



Australian Government

Department of the Environment and Energy

Assessment of the
**SOUTH AUSTRALIAN
LAKES AND COORONG FISHERY**

February 2019

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This report should be attributed as '*Assessment of the South Australian Lakes and Coorong Fishery February 2019*, Commonwealth of Australia 2019'.

Disclaimer

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

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EXECUTIVE SUMMARY OF THE ASSESSMENT OF THE SOUTH AUSTRALIAN LAKES AND COORONG FISHERY

In November 2018, the Department of Primary Industries and Regions South Australia (PIRSA) submitted an application, *Ecological Assessment of the South Australian Lakes and Coorong Fishery* to the Department of the Environment and Energy, for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as a Wildlife Trade Operation (WTO) against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. A public comment period was open from 13 November 2018 until 12 December 2018. No comments were received.

The fishery

The South Australian Lakes and Coorong Fishery (the fishery) operates in three clearly defined habitat and gear sectors: freshwater large-mesh gillnet; estuarine large-mesh gillnet; and estuarine small-net gillnet. Management arrangements include: limited entry; harvest strategies for finfish and Pigi; gear restrictions; bag and possession limits; restrictions on the take of Murray Cod and Black Bream; and seasonal and area closures. New harvest strategies are in place for the Pigi and Finfish (net) sectors. The harvest strategies are scheduled for review in 2018/2019.

Target stocks

The fishery targets Black Bream (overfished), Greenback Flounder (environmentally limited), Mulloway (sustainable), Yelloweye Mullet (sustainable), Golden Perch (sustainable), Pigi (sustainable), exotic European Carp and Redfin. Temporary management measures (closures and prohibition on take and possession) are in place for commercial and recreational stocks of Black Bream to promote stock recovery.

Catch and effort for target stocks are reviewed (with total allowable catch set) at annual stakeholder forums. Murray Cod (lower River Murray) remains classified as 'undefined' and is no longer targeted by licence holders. The SA Research and Development Institute (SARDI), conduct regular stock assessments of key native species. The assessments measure stocks against performance indicators and limit reference points. The most recent assessment was for Pigi in 2017.

Protected species and ecosystems

In 2016/2017 there were 388 protected species interactions with 1,797 individuals (i.e. some interactions involved several individuals). Ninety six per cent of the interactions (and 99 per cent of individuals) were with Long-nosed Fur Seals (*Arctocephalus forsteri*) with no recorded fatalities. The remaining interactions (14) were with 21 individual birds.

PIRSA, SARDI and the South Australian Department of Environment and Water, are working with industry to implement appropriate mitigation measures for protected species.

Management measures are in place for the 2018/19 financial year for Fur Seals, including an increase in hauling net season; up to 25 drum nets per licence; and increased number of relief days for licence holders. Further methods are also being investigated. Considering the current management measures, the Department considers it is unlikely fishing activity will cause irreversible impact to the ecosystem and associated food chains.

Conclusion

Following assessment against the Guidelines, the fishery meets the requirements of the EPBC Act subject to conditions outlined in Section 4. On this basis, The Department considers that declaration of the harvest operation of the fishery as an approved WTO, until 25 February 2022, is appropriate. Unless a specific time frame is provided, each condition must be addressed within the period of the approved WTO declaration for the fishery.

SECTION 1: ASSESSMENT SUMMARY OF THE SOUTH AUSTRALIAN (SA) LAKES AND COORONG FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION), CONSISTENT WITH THE EPBC ACT

Guidelines assessment	Meets	Partially meets	Does not meet	Details
Management regime	All met.			The management regime is well developed, precautionary, and effectively deals with uncertainties and risks. The fishery management plan has been reviewed. The management regime includes objectives, strategies, and performance measures. Consultation is conducted with key stakeholders.
Principle 1 (target stocks)	8 of 11.	3 of 11.		Black Bream is overfished (temporary management measures are in place). Yelloweye Mullet, Pipi, and Golden Perch stocks are sustainable. Greenback Flounder stocks are environmentally limited. Concerns continue about discards of undersized Mulloway. Logbooks record catch and effort for target and byproduct species. An electronic reporting trial has been developed. Recreational and Indigenous take is considered low, and is limited by the resource allocation policy.
Principle 2 (bycatch and TEPS)	6 of 12.	5 of 12.	1 of 12.	The fishery has an Ecological Risk Assessment scheduled for 2019. While there is currently no mandatory reporting of bycatch (abundance and composition), the effects of fishing on bycatch species is considered low generally. The Primary Industries and Regions South Australia (PIRSA), the SA Research and Development Institute (SARDI) and the Department of Environment and Water, continue to work with industry to implement appropriate mitigation measures for protected species. Taking current management measures into consideration, the Department considers that it is unlikely that fishing activity in the fishery will cause serious or irreversible impact to the ecosystem and associated food chains.
Principle 2 (ecosystem impacts)	All met.			A risk assessment was conducted for the Coorong and Lakes Alexandrina and Albert Ramsar wetland, in which the fishery operates. The risks to the marine environment, including the Ramsar site, are considered low.

EPBC requirements	Meets	Partially meets	Does not meet	Details
Part 12	N/A			The fishery operates in state waters, and therefore will not affect Commonwealth Marine Bioregional Plans.
Part 13	N/A			Part 13 is not required, as the fishery only operates in state waters.
Part 13A	13 met	1	5 N/a.	Continuation of specific management measures for the monitoring of Black Bream stocks (overfished) is required.
Part 16	All met			Given the current and proposed management measures in place in the fishery (as identified at Section 2 of this assessment), the Department considers that the management agency is taking a precautionary approach to managing risks, to prevent serious or irreversible environmental damage being caused by this fishery.

Notes:**Assessment history:**

- 1st assessment finalised November 2005 – WTO with 3 conditions and 10 recommendations.
- 2nd assessment finalised April 2009 – WTO with 7 conditions and 2 recommendations.
- 3rd assessment finalised May 2011 – WTO with 4 conditions and 2 recommendations.
- 4th assessment finalised February 2018 – Short term WTO (until 1 March 2018) with 6 conditions.

Key links:

- Fishery information page on agency website: http://www.pir.sa.gov.au/fishing/commercial_fishing/fisheries/lakes_and_coorong_fishery
- SA Research and Development Institute (SARDI) – <http://pir.sa.gov.au/research>.
- Management plan or equivalent: *Management Plan for the South Australian Commercial Lakes and Coorong Fishery* (March 2016).
- Harvest Strategy – contained in the management plan.
- *Ecological Assessment of the South Australian Lakes and Coorong Fishery - Reassessment Report* (2018).

Enforcing legislation:

- *SA Fisheries Management Act 2007*
- *SA Fisheries Management (Lakes and Coorong Fishery) Regulations 2009*
- *SA Fisheries Management (General) Regulations 2017*.

Risk assessment and mitigation:

- *Ecological Risk Assessment of Bird Interactions—The Lakes and Coorong Fisheries*
- Ecological risk assessment reports were included in PIRSA's 2016 submission – <http://www.environment.gov.au/marine/fisheries/sa/coorong/agency-application-2016>.
- *Operational interactions with Threatened, Endangered or Protected Species in South Australian Managed Fisheries Data Summary: 2007/08 - 2016/17*.

Stock assessments and reports:

- *Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery* (March, 2018).
- Stock assessment reports for key species are available in the 2018 submission on page 13 (link to submission, is available above under key links).
- *Greenback Flounder (Rhombosolea tapirina) Stock Assessment Report 2014/15*.
- Status of Australian Fish Stocks.

