>Australias_SGPF_July_2014.pdf</u> ). This condition has now been closed. The performance				
	indicator is re-scored to 80.				

#### Condition 5:

Condition 5 was achieved during Year 1, and this condition was closed at the time of the first surveillance audit. Evidence continues to suggest that ENGOs remain involved in the critical consultation phases, and the partnership between the SGWCPFA and CCSA continues to work well. In response to these actions, this outcome was rescored at SG 100.

PI	3.2.4		
Guidepost not met	• A <u>research plan</u> provides the management system with a strategic approach to research and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.		
Condition	A Research Plan is required to clearly outline the strategically important activities as appropriate to achieving fishery-specific and ecosystem-orientated research outputs consistent with the management plan. A strategic research plan should be formulated in agreement with all significant stakeholders.		
Requirement by Year 4	The condition is required to be implemented by year 4. No specific actions are required by year 2.		
Action Plan	SARDI will draft a "plan" as mentioned in the CAP at condition 3 to take into consideration trophodynamics; benthic habitats; by-catch and by-product, and TEPS, collating existing data. This will inform the research plan.		
	A research plan will be developed with the new Management Plan. The Research Sub- committee will develop a strategy to implement and prioritise research projects, which will support ecosystem-orientated research outputs and fisheries specific programs which will be reviewed biannually from the implementation of the new Management Plan (2013).		
Actions by	PIRSA has established a Management Plan Steering Committee which first met in mid-2012		
SGWCPFA and	and has provided oversight of the Management Plan (MP) development. In the current draft		
management	MP at section 11 on Stock Assessment and Research, section 11.6 provides for a "Strategic		

organisation	Research Plan" developed by the SGWCPFA. The final research plan, dated May, 2014 was			
	developed by the SGWCPFA Management Committee Research Subcommittee (SGWCPFA,			
	2014). The plan includes a list of current, future planned, and "aspirational" projects, and			
	includes specific reference to fits within this timeframe and there is evidence that the revised			
	research plan addresses fishery-specific and ecosystem oorientated research outputs that ar			
	consistent with the outcomes of the management plan. Research results are disseminated to			
	all interested parties in a <u>timely</u> fashion.			
Evidence Provided	PIRSA Management Plan for the South Australian Spencer Gulf Prawn Fishery, 2014-2019			
	SGWCPFA, Research Plan, May, 2014.			
Conclusion	This condition has now been met and has been closed. The performance indicator is re-			
	scored to 90.			

#### Condition 7: Performance evaluation

PI	3.2.5			
Guidepost not met	The fishery has in place mechanisms to evaluate key parts of the management system and is			
	subject to regular internal and occasional external review.			
Condition	SARDI and the SGWCPFA Research Plans and their outputs are subject to independent			
	external review once formulated. In addition, the performance of the Management Plan			
	should be subject to regular internal review and occasional external review. A plan for			
	reviews will be evaluated during the first annual surveillance audit, and reviews appraised at			
	each annual surveillance audit as appropriate. The external review will have been completed			
	by the fourth surveillance audit (2015).			
Requirement by	The condition is required to be implemented by year 4			
Year4				
Action Plan	There is no specified requirement for this PI to be met within the second surveillance audit			
Actions by	SARDI Research reports funded by FRDC have been subject to external review. These include			
SGWCPFA and	reports commissioned in response to the conditions set (Mayfield, 2014, Steer, 2015) and			
management	other reports such as the bio economic model for South Australian Prawn Trawl Fisheries			
organisation	(Noell <i>et al</i> ). Two other critical documents supporting the assessment, the PIRSA ESD and the			
	SARDI reporting framework for ecosystem-based assessment, had been subject to external			
	review.			
	SARDI continues to apply a system of internal review for its publications.			
	PIRSA's Draft Management Plan had been subject to external review (Dichmont, August,			
	2013). In response, PIRSA modified the definitions in then Harvest Strategy.			
Evidence Provided	Reports as previously cited.			
	PIRSA Commercial South Australian Spencer Gulf Prawn Fishery Management Plan			
	Dishusent, C. Deview of Deoft CODE Management Disk 2012 July 2012			
	Dichmont, C., Review of Draft SGPF Management Plan 2013 July 2013			
Conclusion	Evidence is in place that both PIKSA and SAKUI are applying both regular internal and			
	external reviews to documents supporting the management arrangements. The assessors			
	were satisfied that these processes were being applied well. The assessors confirm that this			
Deserves and at	condition is now closed. The performance indicator has been re-scored to 100.			
Recommendation	I The SG prawn trawl stock assessment be subject to occasional external review			

### 6 Conclusions and Recommendations

#### 6.1 **Progress relative to milestones**

The assessors found that all the Conditions have been met by the time of the fourth annual audits.

