

11 LAKES AND COORONG FISHERIES SOUTHERN AUSTRALIA

11.1 Introduction

For the Southern Australia Lakes and Coorong fishery, the Principle 1 and 2 PIs were mapped against the following indicators within the stated reports:

FAM PI:	Assessment Report 2008 Performance Indicator:	
1.1.1 Stock status	1.2.1	To maintain the reproductive capacity of the target species, the level of spawning biomass of the stock is assessed to ensure that it remains above threshold levels.
1.1.2 Reference points	1.1.3.1	The rules and procedures for limiting effort or catch are adequately defined and effective.
1.1.3 Stock rebuilding	-	-
2.1.1 Retained species	2.1.3.1	(Information on the nature and extent of the bycatch and incidental mortality of non-target species is adequate to determine the ecosystem risks posed by the fishery.
2.2.1 Bycatch species	2.1.3.1	Information on the nature and extent of the bycatch and incidental mortality of non-target species is adequate to determine the ecosystem risks posed by the fishery.
2.3.1 ETP species	2.2.4.1	The interaction of the fishery with protected, endangered, threatened or icon species does not result in unacceptable impacts.
2.4.1 Habitats	2.1.2.2	There is adequate knowledge of the impacts on the habitat of fishing gear and operations associated with fishing.
2.5.1 Ecosystems	2.1.5.1	Effects of the fishery on the ecosystem, through the removal of target and non-target species and impacts on habitats, are not unacceptable.

The Assessment Report and the subsequent surveillance reports were completed by SCS.

The fishery is categorised as small-scale, multi-species and multi-method using: mesh nets, swinger nets, hauling nets, drum nets, cockle rakes, and cockle nets. The area includes the freshwater, estuarine and marine waters of the lower Murray River lakes (Lake Alexandrina and Lake Albert), the Coorong lagoons and the coastal marine waters adjacent to the Sir Richard and Youngusband Peninsulas, to three nautical miles from the low water mark (AR 2008).

There are four main species in this fishery, according to the Department of Environment and Heritage (2005):

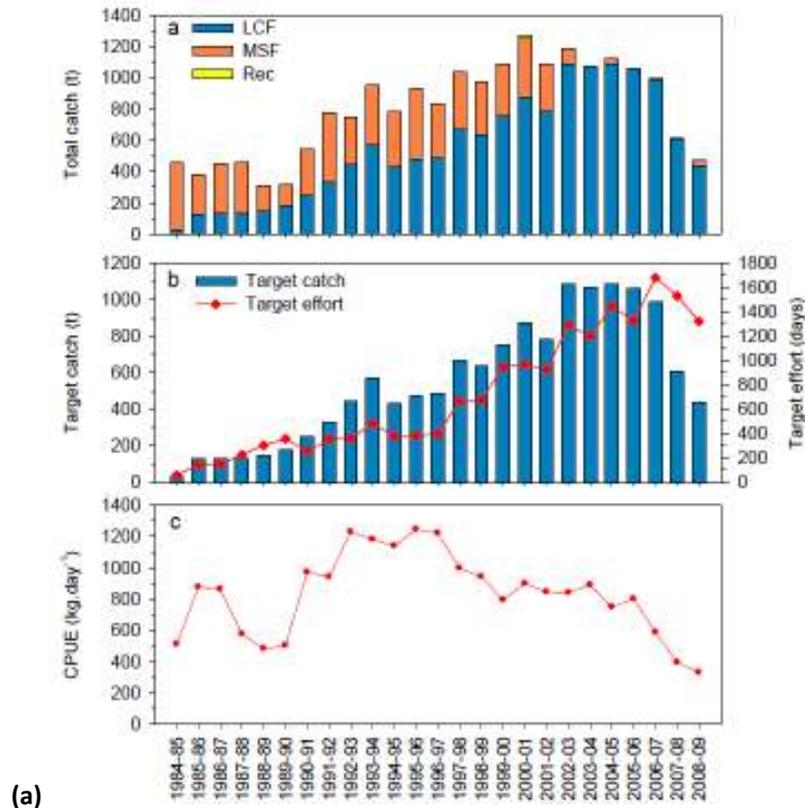
- Goolwa cockles or “Pipi” (*Donax deltoides*);
- mulloway (*Argyrosomus japonicus*);
- yellow-eye mullet (*Aldrichetta forsteri*); and
- golden perch (*Macquaria ambigua*).

Three other species are also fished in the fishery: European carp (*Cyprinus carpio*), black bream (*Acanthopagrus butcheri*), and greenback flounder (*Rhombosolea taparina*).