Other:

- Fishing closures in SA: http://www.pir.sa.gov.au/fishing/closures_and_aquatic_reserves/fishing_closures.
- Lakes and Coorong commercial fishing zones map.
- *Lakes and Coorong Fishery Operator User Guide*.
- *Draft Management Plan for Recreational Fishing in South Australia* (2016).

SECTION 2: DETAILED ANALYSIS OF THE SOUTH AUSTRALIAN LAKES AND COORONG FISHERY AGAINST THE GUIDELINES FOR THE ECOLOGICALLY SUSTAINABLE MANAGEMENT OF FISHERIES (2ND EDITION)

Guidelines criteria	Comment
THE MANAGEMENT REGIME	
The management regime does not have to be a formal statutory fishery management plan as such, and may include non-statutory management arrangements or management policies and programs. The regime should:	
Be documented, publicly available and transparent.	<p>Meets</p> <p>The <i>Management Plan for the South Australian Commercial Lakes and Coorong Fishery 2016</i>, the governing legislation, and the general information describing the management regime for the fishery, are publicly available (links available in Section 1: Notes, above).</p> <p>Recreational fishing (excluding Aboriginal traditional fishing) is managed separately under the <i>Management Plan for Recreational Fishing in South Australia</i>.</p>
Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public.	<p>Meets</p> <p>The South Australian (SA) <i>Fisheries Act 2007</i> outlines a statutory consultative process. The fishery management plans are developed through public consultation, and input from the Lakes and Coorong Fishery Management Advisory Committee.</p> <p>The Primary Industries and Regions South Australia (PIRSA), consulted stakeholders during a review of the annual management arrangements for Murray Cod. Professional and recreational fishers, were consulted about management options for overfished Black Bream stocks.</p>
Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process.	<p>Meets</p> <p>PIRSA consults broadly with expert and public interest groups. The SA Lakes and Coorong Fishery Consultative Committee, the SA Lakes and Coorong Fishery Management Advisory Committee, and the SA Recreational Fishing Advisory Council (RecFish SA) provide input during the development of management arrangements for the fishery.</p> <p>The South Australian Research and Development Institute (SARDI) Aquatic Sciences, provides scientific evaluation of the status of target species stocks, based on performance indicators and limit reference points.</p>

<p>Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured.</p>	<p>Meets</p> <p>Performance measures/indicators are articulated in the fishery management plan (2016), and reported publicly in the <i>Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery</i> (link accessible in Section 1: Notes).</p> <p>The fishery management plan (2016) includes: goals, objectives, co-management arrangements; separate harvest strategies for finfish species, and for Pigi; resource sharing allocations between the commercial, recreational and Indigenous sectors; research priorities; and compliance and monitoring.</p> <p>The SA Lakes and Coorong Fishery Management Advisory Committee, manages the finfish and Pigi harvest strategies.</p>
<p>Be capable of controlling the level of harvest in the fishery using input and/or output controls.</p>	<p>Meets</p> <p>Commercial fishing harvest levels are managed mainly through input and output controls. These include:</p> <ul style="list-style-type: none"> • limited entry • licence endorsements (type and number of nets, and permitted species). • gear and vessel restrictions • spatial and temporal closures, including spawning seasons • a total allowable commercial catch (TACC) • individual transferable quota (ITQ) • a harvest strategy for setting TACC. <p>Recreational fishing harvest levels, are managed primarily through input and output controls including:</p> <ul style="list-style-type: none"> • gear restrictions (type and amount) • spatial and temporal closures, including spawning seasons • bag, boat and possession limits (for certain species) • minimum and maximum size limits • ban on take of egg-bearing females (some species) • bag and possession limits, and minimum legal length.
<p>Contain the means of enforcing critical aspects of the management arrangements.</p>	<p>Meets</p> <p>Enforcement officers conduct random checks on professional (commercial) and recreational fishing activities. The management plan includes a compliance and monitoring strategy containing objectives, a three year planning cycle and a risk assessment and reporting process. Penalties for offences are set out in the <i>Fisheries Management Act 2007</i> (SA).</p>

<p>Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria.</p>	<p>Meets</p> <p>The management plan for the fishery is reviewed every five years, as required by state legislation. However, the effectiveness of the management plan can be assessed at any time. SA fishery regulations are reviewed every ten years (SA fishery legislation and regulations were recently updated and commenced in January 2018).</p> <p>The fishery management plan specifies that fishery and environmental performance reports are produced annually, and an ecosystem-based stock assessment report for one of three habitat/gear based sector is produced annually on a triennial reporting cycle". It also specifies that a stock assessment report is produced every four years for the Pipi sector.</p> <p>The Lakes and Coorong Fishery Management Advisory Committee manages the finfish and Pipi harvest strategies. The harvest strategies will be reviewed during a planned review of the management plan.</p>
<p>Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates.</p>	<p>Meets</p> <p>The Department considers the management arrangements are capable of effectively identifying and managing the impacts on the wider marine ecosystem. The fishery management plan also includes a compliance and monitoring strategy.</p> <p>PIRSA conducts a periodic Ecological Risk Assessment (ERA) process which considers data collections, monitoring needs and management actions, to assist in mitigating any adverse impacts to the marine ecosystem. The most recent fishery risk assessment was conducted in 2011 (link available in Section 1: Notes, above).</p> <p>The next ERA process will be conducted as part of the review of the management plan for the Fishery.</p>
<p>Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy.</p>	<p>Meets</p> <p>The fishery is compliant with relevant plans and policies as they apply to state waters, including management of the Coorong and Lakes Alexandrina and Albert Ramsar site.</p>

PRINCIPLE 1 - A fishery must be conducted in a manner that does not lead to over-fishing, or for those stocks that are over-fished, the fishery must be conducted such that there is a high degree of probability the stock(s) will recover.

Objective 1 - The fishery shall be conducted at catch levels that maintain ecologically viable stock levels at an agreed point or range, with acceptable levels of probability.

Information requirements

1.1.1 There is a reliable information collection system in place appropriate to the scale of the fishery. The level of data collection should be based upon an appropriate mix of fishery independent and dependent research and monitoring.

Meets

Commercial operators use logbooks to record: the identification of the fishery; the location; effort (number of fished days); date of fishing; gear; primary and secondary species; landed catch and its condition; and interactions with protected species.

Operators provide monthly reports to SARDI for review and monitoring. This information is included in fishery and environmental performance reports, and stock assessment reports, for the net and Papi sectors.

SARDI conducts regular research on target species. This includes a process to identify any reduction in biological diversity and/or reproductive capacity, and other aspects of commercial fishing, including the effectiveness of gear and methods.

SARDI has facilitated stock surveys for: Golden Perch; Yelloweye Mullet; Papi; Mulloway; Greenback Flounder; and Black Bream. The stock assessment reports were based on performance indicators for the net sector.

Separate performance indicators were used to assess the Papi stocks. Links to stock assessments are available under Section 1: Notes, above.

Assessment

1.1.2 There is a robust assessment of the dynamics and status of the species/fishery and periodic review of the process and the data collected. Assessment should include a process to identify any reduction in biological diversity and /or reproductive capacity. Review should take place at regular intervals but at least every three years.

Meets

The most recent stock status report *Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery* was released in March 2018 (link available in Section 1: Notes, above).