### 6.2 Closed-out conditions

Conditions 1, 2, 3, 4, 5, 6 and 7 are closed out.

### 6.3 Surveillance

This is the final surveillance of the current certification period. Surveillance following reassessment will depend on the results of the re-assessment.

### 6.4 Certification Decision

The MRAG Americas Certification Committee concurs that the certification of the Spencer Gulf prawn fishery against the MSC Principles and Criteria for Sustainable Fishing be continued for a further year

# Appendix 1. Re-scoring evaluation tables

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scorin	g Issue	SG 60	SG 80	SG 100
а	Guide post	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	Y	Y	
	Justific ation	A new Management Pla applies to the 2014/15 f HS for the fishery (ref M making which guides ma estimation of the stock s within-season level. The (overfished, transitional, fishing strategies (No fis Reference points for the of adult prawns from the the previous fishing sease post-Christmas component most recent SAS or indu season management arr previous management p at sustainable levels for based on adult and recru Estimation of B <sub>MSY</sub> for the leading to unrealistically estimation of B <sub>MSY</sub> in the been developed for the population and econom economic yield (MEY), a management procedure the model should be a u improved information a biological reference point not included in the curre Although B <sub>MSY</sub> has not re- indicates a healthy sustation above B <sub>MSY</sub> over this per- fishing over its recorded interpreted to i) relate in	new Management Plant for the SGPF was implemented oplies to the 2014/15 fishing year. An important element S for the fishery (ref MP). The HS involves a complex hier iaking which guides management and performance mea- stimation of the stock status at the annual level and ther ithin-season level. The upper annual level provides 3 sto <i>overfished, transitional, sustainable</i> ), and the within-seas shing strategies ( <i>No fishing, transitional, conservative, st</i> eference points for the annual indicator are based on the f adult prawns from the 3 fishery independent stock asse ne previous fishing season. The within season fishing stra ost-Christmas components, with reference points based nost recent SAS or industry spot survey when SASs are no eason management arrangements have evolved from fish revious management plans which have proven effective t sustainable levels for over 40 years. The within season ased on adult and recruit catch rates from the SASs. stimation of B <sub>MSY</sub> for the fishery has been problematic, w adding to unrealistically high estimates of MSY (MRAG 20 stimation of B <sub>MSY</sub> in the assessment process. However, a een developed for the fishery. The main outputs of the n opulation and economic status based on reference point conomic yield (MEY), and evaluation of 10-year projectic nanagement procedures for the fishery (Noell et al. 2015 ne model should be a useful tool for providing managers nproved information about the current status of the WK iological reference points, however the results are consid ot included in the current HS. Ithough B <sub>MSY</sub> has not reliably been determined, the histo redicates a healthy sustainable stock over time and sugges bove B <sub>MSY</sub> over this period. The fishery has shown no ind shing over its recorded history. The survey-based catch r	

PI 1.1.2		Limit and target reference points are appropriate for the stock			
		B <sub>MSY</sub> , and ii) providing limits and constraints sufficient to ensure that there is no appreciable risk of impaired reproductive capacity The direct, empirically-based reference points used for WKP in the SGPF are suited to their biology and life history, meeting SG 60 and SG 80 requirements of being appropriate for the stock and able to be estimated.			
b	Guide post		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.	
	Met?		Y	Υ	
	Justific	ustific tionThe full set of reference points includes a wide range of in-season and annual measures which are used to guide annual harvest strategy setting and in-season, adaptive management. Some, not all, of these need to be considered in defining the target biomass and limits. Several reference points in the 2014 MP are effectively trigger reference points, allowing limited fishing effort. The major limit reference point is derived from the annual weighted average of CPUE of adult prawns from the 3 SASs of the previous fishing year. These averages have ranged between 3.53 and 4.5 lb/min from 2004 to 2013. Given the indications that the stock has been maintained at or above B <sub>MSY</sub> over this period, the lower value (3.5 lb/min) is considered indicative of the stock being at B <sub>MSY</sub> . Setting a reference value at half of B <sub>MSY</sub> has been used in other fisheries as a limit reference point (i.e 1.75 lb/min)(reference). No fishing occurs under the HS if the annual average adu catch rate is below this level. WKP are short-lived and highly fecund, indicating a propensity for resilience to fishing pressure. The combination of the LRP and other measures in the HS to adopt conservative fishing strategies suggest there is not a appreciable risk of impairing reproductive capacity. There is no explicit account taken of uncertainty in stock dynamics and reference point measurement, however the use of a wide set of reference points provides a means of defending against annual uncertainty in estimation and application. The LRP is set above the level at which there is an appreciable risk of impairing reproductive capacity, meeting SG80. "Transitional" fishing strategies are adopted when the annual adu catch rate is above the LRP but below a defined trigger level (2.5 lb/min). This is a precautionary approach sufficient to meet SG100 guidelines.			
	ation				
С	Guide post		The target reference point is such that the stock is maintained at a level consistent with B <sub>MSY</sub> or some measure or surrogate with similar intent or	The target reference point is such that the stock is maintained at a level consistent with B <sub>MSY</sub> or some measure or surrogate with similar intent or outcome, or a higher level, and takes into	