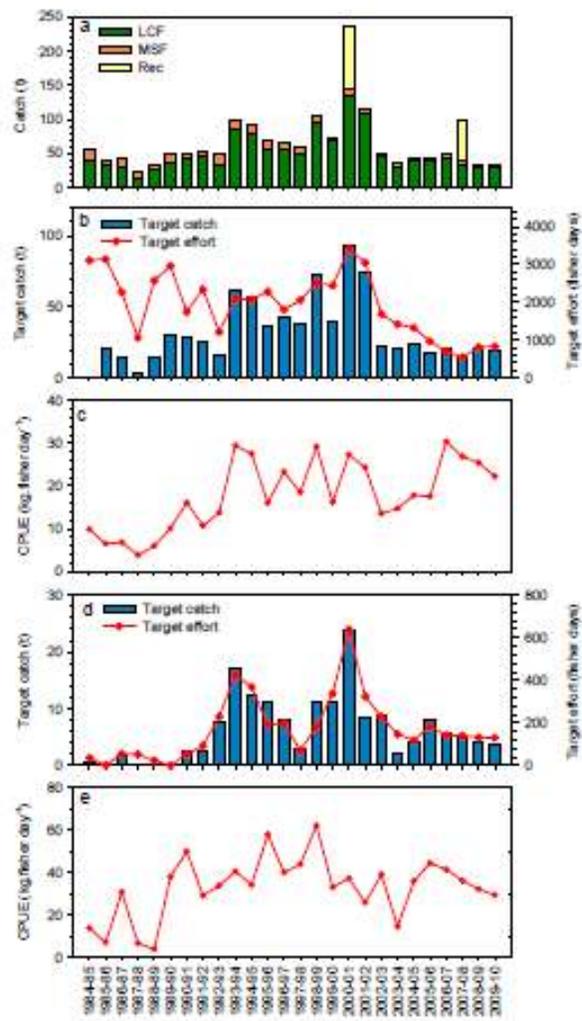
11.2 Principle 1

Principle 1 - FAM reference (PI)	Jun: Assessment Report	Sept: SR1	Jun: SR2
Year	2008	2009	2010
1.1.1 Stock status score	1.2.1 Mulloway 85 Golden perch 85 Goolwa cockles 85 Yellow-eye mullet 85 85	-	-
1.1.2 Reference point score	85 and 1.1.3.1 79 for Goolwa cockles condition 22 raised	On target	-
1.1.3 Stock rebuilding	-	-	-

Figure 1. Inter-annual trends in catch & effort for Goolwa cockles; (a) total catch (b) target catch & effort (c) CPUE
Source: Ferguson 2010, 2011