Annual catch and effort data for key species is reviewed annually during stakeholder forums. Key species stocks are assessed regularly (3 to 5 years) against performance measures and reference points. The *Status of Key Australian Fish Stocks* report (2016) provides the current status of the target species (link available in Section 1: Notes, above). Pipi, Mulloway and Yelloweye Mullet are classed as '**sustainable**'.

However, the risks and uncertainties identified in the 2011 ERA for target stocks remain. This includes the continued need for monitoring and appropriate management to ensure that for all target species stocks remain sustainable. Environmental conditions (particularly freshwater inflows) are also considered to have an impact on recruitment strength and spawning success for a number of key species (Black Bream).

The current stock classifications are:

- Black bream – **overfished**. Fishing mortality is considered high, posing a risk to stock recovery to occur (Earl et al. 2016). Low spawning biomass is considered the most likely cause of low recruitment levels, rather than environmental conditions. Temporary management arrangements are in place for commercial and recreational fishing (from 1 September 2018 to 30 November 2018). Section 1.2.1 of this table, outlines the measures in place. Black Bream management arrangements (for 2019) will be discussed following the release of the report *Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017-18*.
- Pipi – **sustainable**.
- Yelloweye Mullet – **sustainable** (2016 stock reassessment). There is a risk of becoming recruitment overfished, if landings of juvenile (two and three year olds) fish continue to increase. The legal minimum size for Yelloweye Mullet (~210 mm total length) is below the size at which females reach sexual maturity (~226 mm–256 mm total length). This presents the risk of females being harvested, before they reach their first spawning event (Earl and Ferguson 2013), However, Earl and Ferguson 2013 indicate that Yelloweye Mullet are not considered likely to be recruitment overfished, at existing fishing pressures, as catches comprised mainly males and females that were larger than the size at which they reach sexual maturity.
- Mulloway – **sustainable**. They are not considered likely to be recruitment overfished under existing fishing pressures. However, concerns remain that high numbers of individuals are being discarded, before they reach size maturity. There is the potential for these stocks to become recruitment overfished if discarding increases.

	<ul style="list-style-type: none"> Greenback Flounder – environmentally limited. As indicated in the fishery application submission, catch and effort trends indicate stocks fluctuating at low levels, with low target effort. Secondary performance indicators for Greenback Flounder are outlined in the Supplementary provisions to meet Marine Stewardship Council criteria for the Finfish Harvest Strategy (link unavailable). PIRSA will continue to monitor catch levels for Greenback Flounder, and implement appropriate management actions as required. <p>There are no assessment reports available for exotic European Carp and Redfin.</p> <p>PIRSA is working with state and industry agencies to ensure decisions are made about freshwater inflows, while considering known spawning periods for key target species in the fishery.</p> <p>PIRSA will continue to monitor catch levels for Greenback Flounder, and implement appropriate management actions as required.</p>
<p>1.1.3 The distribution and spatial structure of the stock(s) has been established and factored into management responses.</p>	<p>Meets</p> <p>Information relating to the distribution and spatial structure of the stocks is included in the fishery management plan and forms part of the stock assessments for target species. This information is factored into the management arrangements for the fishery (link available in Section 1: Notes, above).</p>

1.1.4 There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.

Partially meets

Catch data is cross referenced with fishing processor records and is supported by annual reviews of the TACC (where relevant) and regular stock assessments. SARDI publish regular reports in relation to the fishery's statistics and performance indicators. PIRSA considers the data to be reliable. All estimates of removals are considered in annual total allowable catch setting, in accordance with the harvest strategy and control rules (see management plan, Section 1: Notes).

Logbooks record daily catch and effort data for primary and secondary target species. However, discard data isn't recorded for the fishery (unless the discard species is listed as threatened, endangered or protected). With the support of industry PIRSA is working on including discard reporting in the Lakes and Coorong Fishery as part of the process to introduce electronic reporting in the fishery.

The amount of discarded Pipi is recorded in daily catch logs for the Pipi sector only. This information is reported to PIRSA monthly.

Large mesh gill net sector - Commercial total catch for 2016/2017:

- Mulloway – 62 tonnes (fourth highest catch since 2002/2003).
- Greenback Flounder – The *Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery* (March 2018) states total catch as being 2.1 tonnes in 2016/17.
- Black Bream – The *Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery* (March 2018) states total catch as being 1.6 tonnes. Link available in Section 1: Notes, above.

(Attachment 1 of the December 2018 submission. Link available in Section 1: Notes, above).

Small mesh gill net sector – Commercial total catch for 2016/2017:

- Yelloweye Mullet – 183 tonnes.

	<p><u>Freshwater large mesh gill net sector – Commercial total catch for 2016/2017:</u></p> <ul style="list-style-type: none"> • Golden Perch – 81 tonnes. • Bony Bream – 421 tonnes. • Common Carp – 490 tonnes. • Murray Cod – As stated in the 2018 fishery application submission, Murray Cod (lower River Murray) was a target species. However, as it remains 'undefined' it is no longer targeted by licence holders. <p><u>Pipi fishery – Commercial total catch 2016/2017:</u></p> <p>Five hundred and thirty nine tonnes (including small contributions from the SA Marine Scalefish Fishery). This is the highest catch since 2007/2008 and attributed to increases in TACC since 2007/2008.</p> <p><u>Recreational and Indigenous fishers:</u></p> <p>No data available for 2016/17. The most recent recreational fishing survey was carried out in 2013/14. However, the resource allocation policy limits each sector to a maximum percentage of the TACC for each species. The Pipi TACC for the 2018/2019 season is set to maximum levels which are outlined in the harvest strategy.</p> <p>Following management changes made in the Pipi sector of the fishery, the recreational sector has been allocated access to 64 kilometres of coastline (commercial has access to 192 kilometres).</p>
<p>1.1.5 There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.</p>	<p>Meets</p> <p>Mandatory logbook records, regular stock assessments, and annual reviews of the TACC, inform the estimated productivity of the fishery.</p> <p>A share of the aquatic resources are allocated to the professional (commercial), recreational and Indigenous fishing sectors. This allocation policy is separate to individual transferable quota entitlements within the fishery.</p>

Management responses	
1.1.6 There are reference points (target and/or limit), that trigger management actions including a biological bottom line and/or a catch or effort upper limit beyond which the stock should not be taken.	<p>Meets</p> <p>There are target and limit reference points, and response measures, articulated in the harvest strategy and control rules (link accessible in Section 1: Notes).</p> <p>The fishery management plan (link accessible above, in Section 1: Notes) includes separate harvest strategies for the Pipi (p.85) and net (p.95) fisheries:</p> <ul style="list-style-type: none"> • Pipi harvest strategy – includes objectives, strategies, and performance measures, based on: biological and economic performance indicators; reference points; and decision rules that guide the TACC setting process. • Net fishery harvest strategy – includes objectives and performance measures. The decision rules are based on environmental performance indicators including: the mean annual freshwater water level; the fishable area size; and the salinity tolerance of key species for estuarine habitats. <p>There are no primary biological decision rules proposed. Environmental performance indicators provide surrogate metrics for population abundance.</p>
1.1.7 There are management strategies in place capable of controlling the level of take.	<p>Meets</p> <p>The fishery management plan, includes strategies that aim to control the level of take such as; limited entry, area and seasonal closures, and gear restrictions linked to fishing licences.</p>
1.1.8 Fishing is conducted in a manner that does not threaten stocks of byproduct species.	<p>Partially meets</p> <p>The Environmental Sustainable Development risk assessment determined that the impact on byproduct species was negligible to low (PIRSA 2011). PIRSA consider the overall fishing effort to be moderate.</p> <p>However, the net fishery uses non-selective fishing methods and gear. The amounts and types of byproduct species are recorded in daily catch logs. There are no stock assessments for any byproduct species' stock.</p>
(Guidelines 1.1.1 to 1.1.7 should be applied to byproduct species to an appropriate level)	
1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>Overall, the management arrangements are considered likely to meet the objective, to conduct the fishery at catch levels that maintain target and byproduct stocks at an acceptable level.</p>