PI 1.1.2		Limit and target reference points are appropriate for the stock			
			outcome.	account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.	
	Met?		Y	N	
	Justific ation	As discussed above, there is an annual decision-making component at an upper annual level with additional within-season decision-making arrangements. As with the LRP, the major target reference point is based on the catch per unit of effort of adult prawns from the 3 fishery independent SASs in the previous fishing season. Annual catches have fluctuated around 2000 t, without trend, since the mid- 1970s. Over the history of the fishery, catches have only fallen below 1500 t when the pre-Christmas (i.e. October/December) catches in the previous seasons have exceeded 500 t. The lowest catch of 1048 t over this period was taken in 1986/87 following consecutive years of pre-Christmas catch exceeding 500 t in 1981/82 and 1982/83 (Noell and Hooper 2015).			
The targ from the lower el indication the lower The stoon target re leads to strategi on catch not avain fisheries effective within s SASs an depend		The target reference po from the annual weight lower end of the range of indications that the stor the lower value of 3.5 lb The stock is assessed to target reference point. A leads to a "sustainable" strategies have pre- and on catch rates from the not available. The within fisheries operations und effective in maintaining within season reference SASs and lead to "conse depending on size-based the area of the fishery o	point is an adult average catch rate of 3.5 lb/min, derived ghted average of the SASs from 2004 to 2013. This is at the ge of values over that period (3.53 to 4.5 lb/min). Given the tock has been maintained at or above B <sub>MSY</sub> over this period, 5 lb/min is considered indicative of the stock being at B <sub>MSY</sub> . to be sustainable if the annual catch rate value is above this nt. An annual catch rate of greater than or equal to 2.5 lb/min <i>le</i> " fishing strategy under the HS. Within-season fishing and post-Christmas components, with reference points based he most recent SAS or industry spot survey when SASs are thin season management arrangements have evolved from under previous management plans which have proven ing the stocks at sustainable levels for over 40 years. The nce points are based on adult and recruit catch rates from the <i>nservative</i> ", <i>"standard</i> " or <i>"increasing</i> " fishing strategies ased information from the surveys. These strategies vary in		
		The target reference po fishing strategy for the s catch rates and a good s likely to maintain stock s considered to have a sin MP does incorporate Ec ESD risk assessment of t Aquaculture has also ad Reporting Framework for approaches and manage account the ecological r accounted for with a hig not met.	int, combined with the dec eason, are sufficient to ma ize distribution of prawns. size at or above B <sub>MSY</sub> . The r nilar intent and outcome a ologically Sustainable Deve he fishery has been under opted the 'National Ecolog or Fisheries', developed by ement of the stock at susta ole of the stock, however t sh degree of certainty in th	cision rules determining the aintain annual catches, high . Overall, the approach is highly measures used here are as B <sub>MSY</sub> , meeting SG80. The 2014 elopment (ESD) objectives and taken. PIRSA Fisheries and gically Sustainable Development Fletcher et al. (2002). These ainable levels implicitly take into the ecological role is not the approaches taken. SG100 is	

PI 1.1.2		Limit and target reference points are appropriate for the stock			
d	Guide post		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.		
	Met?		Not relevant		
	Justific ation	The assessors consider the MSC assessment and than consideration of the ecological second sec	hat WKP is not a low troph at the reference points in t logical role of the stock.	nic level species in the co he draft HS adequately a	ntext of ddress
References		Noell, C. J. and Hooper, G. E. (2015). Spencer Gulf Prawn <i>Penaeus (Melicertus)</i> <i>latisulcatus</i> Fishery 2013/14. Fishery Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000770-8. SARDI Research Report Series No. 843. 68pp.			
		Noell, C.J., O'Neill, M.F., Carroll, J.D. and Dixon, C.D. (2015). A bio-economic model for South Australia's prawn trawl fisheries. Final Report. Prepared by the South Australian Research and Development Institute (Aquatic Sciences), Adelaide. CRC Project No. 2011/750. 115pp.			
		PIRSA 2014. Management Plan for the Commercial South Australian Spencer Gulf Prawn Fishery.			
		Fletcher, W. J., Chesson, J., Fisher, M., Sainsbury, K. J., Hundloe, T., Smith, A. D. M. & Whitworth, B. (2002). National ESD reporting framework for Australian fisheries: the 'how to' guide for wild capture fisheries. FRDC Project 2000/145. Fisheries Research and Development Corporation, Canberra.			
OVER	ALL PERFC	DRMANCE INDICATOR SCC	DRE:		90