<p>If overfished, go to Objective 2: If not overfished, go to PRINCIPLE 2:</p>	
<p>Objective 2 - Where the fished stock(s) are below a defined reference point, the fishery will be managed to promote recovery to ecologically viable stock levels within nominated timeframes.</p>	
<p>Management responses</p>	
<p>1.2.1 A precautionary recovery strategy is in place specifying management actions, or staged management responses, which are linked to reference points. The recovery strategy should apply until the stock recovers, and should aim for recovery within a specific time period appropriate to the biology of the stock.</p>	<p>Partially meets</p> <p><u>Black Bream:</u></p> <p>To assist in the recovery of Black Bream, and to provide protection during the key spawning period (September to November inclusive), PIRSA implemented temporary management arrangements in 2018. These arrangements were implemented through a closure notice under the <i>Fisheries Management Act 2007</i>.</p> <p>The Black Bream management arrangements include:</p> <ul style="list-style-type: none"> • a closure prohibiting the use of mesh nets (commercial and recreational) within 300 m of all barrages located in the Coorong (Area 1) • a prohibition on the take or possession of Black Bream by both the commercial and recreational fishing sectors within the Lakes and Coorong. <p>PIRSA advised in their 2018 fishery application submission that the management arrangements will be revised before the Black Bream spawning season in 2019. A report <i>Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017-18</i> may inform these considerations.</p> <p><u>Murray Cod:</u></p> <p>As stated in the 2018 fishery application submission, Murray Cod (lower River Murray) is no longer targeted by licence holders, as stocks remain classified as 'undefined'.</p> <p>PIRSA has implemented a precautionary recovery strategy for Murray Cod stocks. This recovery strategy has been in place since 2011 and will continue until Murray Cod stocks are considered to be fished sustainably.</p> <p>The management approach includes: a re-stocking program (2016 to 2018 inclusive); catch and release during 1 January to 31 July; restrictions on how the lure is removed; a restriction on targeting in the Chowilla region (year-round); and a trolling ban applied for closed season, during 1 August to 31 December.</p>

<p>1.2.2 If the stock is estimated as being at or below the biological and / or effort bottom line, management responses such as a zero targeted catch, temporary fishery closure or a 'whole of fishery' effort or quota reduction are implemented.</p>	<p>Meets</p> <p>To assist in the recovery of Black Bream, and to provide protection during the key spawning period (September to November inclusive), PIRSA implemented temporary management arrangements in 2018. The arrangements apply to commercial and recreational fishing, and include: a closure prohibition; the use of mesh nets within 300 m of all barrages (Area 1); and a prohibition on possession/take of Black Bream.</p> <p>Black Bream management arrangements for 2019, will be discussed following the release of the report <i>Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017-18</i>.</p> <p>Management responses to recover Murray Cod stocks have been implemented, and these will continue until stocks recover. Murray Cod are not being targeted by licence holders, as stocks remain classified as 'undefined'.</p>
<p>PRINCIPLE 2 - Fishing operations should be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.</p>	
<p>Objective 1 - The fishery is conducted in a manner that does not threaten bycatch species.</p>	
<p>Information requirements</p>	
<p>2.1.1 Reliable information, appropriate to the scale of the fishery, is collected on the composition and abundance of bycatch.</p>	<p>Partially meets</p> <p>The impact on bycatch species is considered low. Fishing operators use logbooks to record daily catch (kg) and effort (days, fisher days, number of nets) for target and byproduct species, and interactions with threatened, endangered or protected species (TEPS). However there is no mandatory reporting on the composition and abundance of bycatch in the net fishery (unless the species is listed as a TEPS).</p> <p>A study, <i>Gear interactions of non-targeted species in the Lakes and Coorong commercial and recreational fisheries of South Australia</i> (Ferguson, 2010), provides baseline data for interactions of non-target species with gill nets in the Coorong Lagoons, and Murray River estuary. It identified that up to forty bycatch species in the finfish sector are accidentally caught during closed seasons. These species include: Toadfish; Silver Perch; Murray River Catfish; Crustacean; bird species; and target species (for instance, undersized).</p> <p>The study also identified high numbers of undersized target fish including: Yelloweye Mullet; Mulloway; Bony Bream; Greenback Flounder; and Australian Salmon. Overall, discards accounted for 14.6 % of catches.</p> <p>PIRSA has informed the Department that it is possible that future amendments to the Inland Waters Catch and Effort logbooks, will incorporate mandatory bycatch reporting for all licence holders. PIRSA, with the support of the industry, is working on including discard reporting in the Lakes and Coorong Fishery, as part of the process to introduce electronic reporting in the fishery.</p>

Assessment	
2.1.2 There is a risk analysis of the bycatch with respect to its vulnerability to fishing.	<p>Partially Meets</p> <p>An ERA was conducted in 2011. PIRSA determined that the fishery's impact on bycatch species was low to negligible. However, as mentioned in 2.1.1 above, studies have identified high numbers of undersized fish including: Yelloweye Mullet; Mulloway; and Greenback Flounder being discarded in the fishery.</p> <p>An ERA workshop was conducted in March 2013 to determine the effects of water and shore-based fishing on bird bycatch, particularly the impacts to Fairy Tern (<i>Sternula nereis nereis</i>). Stakeholders at the workshop considered all gear types and the threats posed to bird species. PIRSA determined the fishery's effect on bird species was low to negligible (Stoklosa 2013).</p> <p>The ERA will be updated as part of the review of the fishery management plan.</p>
Management responses	
2.1.3 Measures are in place to avoid capture and mortality of bycatch species unless it is determined that the level of catch is sustainable (except in relation to endangered, threatened or protected species). Steps must be taken to develop suitable technology if none is available.	<p>Partially Meets</p> <p>Discarding of undersized species (including undersized target species) continues. Measures are in place to avoid the capture and mortality of bycatch species.</p> <p>Electronic reporting is being trialled in the Lakes and Coorong Fishery, requiring fishers to provide information on discards. This also includes data on the effects of Fur Seals and gear damage.</p>
2.1.4 An indicator group of bycatch species is monitored.	<p>Does not meet</p> <p>There is no indicator group of bycatch species. Concerns were raised in Ferguson (2010) regarding the number of individuals being discarded before they reach size maturity. Discarding of undersized Mulloway could affect stock sustainability.</p> <p>Biannual assessments of Mulloway are undertaken through the Status of Australian Fish Stocks reporting process. In 2019 SARDI will include assessment of a status of stocks for the key target species, including Mulloway in their annual fishery statistics report.</p>

<p>2.1.5 There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.</p>	<p>Partially meets</p> <p>Bycatch (including the number of undersized discards) has not been recorded in the net fishery. Therefore, the decision rules do not apply to bycatch species. The level of risk to breeding populations of bycatch species was assessed as low to negligible (PIRSA, 2011).</p> <p>However, as outlined in 2.1.1 above, there are discards for some target species including: Yelloweye Mullet; Mulloway; Bony Bream; Greenback Flounder; and Australian Salmon. Overall discards account for 14.6 % of catches (Ferguson 2010).</p> <p>PIRSA with the support of industry, is working on including discard reporting in the Lakes and Coorong Fishery as part of the process to introduce electronic reporting in the fishery. Electronic reporting is being trialled in the Lakes and Coorong Fishery, requiring fishers to provide information on discards. This also includes data on the effects caused by Fur Seals and gear damage.</p> <p>PIRSA has informed the Department that it is possible that future amendments to the Inland Waters Catch and Effort logbooks will incorporate mandatory bycatch reporting for all licence holders.</p>
<p>2.1.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p>Partially meets</p> <p>While there are risks and uncertainties in relation to data collection and decision rules, overall the management arrangements are considered likely to achieve the objective for the fishery operating in a manner that does not threaten bycatch species. However, it would be beneficial if further consideration could be given to mandatory reporting of bycatch (including undersized target species discards).</p>

Objective 2 - The fishery is conducted in a manner that avoids mortality of, or injuries to, endangered, threatened or protected species and avoids or minimises impacts on threatened ecological communities.