PI 2.3	3.3	<ul> <li>Relevant information is collected to support the management of fishery impacts on ETP species, including:         <ul> <li>Information for the development of the management strategy;</li> <li>Information to assess the effectiveness of the management strategy; and</li> <li>Information to determine the outcome status of ETP species.</li> </ul> </li> </ul>			
Scorin	g Issue	SG 60	SG 80	SG 100	
A	Guide post	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.	

		Relevant information is collected to support the management of fishery impacts			
on ETP species, includin			g: the development of the r		
• Information for the deve			the development of the n	f the management strategy;	
<ul> <li>Information to determine the outcome status of ETD energies</li> </ul>			ratus of FTP species.		
	Met?	Y	Y		
	lustific	The commercial daily los	hook used by the fishery	to record catch was modified in	
	ation	2011 to include interact	ions with Threatened Enda	angered and Protected Species	
		(TEPS) (including syngna	thids) on a shot by shot ba	asis.	
		Additional details on each interaction are then provided in a separate logbook that is specific to TEPS. The TEPS log books record the status of the animal when returned to the marine environment i.e. dead, alive etc. The SGWCPEA will			
		educate the license hold for reporting TEPS intera	lers and skippers on the in actions.	nportance and legal obligation	
		SARDI Aquatic Sciences collate and analyse data collected through the TEPS log books (cross referenced to the catch log books) and produce a regular TEPS by- catch report for PIRSA, which is made available to the public on its website. This second annual by-catch report was produced in February 2014 and contains			
		details on TEP interactions for the years 2009/10 to 2012/2013. The bycatch annual report now includes TEP bycatch details by fishery. The third annual report is available in draft only, but soon to be published.			
		The Association strengthened the process of data collection with 'Information sessions' (SGWCPFA, 2013) for crews. These were preceded with a letter to all vessel owners informing them of the sessions in Port Lincoln and Adelaide/Wallaroo (Clark, 2011).			
		Fisheries Independent Surveys (FIS) collect data on TEPS interactions. The FIS covers areas of variable fishing intensity, from areas that are closed to high trawl areas at three different times per year (generally November, February and April). This is used to report the spatial and temporal distribution and abundance of syngmathids (and other TEPS species).			
В	Guide	Information is	Information is	Accurate and verifiable	
	post	adequate to broadly	sufficient to determine	information is available on the	
		understand the impact	whether the fishery	magnitude of all impacts,	
		species.	protection and	consequences for the status of	
			recovery of the ETP	ETP species.	
			species.		
	Met?	Y	Y		
	Justific	PIRSA undertook an Eco	ological Sustainable Devel	opment RA for the Spencer Gulf	
	ation	prawn fishery (2012), methodology. The asses fishers, CCSA, scientist	now completed, apply sment workshops included s and fishery managers	ing the Hobday <i>et a</i> l, 2007 d multiple stakeholders including s (The Expert Panel). Species, and included <i>Eilingampus tignies</i>	

		Relevant information is collected to support the management of fishery impacts				
		on ETP species, including:				
PI 2.3	3.3	<ul> <li>Information for the development of the management strategy;</li> </ul>				
		Information to	assess the effectiveness o	f the management strategy; and		
		Information to	determine the outcome s	tatus of ETP species.		
		(Tiger pipefish) and Hist	tiogamphilus cristatus (Rh	ino pipefish) as medium and low		
		risk species. There was only one individual recorded in the by-catch survey which				
		occurred in the Wardang closure area (Currie et al. 2009). Tiger Pipefish				
		(Filicampus tigris) is dis	stributed throughout the	subtropics from Queensland to		
		northern Western Aust	ralia, and Spencer Gulf ar	nd Gulf St Vincent (Gomon et al.		
		2008). The South Austra	alian gulf populations are a	a tropic relic of more widespread		
		distribution of this spec	cies. The ESD RA was sub	iect to an external Peer Review.		
		This report was m	ade available to the	public in November 2013		
		(http://pir.sa.gov.au/	data/assets/pdf_file/0007	/232477/FINAL_ESD_risk_assess		
		ment of South Austral	ias SGPF July 2014.pdf).	,202,,		
С	Guide	Information is	Information is	Information is adequate to		
•	post	adequate to support	sufficient to measure	support a comprehensive		
	• • • • •	measures to manage	trends and support a	strategy to manage impacts.		
		the impacts on ETP	full strategy to manage	minimize mortality and injury		
		species.	impacts on ETP	of ETP species, and evaluate		
			species.	with a high degree of certainty		
				whether a strategy is achieving		
				its objectives.		
	Met?	γ	γ			
	Instific	The Management Comp	l nittee of the SGW/CPEA hav	s been proactive in voluntarily		
	ation	closing areas known or likely to include preferred babitat of syngnathids, and have				
	unon	advised PIRSA that an increase in the size of the closure at Wardang to further				
		protect syngnathids has	taken place voluntarily. T	he expert panel agreed that the		
		Tiger pipefish species re	quired further considerati	on of current management		
		arrangements. The expert nanel agreed that further risk mitigation strategies				
		should be investigated in conjunctions with those developed for other sygnathids.				
		Information on post capture mortality, or introduction of strategies that increase				
		survival of tiger pipefish	(and other sygnathids) is	considered likely to reduce the		
		level of risk. The Manag	ement Plan contains the R	eference Point Indicator 'TEPS		
		number/ hectare monitored and reported in EBFM reports regularly'.				
		SARDI. 2011a. South Au	stralia Western King Prawi	n Daily Logbook form		
		SARDI, 2011b, South Au	stralia managed fisheries,	Wildlife Interaction form		
			0 ,			
		Tsolos A and Boyle M, Ir	nteractions with Threatene	ed, Endangered and Protected		
		species, in South Austra	lian Managed Fisheries, 20	012/2013).		
Refere	ences		<b>°</b>	. ,		
		SGWCPFA, 2011a, TEP Ir	nformation sessions, Octol	ber, 2013		
		PIRSA, ESD Risk Assessm	ent of South Australia's S	pencer Gulf Prawn Fishery,		
		November 2013	·			
		(http://pir.sa.gov.au/	data/assets/pdf_file/0007	/232477/FINAL_ESD_risk_assess		

	Relevant information is collected to support the management of fishery in	npacts	
	on ETP species, including:		
PI 2.3.3	<ul> <li>Information for the development of the management strategy;</li> </ul>		
	<ul> <li>Information to assess the effectiveness of the management strate</li> </ul>	gy; and	
	Information to determine the outcome status of ETP species.		
	ment_of_South_Australias_SGPF_July_2014.pdf)		
	SARDI, A reporting framework for ecosystem based assessment of Australian trawl		
	fisheries – a case study of the South Australian Spencer Gulf Prawn Trawl Fishery		
	(SGPF). FRDC Project No 2011/062		
	Clark, S, 2011, Letter from SGWCPFA. Crew briefings on threatened, endangered		
	and protected species		
	SCINCEEA 2011b Bapart all cantures of threatened and angered & protect	ad	
	species	eu	
	Species. Knight M and Vainickis A E2009/E00051111-2 SARDI Report Series 593		
	December 2011 available at		
	http://nir.sa.gov.au/ data/assets/ndf_file/0015/232107/Interactions_wit	h Thre	
	atened. Endangered or Protected Species in South Australian Manage	d Fishe	
	ries - 2008 09, 2009 10, and 2010 11pdf.pdf		
OVERALL PERFO	DRMANCE INDICATOR SCORE:	80	

PI 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 are the			sed to habitat types by the anage impacts on habitat types	
Scoring Issue		SG 60	SG 80	SG 100
A	Guide post	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	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.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	Y	Y	
	Justific ation	The Spencer Gulf has divention of the second system a There is sufficient data a on trawl logbooks data. caused by fishing as opp et al 2005, Mayfield, et al	verse marine fauna and flo nd variations in physical a available to map the areas There is data available to s poses to natural variable of al 2014).	ora and has a complex ttributes (Svane <i>et al</i> 2007) that are heavily trawled based separate the benthic damage f salinity and temperature (Dixon
В	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	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.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	Y	Y	
Justific ation FRDC funding has support involvement, to provid assessment of the Spen available to allow detect monitoring of informatio The project collated exis previously conducted for results of ongoing work observer programme. Th 1) GPS data gathered for Prawn Fishery since 200 point of a trawl shot, and trawls based on catch ar percentage overlap of tra		borted a project led by de a reporting framewoncer Gulf, including provinction of an increase in rist on to assess distribution and sting data and information or the Spencer Gulf Prawoko conducted in research so he work also included and for 30% of all trawl shots 02/003. GPS data was produced and fisher low d with assumptions regard nd effort data and fisher low rawl shots was used to example	SARDI, with PIRSA support and york for an ecosystem based ision to strengthen information sk to habitats and strengthening and abundance of benthic species. In from various research projects in Fishery, and incorporated the surveys, and from the SGWCPFC lysis of two existing data sources: a conducted in the Spencer Gulf rovided by fishers as the centre ding the direction and distance of knowledge, the area trawled and amine the historic trawl footprint	