Information requirements

<p>2.2.1 Reliable information is collected on the interaction with endangered, threatened or protected species and threatened ecological communities.</p>	<p>Meets</p> <p>Interactions with TEPS is managed under the <i>Fisheries Management Act 2007</i> (SA), and the <i>National Parks and Wildlife Act 1972</i> (SA). In 2007 SA introduced mandatory reporting of TEPS interactions with the use of a wildlife interaction logbooks.</p> <p>Logbook records include: licence details; date and time of interactions; nature of interactions (caught, entangled, impact/collision, other); observed status (alive, injured, and dead); and fate (released, retained, and discarded). SARDI produces annual reports based on these logbook records.</p>
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Assessments

<p>2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.</p>	<p>Meets</p> <p>As outlined in the 2018 SA fishery submission application, in 2016/17 there were 388 protected species interactions with 1,797 individuals (i.e. some involved several individuals). Ninety six percent of the interactions (and 99% of individuals) were with Long-nosed Fur Seals (<i>Arctocephalus forsteri</i>). There were no fatalities. The remaining interactions (14) were with 21 birds.</p>
<p>2.2.3 There is an assessment of the impact of the fishery on threatened ecological communities.</p>	<p>Meets</p> <p>The 2011 ERA does not account for any impacts to threatened ecological communities (TEC) including Giant Kelp. However, the ERA indicates that impacts of fishing on the broader marine environment are low to negligible.</p> <p>The listing advice for the Giant Kelp TEC does not indicate any threats posed by the methods or gear used in this fishery (TSSC, 2012).</p>

Management responses	
2.2.4 There are measures in place to avoid capture and/or mortality of endangered, threatened or protected species.	<p>Meets</p> <p>Management measures in place intended to reduce or minimise the impact of fishing on TEPS include: exclusion devices, seasonal closures and gear restrictions.</p> <p>Mitigation measures (short and long term) are being investigated/developed by PIRSA, SARDI and industry to reduce Long-nosed Fur Seal interactions with fishing gear. Temporary management measures were implemented for the 2018/19 financial year, and include:</p> <ul style="list-style-type: none"> • an increase in the 50 mm hauling net season (in Area 1), by 105 days per year • permitting the use of up to 25 drum nets per licence in the fishery. • increasing the number of relief days available (28 to 90 days) for fishery licence holders. <p>Alternative gear, methods and mitigation devices (such as seal crackers – underwater explosives) are also being researched to reduce effects (loss of catch and damage to mesh nets) caused by Long-nosed Fur Seals.</p>
2.2.5 There are measures in place to avoid impact on threatened ecological communities.	<p>Meets</p> <p>The Giant Kelp TEC (at the southern extremity of the fishery boundary) isn't expected to be of concern in regard to operation of this fishery.</p>
2.2.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>Conditions imposed on the fishery, aim to ensure that fishing is conducted in a way that is likely to be effective in avoiding impacts to protected species and ecological communities.</p>
Objective 3 - The fishery is conducted, in a manner that minimises the impact of fishing operations on the ecosystem generally.	
Information requirements	
2.3.1 Information appropriate for the analysis in 2.3.2 is collated and/or collected covering the fishery's impact on the ecosystem and environment generally.	<p>Meets</p> <p>Data collection methods are considered adequate, aiming to inform and minimise impacts of fishing on the ecosystem and environment. Information includes a risk assessment of the fishery, risk assessments for listed bird interactions and regular monitoring of water quality.</p> <p>The fishery management plan summarises a number of state and Commonwealth legislation, regulations and policies (including the Coorong and Lakes Alexandrina and Albert Ramsar site management plan) aimed at assisting stakeholders to understand and address potential risks of fishing in the area.</p>

Assessment	
<p>2.3.2 Information is collected and a risk analysis, appropriate to the scale of the fishery and its potential impacts, is conducted into the susceptibility of each of the following ecosystem components to the fishery.</p> <ol style="list-style-type: none"> 1. Impacts on ecological communities <ul style="list-style-type: none"> • Benthic communities • Ecologically related, associated or dependent species • Water column communities 2. Impacts on food chains <ul style="list-style-type: none"> • Structure • Productivity/flows 3. Impacts on the physical environment <ul style="list-style-type: none"> • Physical habitat • Water quality 	<p>Meets</p> <p>The 2011 ERA, found that the risk to the physical ecosystem was considered negligible (PIRSA 2011). PIRSA considered the likely impacts of fishing on: retained species; non-retained species; general ecosystem; human population; and governance. It also considered the risks of external factors such as: disease; climate variability; terrestrial run-off; and freshwater in-flows. The report found:</p> <ul style="list-style-type: none"> • the impacts of fishing in the freshwater and estuarine environments are high. Indicators and performance measures are yet to be determined, but are likely to be based on the ecological sustainable development (ESD) framework. • impacts of fishing in the marine environment are moderate. Indicators and performance measures are yet to be determined. • impacts/risks of inadvertently introducing marine pests/aquatic diseases into the fishery are moderate. If it occurred, the impacts could be major but under current arrangements, this is considered unlikely. • impact on the ecological value of the fishery is a high risk, based on the importance of a healthy Coorong ecosystem for the future of the fishery, and future profits. • impacts of unforeseen/unknown external factors including climate change, rainfall/freshwater flows, diseases, and the influence of other fisheries, are likely to be moderate to extreme. • impact of flow regulation and associated risks, including acid sulphate soils and hyper-salinity, is rated extreme, and may have a major consequence for the fishery over the next 5 or so years, based upon past experience. • impact of permanent barrages is extreme, as they are likely to have a major consequence for the fishery into the future. • impact of introduced exotic fishes (European Carp and Redfin) is considered an extreme risk. • impact of marine parks is rated as extreme, due to the uncertainty surrounding access and the placement of no-take zones. <p>Stoklosa (2013) conducted a risk assessment, to assess the impacts of fishing on listed bird species, as a requirement to meet Marine Stewardship Council certification. Information from the risk assessment(s) informed the development of the management plan. Fishing operators are required to abide by the Coorong and Lakes Alexandrina and Albert Ramsar Management Plan.</p>