PI 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			
		and to determine reference points for performance indicators to manage the footprint. 2) Core sediment samples including those in storage and new, were analysed for the trawled and non-trawled areas of the Gulf. These were analysed for substrate structure which was used to assess habitat, and provide core data to evaluate any future risk assessment.			
C	Guide post		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).	Changes in habitat distributions over time measured.	are
	Met? Justific ation	Y The results from the ass measures changes in the to allow any detection o other exogenous environ	Y essment work provide an e footprint. This will stren f an increase in risk to hab nmental variables, within t	adequate basis from which gthen the information av bitat as a result of fishing the Gulf.	ch to ailable or
Refere	SARDI, 2013. A reporting framework for ecosystem based assessment of Aust trawl fisheries – a case study of the Australian Spencer Gulf Prawn Fishery (SC FRDC Project No 2011/062         S. Mayfield, G.J. Ferguson, R.C. Chick, C.D. Dixon and C. Noell, A reporting framework for ecosystem-based assessment of Australian prawn trawl fisher         Spencer Gulf prawn trawl fishery case study, RDC Project No. 2011/062 ISBN: 1-921563-70-6 December 2014		ustralian (SGPF), eries: a N: 978-		
OVER	ALL PERFC	ORMANCE INDICATOR SCO	ORE:		80

#### **Evaluation Table for PI 2.5.3**

PI 2.5	5.3	There is adequate knowledge of the impacts of the fishery on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
Α	Guide	Information is	Information is	
	post	adequate to identify	adequate to broadly	
		the key elements of	understand the key	
		the ecosystem (e.g.,	elements of the	
		trophic structure and	ecosystem.	
		function, community		
		composition,		
		productivity pattern		

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
		and biodiversity).		
	Met?	Y	Y	
	Justific ation	Present information sug sufficient detail in the re no evidence of trophic c associated species.	gests that main ecosystem esearch to determine the i cascades in any of the asso	n impacts are known and there is mpacts on the fishery. There is ciated species bycatches or
В	Guide post	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail.	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated in detail.
	Met?	Y	Y	
	Justific ation	Research has been car Prawn fishery to develo through information of	ried out by SARDI in cor p understanding towards the bycatch mortality and	njunction with the Spencer Gulf a marine trophic dynamic model recapture.
С	Guide post		The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.	The impacts of the fishery on target, Bycatch, Retained and ETP species are identified and the main functions of these Components in the ecosystem are understood.
	Met?	Y	Y	
	Justific ation	There is good understar species and their popula ecosystems and local en 2015).	ding of the ecological link ation facilitating a broader wironments where trawlin	s between important bycatch understanding of the current g operations occur (Mayfield,
D	Guide post		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.	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?	Y	Y	
	Justific ation	Data collection for the fishery and research on the components and elements of the ecosystem allow some of the main consequences to be inferred, meeting SG 80 requirements. A risk assessment of the components in the ecosystem (target, bycatch, retained and ETP species) has been conducted through the PIRSA ESD process. Habitat disturbance in general was assessed as moderate (Maufield et g		

PI 2.5	5.3	There is adequate knowledge of the impacts of the fishery on the ecosystem			
		2014). Ecosystem impac current level of trawling biodiversity.	ts of the SGF have also be activities in Spencer Gulf	en assessed, indicating th does not affect overall	at the
E	Guide post		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).	Information is sufficient support the developme strategies to manage ecosystem impacts.	t to nt of
	Met?	Y	Y		
	Justific ation	<ul> <li>FRDC funding was been obtained for a project led by the University of Adelaids with PIRSA and SARDI support (University of Adelaide 2011) aims to develop a system model for the Spencer Gulf, building on work already completed for the GAB (Goldsworthy et al, in prep.). Data to populate the model will be drawn fiprawn stock assessment surveys and the commercial fishery. The project may provide a useful basis for broad understanding of features of the Spencer Gulf ecosystem but it is unclear that the proposed modeling will provide any predi capability or the ability to test management measures that might be implement under the Management Plan (as called for in condition 4).</li> <li>The analysis determined the general species abundance, biomass and richness determined the community structure from current and past trawl intensity. Twork concludes that the community structure is well separated by region and substantially driven by salinity and depth gradients. There is also no evidence recent (5 years) trawl intensity-related differences in community structure.</li> </ul>			
ReferencesUniversity of Adelaide 2011, Spencer Gulf Research Initiative: developmer ecosystem model for fisheries and aquaculture Goldsworthy, S.D. B. Page, Rogers, C. Bulman, A.Wiebkin, L. McLeay, L. Einoder, A.M.M. Baylis, M. Br Caines, K. Daly, C. Huveneers, K. Peters, A.D. Lowther, and T.M. Ward. Trophodynamics of the eastern Great Australian Bight ecosystem: ecologi change associated with the growth of Australia's largest fishery (supplied meeting)		: of an P. J. ley, R. al uring			
OVER	ALL PERFC	ORMANCE INDICATOR SCO	ORE:		80
COND	ITION NU	MBER (if relevant):			