Management responses	
<p>2.3.3 Management actions are in place to ensure significant damage to ecosystems does not arise from the impacts described in 2.3.1.</p>	<p>Meets</p> <p>The management arrangements include objectives, goals, strategies and specific management actions (identified above) to help minimise the impact of fishing to ecosystems. The unpredictable fluctuations in environmental conditions create management challenges for the fishery.</p> <p>It is important that PIRSA continues to monitor trends in catch levels and environmental conditions, and to work with other government agencies, industry, recreational anglers and the broader public, to develop appropriate and timely management measures that ensure stocks of target species remain sustainable.</p>
<p>2.3.4 There are decision rules that trigger further management responses when monitoring detects impacts on selected ecosystem indicators beyond a predetermined level, or where action is indicated by application of the precautionary approach.</p>	<p>Meets</p> <p>The fishery management plan includes objectives, performance indicators and reference points that aim to minimise impacts of fishing on the ecosystem.</p>
<p>2.3.5 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.</p>	<p>Meets</p> <p>The management arrangements have a good chance of achieving the objective to ensure the fishery operates in a manner that minimises the impact of fishing operations on the ecosystem generally.</p>

SECTION 3: ASSESSMENT OF THE SOUTH AUSTRALIAN LAKES AND COORONG FISHERY AGAINST THE REQUIREMENTS OF THE EPBC ACT

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

Part 12 – Identifying and monitoring biodiversity and making bioregional plans

Section 176 Bioregional Plans	Comment
(5) Minister must have regard to relevant bioregional plans	<p>Not applicable</p> <p>The fishery operates in state waters, and therefore will not affect Commonwealth Marine Bioregional Plans.</p>

Part 13 – Species and communities

Part 13 is not required, as the fishery only operates in state waters.

Part 13A – International movement of wildlife specimens

Section 303BA Objects of Part 13A	
<p>(1) The objects of this Part are as follows:</p> <ul style="list-style-type: none"> (a) to ensure that Australia complies with its obligations under CITES and the Biodiversity Convention; (b) to protect wildlife that may be adversely affected by trade; (c) to promote the conservation of biodiversity in Australia and other countries; (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way; (e) to promote the humane treatment of wildlife; (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife. 	<p>The management arrangements for the South Australian (SA) Lakes and Coorong Fishery, have been assessed as consistent with the general guidance provided in the objects of Part 13A as:</p> <ul style="list-style-type: none"> • the fishery will not harvest any Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed species • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1) • the operation of the SA Lakes and Coorong Fishery is unlikely to be unsustainable and threaten biodiversity within the next three years, and • the Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.

Section 303DC Minister may amend list (non CITES species)	Comment
<p>(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by:</p> <p>(a) doing any of the following:</p> <ul style="list-style-type: none"> (i) including items in the list; (ii) deleting items from the list; (iii) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; (iv) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or <p>(b) correcting an inaccuracy or updating the name of a species.</p>	<p>Meets</p> <p>The Department recommends that specimens derived from species harvested in the fishery, other than specimens that belong to species listed under Part 13 of the EPBC Act (other than a conservation dependent species), and specimens that belong to taxa listed under section 303CA (Australia's CITES list), be included in the list of exempt native specimens while the fishery is subject to a declaration as an approved wildlife trade operation (WTO) under section 303FN.</p>
<p>(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes an assessment under Part 10, Divisions 1 or 2</p>	<p>Not applicable.</p> <p>The fishery is not managed by the Commonwealth.</p>
<p>(1C) The above does not limit matters that may be considered when deciding to amend LENS.</p>	<p>Meets</p> <p>The Department considers that it has taken into account all matters relevant, to making an informed decision to amend the list of exempt native specimens, to include product taken in this fishery.</p>
<p>(3) Before amending the LENS, the Minister must consult:</p> <ul style="list-style-type: none"> (a) other Minister or Ministers as appropriate; and (b) other Minister or Ministers of each State and self-governing Territory as appropriate; and (c) other persons and organisations as appropriate. 	<p>Meets</p> <p>The Department considers that the consultation requirements have been met. The application for the fishery was released for public comment from 13 November 2018 until 12 December 2018. No comments were received.</p>
Section 303FN Approved wildlife trade operation	Comment
<p>(2) The Minister may, by instrument published in the <i>Gazette</i>, declare that a specified wildlife trade operation is an approved wildlife trade operation for the purposes of this section.</p>	<p>Meets</p> <p>An instrument of declaration as an approved WTO will be registered on the Federal Register of Legislation. A link to the declaration will be available on the Department's website.</p>
<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that:</p> <ul style="list-style-type: none"> (a) the operation is consistent with the objects of Part 13A of the Act; and 	<p>Meets</p> <p>The operation of the fishery is managed consistent with Objects of Part 13A, as outlined in Section 2 of this assessment.</p>

<p>(b) the operation will not be detrimental to:</p> <p>(i) the survival of a taxon to which the operation relates; or</p> <p>(ii) the conservation status of a taxon to which the operation relates; and</p> <p>(ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and</p>	<p>Meets</p> <p>The fishery will not be detrimental to the survival or conservation status of a taxon to which it relates, nor will it threaten any relevant ecosystem, within the next three years, given the management measures currently in place. These include:</p> <ul style="list-style-type: none"> • limited entry • licence endorsements (type and number of nets, and permitted species) • gear and vessel restrictions • spatial and temporal closures, including spawning seasons • a TACC • an ITQ • a harvest strategy for setting TACC.
<p>(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and</p>	<p>Not applicable</p> <p>The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify Crustacea or fish, as a class of animal considered in relation to the welfare of live specimens.</p>
<p>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</p>	<p>Not applicable</p> <p>There are no other conditions specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</p>	<p>Meets</p> <p>The fishery is not expected to have a significant impact on any relevant ecosystem within the next three years, given the management measures currently in place, which include the arrangements described above at s303FN 3(b).</p>
<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>Partially meets</p> <p>The majority of management measures are considered to be effective. Where uncertainty still exists, PIRSA has given an undertaking to monitor catches for all target species to ensure these stocks continue to sustain fishing pressure.</p> <p>However, the continuation of specific management arrangements to recover Black Bream stocks, and the implementation of agreed management options, is needed to ensure that this stock can sustain fishing pressure.</p>

<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <ul style="list-style-type: none"> (a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and (b) whether the legislation applies throughout the State or Territory concerned; and (c) whether, in the opinion of the Minister, the legislation is effective. 	<p>Meets</p> <p>The <i>Fisheries Management Act 2007</i> (SA) is in force at the time of this decision. The legislation under which the fishery is managed, applies throughout South Australian waters. The Department considers that the legislation is likely to be effective.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, and only if, the operation is an operation for the taking of specimens and:</p> <ul style="list-style-type: none"> (a) the operation is a commercial fishery. 	<p>Meets</p> <p>The SA Lakes and Coorong Fishery is a commercial fishery.</p>
Section 303FR Public consultation	Comment
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <ul style="list-style-type: none"> (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal. <p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p>	<p>Meets</p> <p>A public notice, which set out the proposal to declare the SA Lakes and Coorong Fishery an approved WTO (and included the application from PIRSA), was released for public comment on 13 November 2018 to 12 December 2018, for a minimum of 20 business days.</p>
<p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p>Not applicable</p> <p>No public comments about the proposal were received.</p>
Section 303FT Additional provisions relating to declarations	Comments
<p>(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.</p>	<p>Meets</p> <p>A declaration as an approved WTO for the fishery will be made under section 303FN.</p>