PI 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			
Scorin	g Issue	SG 60	SG 80	SG 100	
A	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	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.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.	
	Met?	Υ	Y	Υ	
Justific ation There is explicit definition of the role of the Federal (AFM fisheries management. Critically, this includes clearly stati responsibility for fisheries is divided between State and Co according to the Offshore Constitutional Settlement. Within PIRSA, there is explicit definition and understand Department. The executive structure of the department of fisheries management, research, policy and compliar dedicated department umbrella. This increases clarification responsibilities. The roles of other departments such as D Environment are also explicitly defined and it is understo to each other. SA fisheries explicitly makes provision for delegating manage to the fisher organisations based on a co-management mode explicit management decisions to be made at fishery level. underpinned not only by the relationship with PIRSA bit als relationships with SARDI. The functions, roles and responsibilities are explicitly define for all areas of responsibility and interaction and meet SG 6		ral (AFMA) and State level of early stating where overall ee and Commonwealth ent. Inderstanding of the roles of the partment brings all key aspects compliance under a single larification of roles and uch as Department of the understood how these relate ing management responsibilities ment model. This again allows for ery level. The role of SGWCPFA is SA bit also through working itly defined and well understood meet SG 60, SG 80 and SG 100.			
В	Guide post	Ine management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates	Ine management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.	

DI 212		The management system has effective consultation processes that are open to interested and affected parties.		
The roles and responsibilities of organisations and individuals who ar in the management process are clear and understood by all relevant pa			nd individuals who are involved tood by all relevant parties	
		system.	consideration of the information obtained.	
	Met?	Y	Y	Υ
	Justific ation	There is a comprehensive system of consultation processes in place that regularly seek and accept information. These include an assortment of public consultation processes on changes to Legislation and Fishery specific management plans. This process provides for responses to submissions made, and also includes the requirement for open discussion through public meetings. Gazette announcements relating to the intent to implement fishery specific management actions also provide for public response, facilitated through newspaper announcements and postings on PIRSA's website (PIRSA, April, 2013, PIRSA, July, 2015). Fisher organisations, as well as other stakeholders, especially the NGOs, make various direct representations and submissions to PIRSA. PIRSA duly responds with an explanation of the rational for making its decisions and demonstrates how it has considered the information provided, including when appropriate how information provided through consultation has been used (SGWCPFA - PIRSA, 30 May, 2014 - 1 July, 2015) and (CCSA - PIRSA, email 27 June to 4 September 2014). Evidence clearly shows that the consultation processes regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used. SG 60, SG 80 and SG 100 are met.		
C	Guide post		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	Met?	Y	Y	Y
	Justific ationPIRSA consults with both a relevant set of Government and local gov stakeholders including the National and State Departments of Environm AG's office and South Australian Native Title Service (PIRSA, November 2 well as with the Fisheries associations, Management Advisory Committee and the University of Adelaide. Effective engagement is facilitated throug notices, written responses from PIRSA to these organisations, and Public N The SGWCPFA includes the CCSA as a member of its Research Committee, the principal body influencing management outcomes. SGWCPFA fully f participation of CCSA in these meetings. Both SARDI and PIRSA are also r of this Committee.The consultation process provides opportunity and encouragement			vernment and local government epartments of Environment, the vice (PIRSA, November 2013), as ent Advisory Committees, NGOs ment is facilitated through public ganisations, and Public Meetings. its Research Committee, which is omes. SGWCPFA fully funds the RDI and PIRSA are also members

PI 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		
		interested and affected parties to be involved, and facilitates their engagement. SG 60, SG 80 and SG 100 are met.	effective	
References		PIRSA, April, 2013) and fishery permit scheme for deepwater crab (PIRSA, July, 2015) and a proposed cuttlefish closure (PIRSA, July, 2015)		
		PIRSA, November 2013, Consultation Strategy for the Draft Management Plan for the South Australian Spencer Gulf Fishery.		
OVERALL PERFORMANCE INDICATOR SCORE:			100	
CONDITION NUMBER (if relevant):				