<p>(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only:</p> <p>(a) during a particular period; or</p> <p>(b) while certain circumstances exist; or</p> <p>(c) while a certain condition is complied with.</p> <p>In such a case, the instrument of declaration is to specify the period, circumstances or condition.</p>	<p>The standard conditions applied to commercial fishery WTOs include:</p> <ul style="list-style-type: none"> • operation in accordance with the management regime • notifying the Department of changes to the management regime, and • annual reporting in accordance with the requirements of the Australian Government Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition. <p>The WTO instrument for the SA Lakes and Coorong Fishery specifies the standard conditions, and any additional conditions applied.</p>
<p>(8) A condition may relate to reporting or monitoring.</p>	<p>Meets</p> <p>One of the standard conditions specified in Section 4, relates to reporting.</p>
<p>(9) The Minister must, by instrument published in the <i>Gazette</i>, revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.</p>	<p>Not applicable</p> <p>No conditions have been contravened.</p>
<p>(11) A copy of an instrument under section 303FN, or this section is to be made available for inspection on the internet.</p>	<p>Meets</p> <p>The instrument made under section 303FN, including the conditions under section 303FT, will be registered as a notifiable instrument and made available through the Department's website.</p>

Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions	Comment
<p>(1) Minister must take account of the precautionary principle in making a decision, to the extent that the decision is consistent with other provisions under this Act.</p> <p>(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.</p>	<p>Meets</p> <p>Given the current and proposed management measures in place in the fishery (as identified at Section 2 of this assessment), the Department considers that the management agency is taking a precautionary approach to managing risks, to prevent serious or irreversible environmental damage being caused by this fishery.</p>

SECTION 4: SOUTH AUSTRALIAN – SUMMARY OF ISSUES REQUIRING CONDITIONS, FEBRUARY 2019

Issue	Condition
<p><u>General Management</u></p> <p>Export decisions relate to the management arrangements in force at the time of any decision(s) made under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). To ensure that the decision(s) remain valid and export approval continues uninterrupted, the Department of the Environment and Energy (the Department) needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision(s). This includes operational and legislated amendments that may affect the sustainability of the target species or negatively impact on byproduct, bycatch, EPBC Act protected species or the ecosystem.</p>	<p>Condition 1:</p> <p>Operation of the South Australian (SA) Lakes and Coorong Fishery will be carried out in accordance with the <i>Management Plan for the South Australian Lakes and Coorong Fishery</i> 2016, the SA Fisheries Management (Lakes and Coorong Fishery) Regulations 2009, and the SA Fisheries Management (General) Regulations 2017, in force under the South Australian <i>Fisheries Management Act 2007</i>.</p> <p>Condition 2:</p> <p>The Department of Primary Industries and Regions South Australia, to inform the Department of the Environment and Energy of any intended material changes to the SA Lakes and Coorong Fishery management arrangements that may affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p>
<p><u>Annual Reporting</u></p> <p>It is important that the Department of Primary Industries and Regions South Australia produce and present reports to the Department annually in order for the performance of the fishery and progress in implementing the conditions described in this report and other managerial commitments to be monitored and assessed throughout the life of the export approval.</p> <p>Annual reports should follow Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> and include a description of the fishery, management arrangements in place, research and monitoring outcomes, recent catch data for all sectors of the fishery, status of target stock, interactions with EPBC Act protected species, impacts of the fishery on the ecosystem in which it operates and progress in implementing the Department's conditions described in the previous assessment for the fishery. Electronic copies of the guidelines are available from the Department's website at http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries.</p>	<p>Condition 3:</p> <p>The Department of Primary Industries and Regions South Australia to produce and present reports to the Department of the Environment and Energy annually as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

Issue	Condition
<p><u>Murray Cod</u></p> <p>Murray Cod is a freshwater species and listed as ‘vulnerable’ under Part 13 of the EPBC Act. The 2019 fishery submission application, indicates that the status of this species (in the lower Murray River) remains as ‘undefined’.</p> <p>The recovery strategy includes: a re-stocking program (2016 to 2018 inclusive); catch and release during 1 January to 31 July (recreational); restrictions on how the lure is removed; a restriction on targeting in the Chowilla region year-round; and a trolling ban applied for closed season, during 1 August to 31 December (recreational).</p> <p>The Department acknowledges the implementation of a precautionary recovery strategy (in place since 2011) for Murray Cod stocks. However, the Department considers that there is unlikely to be sufficient recovery of Murray Cod, to allow sustainable fishing pressure in the short to medium term.</p> <p>The Department expects that the recovery strategy and approach, will continue to include close monitoring of stocks, and regular (annual, at minimum) reviews, ensuring appropriate management measures are implemented where required.</p> <p>The Department understands that under these management arrangements, there is no commercial take of Murray Cod by the fishery, until stocks recover to levels that can sustain fishing pressure.</p> <p>It is important that the management arrangements are regularly reviewed, and appropriate measures implemented in a timely manner, to minimise any adverse impacts on Murray Cod stocks.</p>	<p>Condition 4:</p> <p>The Department of Primary Industries and Regions South Australia to:</p> <ol style="list-style-type: none"> continue regularly reviewing the management arrangements for Murray Cod stocks in the SA Lakes and Coorong Fishery, on an annual basis as a minimum. implement appropriate and timely protection and management measures, until Murray Cod stock levels increase to a sustainable level.
<p><u>Stock Status</u></p> <p>The Department acknowledges that the Department of Primary Industries and Regions South Australia, has reviewed the Lakes and Coorong Fishery management plan, and the Department continues to support the implementation of measures such as harvest strategies for finfish species and Pigi.</p> <p>However, while most target and byproduct species taken in the fishery are fished sustainably, some risks and uncertainties remain for a number of target species as follows:</p>	<p>Condition 5:</p> <p>The Department of Primary Industries and Regions South Australia to:</p> <ol style="list-style-type: none"> conduct a review of the current (temporary) management arrangements for Black Bream, and implement appropriate management arrangements for the 2019 spawning season. advise the Department of the outcomes of the review in 2019.

Black Bream – overfished:

Fishing mortality is considered high, posing a risk to stock recovery to occur (Earl et al. 2016). Low spawning biomass is considered the most likely cause of low recruitment levels, rather than environmental conditions.

The Department acknowledges the implementation of temporary management arrangements for the protection of Black Bream, and to assist in the recovery of Black Bream stocks. The management arrangements apply to the Black Bream spawning season, from 1 September 2018 until 30 November 2018 (inclusive).

The Black Bream management arrangements include:

- a closure prohibiting the use of mesh nets (commercial and recreational) within 300 m of all barrages located in the Coorong (Area 1)
- a prohibition on the take or possession of Black Bream by both the commercial and recreational fishing sectors within the Lakes and Coorong.

As the closure notice issued under the *Fisheries Management Act 2007* can only be in place for 12 months, the Department of Primary Industries and Regions South Australia have stated in their submission that they will be reviewing the Black Bream management arrangements before the 2019 spawning season.

The Department of Primary Industries and Regions South Australia, has also advised that the Black Bream management arrangements (for 2019) will be discussed following the release of the report *Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017-18*.

It is important that PIRSA advises the Department of the outcomes of the Black Bream temporary management arrangement review and provides the Department with the report *Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017- 18* once it is released. The Department also expects PIRSA to advise of any revised Black Bream management arrangements implemented, if they are found necessary, following the review and report release.

- c) provide the Department with the report *Monitoring salt wedge conditions and black bream (Acanthopagrus butcheri) recruitment in the Coorong during 2017- 18* once released, and advise of any associated changes to Black Bream management arrangements.