PI 3.2.4		The fishery has a research plan that addresses the information needs of management		
Scorin	g Issue	SG 60	SG 80	SG 100
а	Guide post	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	Y	Y	Y
	Justifi cation	PIRSA has established a Management Plan Steering Committee which first met in mid-2012 and has provided oversight of the Management Plan (MP) development. The Management Plan Steering Committee initiates specific reports which contribute to measuring the outcomes measured in the Plan. A "Strategic Research Plan" is also developed by the SGWCPFA. The final research plan, dated May, 2014 was developed by the SGWCPFA. The final research plan, dated May, 2014 was developed by the SGWCPFA, 2014). The plan includes a list of current, future planned, and "aspirational" projects, and includes specific reference to fits within this timeframe and there is evidence that the revised research plan addresses fishery-specific and ecosystem orientated research outputs that are consistent with the		

PI 3.2.4		The fishery has a research plan that addresses the information needs of management			
		outcomes of the management plan. Research results are disseminated to all interested parties in a timely fashion.			
b	Guide post	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and resu disseminated to all inte parties in a timely fashi are widely and publicly available.	lts are rested on and
	Met?	Y	Υ	Ν	
	Justific ation	YYNPIRSA undertakes specific research and evaluation projects, which support the application of the Spencer Gulf Management Plan. An example includes the ESD report available on http://www.pir.sa.gov.au/ data/assets/pdf file/0007/232477/FINAL ESD risk assessment of South Australias SGPF July 2014.pdf.SARDI also undertakes separate research, which may form part of a cross section of fisheries (e.g., TEPs monitoring), and usually funded by the Government of Australian through the SARDI Research & Development Programme or from FRDC. These can be readily seen on the SARDI Fisheries website <a href="http://pir.sa.gov.au/research">http://pir.sa.gov.au/research</a> and http://www.pir.sa.gov.au/fishing/commercial fishing/commercial fisheries /prawn fishery - spencer gulf and west coast. These documents are disseminated to all interested parties in a timely fashion and are widely and publicly available.Outputs are also regularly disseminated to the Association through the Research Committee and at the regular Association Management Committee meetings, and members of the Research Committee include the main stakeholders ('interested parties') in the fishery. These documents are not publically disseminated unless incorporated into the research outputs from SARDI.			
References		PIRSA Management Plan for the South Australian Spencer Gulf Prawn         Fishery, 2014-2019         SGWCPFA, Research Plan, May, 2014. <u>http://www.pir.sa.gov.au/</u>			
OVER	ALL PERFC	DRMANCE INDICATOR SCO	DRE:		90
COND	ITION NU	MBER (if relevant):			

PI 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				
Scorin	g Issue					
a	Guide post	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.		
	Met?	Y	Y	Υ		
	Justific ation	stific on South Australia's Fisheries management system is subject to internal and performance evaluation. PIRSA undertakes its own internal monitoring r the basis of activities defined in the Management Plan. An external as relating to the obligations for ETP reporting is publically available or website at http://www.environment.gov.au/coasts/fisheries/s trawl/index.html.				
b	Guide post	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.		
	Met?	Y	Y	Υ		
Justific ationAll SARDI reports are subject to internal review. SARDI Re FRDC are subject to external review. These include repor response to the conditions set (Mayfield, 2014, Steer, 20 such as the bio economic model for South Australian Pra et al). Two other critical documents supporting the asses the SARDI reporting framework for ecosystem-based ass subject to external review.PIRSA's Draft Management Plan had been subject to e August, 2013). In response, PIRSA modified the de Strategy			ARDI Research reports funded by e reports commissioned in eer, 2015) and other reports ian Prawn Trawl Fisheries (Noell e assessment, the PIRSA ESD and sed assessment, had been ct to external review (Dichmont, the definitions in then Harvest			
References		Update DoE reference S. Mayfield, G.J. Ferguson, R.C. Chick, C.D. Dixon and C. Noell, A reporting framework for ecosystem-based assessment of Australian prawn trawl fisheries: a Spencer Gulf prawn trawl fishery case study, RDC Project No. 2011/062 ISBN: 978- 1-921563-70-6 December 2014 Steer, M. Surveying, Searching and Promoting Giant Australian Cuttlefish Spawning Activity in Northern Spencer Gulf, SARDI Publication No. F2014/000875-1 SARDI Research Report Series No. 833, March 2015				

PI 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	
	PIRSA Commercial South Australian Spencer Gulf Prawn Fishery Manageme	ent Plan
OVERALL PERFORMANCE INDICATOR SCORE:       1		