Condition 6:

The Department of Primary Industries and Regions South Australia to continue to:

- a) monitor catch level trends for Greenback Flounder, and continue to develop/implement management measures as required to:
- minimise the impact from fishing
 - minimise the impact from environmental conditions known to affect the species.
- b) monitor catches of juvenile and female Yelloweye Mullet, and implement measures as required, to ensure that this species does not become recruitment overfished
- c) improve monitoring of discards in the Lakes and Coorong Fishery, particularly for Mulloway, and:
- monitor trends in stock levels of all target species, and implement measures to mitigate risks identified in the June 2011 risk assessment for the Lakes and Coorong Fishery.

Greenback Flounder – environmentally limited:

Catch and effort trends indicate stocks continue to fluctuate at low levels, with low target effort. The *Greenback Flounder (Rhombosolea tapirina) Stock Assessment Report 2014/15* indicates that low recruitment possibly relates to low freshwater inflows and habitat decline (link available in Section 1, under Notes of this report).

Some environmental conditions such as low freshwater inflows can exacerbate breeding stocks of Golden Perch, Greenback Flounder, Black Bream and Yelloweye Mullet. Freshwater flows are important for food, habitat and spawning success of Golden Perch and Black Bream.

While Greenback Flounder may not be dependent on flows to the Coorong, with increased inflows likely promoting estuarine habitat and maintenance of conditions that support enhanced recruitment of the species in the estuary (Earl and Ye 2016), the Department acknowledges the Department of Primary Industries and Regions South Australia's intention to continue to monitor catch levels for Greenback Flounder, and implement appropriate management actions as required. This includes implementing measures at times when environmental conditions are known to be affecting the species (such as low freshwater inflows).

The Department of Primary Industries and Regions South Australia, has advised that secondary performance indicators for Greenback Flounder, are outlined in the *Supplementary provisions to meet Marine Stewardship Council criteria for the Finfish Harvest Strategy*, and information will be included in the a new harvest strategy for the fishery, following the harvest strategy review in 2019.

The Department understands that the Department of Primary Industries and Regions South Australia will continue to work with other state and national, water and land management agencies, with the aim of aligning freshwater inflows with the known spawning events for all target species.

Pipi – sustainable:

The increasing popularity of the species, means that ongoing monitoring is required to ensure that stocks continue to sustain fishing pressure. A new harvest strategy has been implemented for Pipi stocks, and is scheduled for review in 2019 (with the finfish net sector harvest strategy). The Department

expects monitoring of this species to continue, and the implementation of relevant management measures as required.

Yelloweye Mullet – **sustainable:**

Stock assessment information (Earl and Ferguson 2013) indicates that under existing fishing pressures, Yelloweye Mullet is currently not considered likely to be recruitment overfished, as catches comprised mainly males and females that were larger than the size at which they reach sexual maturity (the legal minimum size for Yelloweye Mullet (~210 mm total length) is below the size at which females reach sexual maturity (~226 mm–256 mm total length)). There does however, remain a risk of this species becoming recruitment overfished if landings of juvenile fish increases (two and three year olds). This presents the risk of females being harvested before they reach their first spawning event (Earl and Ferguson 2013).

The Department expects the Department of Primary Industries and Regions South Australia, to continue to monitor catches of juvenile and female Yelloweye Mullet, and implement measures as required, to ensure that this species does not become recruitment overfished.

Mulloway – **sustainable:**

Stock assessment information indicates that this species is not considered likely to be recruitment overfished, under existing fishing pressures.

Concerns were raised in Ferguson (2010), regarding the number of individuals being discarded before they reach size maturity. Discarding of undersized Mulloway could affect stock sustainability.

The Department expects the Department of Primary Industries and Regions South Australia, to improve monitoring of the number of undersized fish being discarded and implement measures as required, to monitor the number individuals being discarded to ensure that this species does not become recruitment overfished.

The Department expects the Department of Primary Industries and Regions South Australia, to continue to work with other state and national water and land management agencies, with the aim of aligning freshwater inflows with the known spawning events for all target species.

<p><u>Electronic reporting</u></p> <p>The Department acknowledges that the Department of Primary Industries and Regions South Australia, is developing a trial for the use of electronic reporting in the Lakes and Coorong Fishery, to assist in monitoring trends in stock levels of all target species. The new system will require fishers to provide discards information, and Long-nosed Fur Seal impacts (e.g. damaged/discarded catch, gear damage).</p> <p>This is particularly important, given the potential for discarding, and the effect of Long-nosed Fur Seals in the Lower Lakes and Coorong, has continued to increase 'markedly' as indicated in the <i>Fishery statistics and performance indicators for the South Australian Lakes and Coorong Fishery</i> (link available in Section 1, under Notes, above).</p> <p>The Department expects that the Department of Primary Industries and Regions South Australia, will provide advice of when the trial is to commence. In addition, following the trial of electronic reporting being conducted in the fishery (with the view of implementation), the Department expects the Department of Primary Industries and Regions South Australia to provide results to the Department, particularly highlighting the reporting of discards, and the effect of Long-nosed Fur Seals on the fishery.</p>	<p>Condition 7:</p> <p>The Department of Primary Industries and Regions South Australia to:</p> <ol style="list-style-type: none"> provide advice of when the trial of electronic reporting is to commence. provide results of the trial, with a view to implementation of electronic reporting in the Lakes and Coorong Fishery and: <ul style="list-style-type: none"> provide a report to the Department, particularly highlighting the reporting of discards, and the effect of Long-nosed Fur Seals on the fishery.
<p><u>Bycatch</u></p> <p>There is currently no indicator group of bycatch species for the fishery. Fishing operators record daily catch (kg) and effort (days, fisher days, number of nets) for target and byproduct species, and interactions with threatened, endangered or protected species (TEPS) in logbooks. Bycatch is not recorded unless the species is listed as a TEPS. Mitigation measures such as seal exclusion devices are used to minimise risks to some bycatch.</p> <p>While the net fishery harvest strategy includes performance indicators and decision rules based on the fishable area and logbook data, as bycatch (including the number of undersized discards) is not recorded, the decision rules therefore do not apply to bycatch species. The level of risk to breeding populations of bycatch species was assessed as low to negligible (PIRSA 2011).</p> <p>At the time of the 2018 fishery assessment, the Department of Primary Industries and Regions South Australia acknowledged the need to monitor, and implement appropriate management measures, to avoid target species becoming</p>	<p>Condition 8:</p> <p>The Department of Primary Industries and Regions South Australia to:</p> <ul style="list-style-type: none"> provide the Department with a copy of SARDI's annual fishery statistics report (2019) following their assessment of status stocks for key target species, including Mulloway.

recruitment overfished. The Department acknowledges that the Department of Primary Industries and Regions South Australia, is developing a trial of electronic reporting in the Lakes and Coorong Fishery, and the system will require fishers to provide information on all discards (and Long-nosed Fur Seal incidences).

The Department expects the trial to result in improvements to the reporting of discards in the fishery (for instance, undersized target species, in particular Mulloway and Yelloweye Mullet), and appropriate measures can be implemented, to reduce the risk of recruitment overfishing. The Department also expects the Department of Primary Industries and Regions South Australia to finalise the trial within the first year of the WTO approval period, and provide a report on the results following the trial. Consideration could also be given to an appropriate indicator species, or group of species, to assist in the assessment of the status of bycatch stocks.

The Department of Primary Industries and Regions South Australia has advised that biannual assessments of Mulloway, are undertaken through the Status of Australian Fish Stocks process. In 2019, SARDI will include an assessment of status of stocks for the key target species, including Mulloway, in their annual fishery statistics report.

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