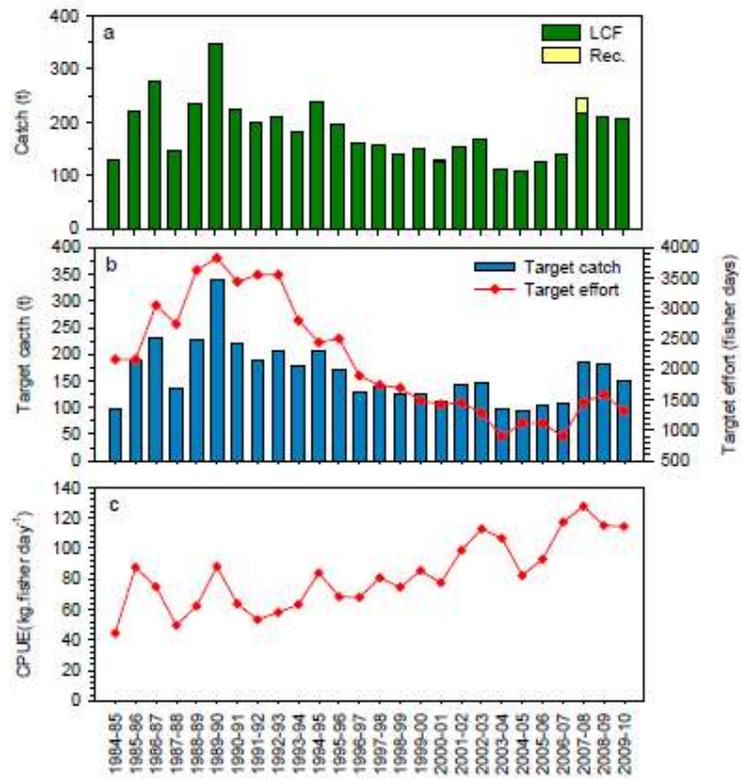


2.4 Mulloway (*Argyrosomus japonicus*)



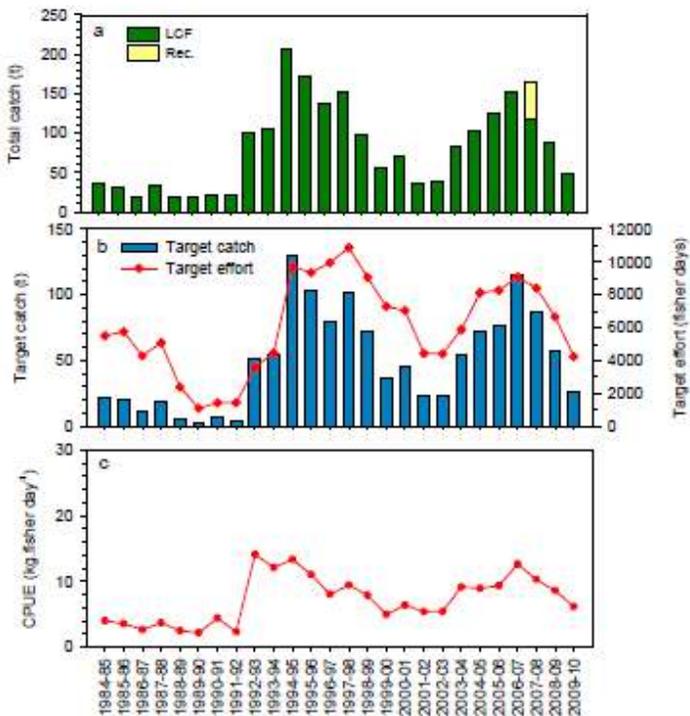
(b)

2.6 Yellow-eye mullet (*Aldrichetta forsteri*)



(c)

2.2 Golden perch (*Macquaria ambigua*)



(d)

11.2.1 Indicator trend

The AR (2008) reported that for the species covered by certification, stock status and reference point status were satisfactory, except for the Goolwa cockle. The 2010 stock assessment placed all of the species, except the cockles, within the reference limits for all four of the PIs used in the assessment (with the exception of one, CPUE for the yellow-eye mullet) (Ferguson, 2010). For all four of the species, the potential threats to the stock status were identified as environmental factors and variable year classes rather than over-fishing.

The performance indicator³ used to assess the stock status for the cockles was below the threshold at the time of certification but by SR2 (2010) assessments showed improvement in recent recruitment and the stock. The total catch and effort showed a decreasing trend from the period 2006-2007 to 2007-2008.

11.2.2 PI correlation

All of the species scored 85 for stock status and all except the Goolwa cockles scored 85 for reference points. The 79 score for the cockle is a reflection of the stock assessment (Ferguson, 2010), which showed that for this species catch CPUE and the 3-year total catch trend were above their reference points.

11.2.3 Conditions

Condition 22 was raised in the AR (2008) against the reference point PI for Goolwa cockles. To satisfy this condition the fishery must: *“Provide a considered evaluation as to whether the reference points derived from the 1990/91 to 2000/01 data are appropriately precautionary. This is being required since the 80 Scoring Guidepost for this indicator requires an adequate reference point. This condition should be met by 2011.”*

In respect of the Goolwa cockles, the first SR (2009) noted that *“if the status of the stock does not show improvements and no evidence is provided on the progress of implementing the harvest control rules by the next surveillance audit, the Pipi⁴ fishery may be subjected to a re-evaluation for Principle 1 and Principle 3”*. By the following SR, progress had been made in that a timeline had been developed for a review of the management plans, including stock status requirements. The plan was to be reviewed to meet statutory requirements by 2010, so the condition was considered to be on target (SR2, 2010). Due to the decline seen in catches of cockles, a formal stock assessment was undertaken and a formal TAC set to ensure keeping the cockles at or above threshold levels (SR2, 2010).

11.3 Principle 2

Principle 2 - FAM reference (PI)	Jun: Assessment Report	Sept: SR1	Jun: SR2
Year	2008	2009	2010
2.1.1 Retained species	2.1.3.1 75 all species condition 24 raised	On target	Minor Non-conformance raised
2.2.1 Bycatch species	2.1.3.1 75 all species	On target	Minor Non-conformance raised

³ Separate PIs are used in the stock assessments for the fisheries including Total catch, CPUE and CPUE trend (Ferguson 2010)

⁴ Pipi is another name for the cockle

	condition 24 raised		
2.3.1 ETP species	2.2.4.1 80 all species	-	-
2.4.1 Habitats	2.1.2.2 85 all species	-	-
2.5.1 Ecosystems	2.1.5.1 75 all species condition 25 raised	On target	On target

11.3.1 Indicator trend

Retained/Bycatch species - 2.1.1 /2.2.1

At the time of certification there was no data available on the risks posed by bycatch in the fishery, confirmation is required as a condition for certification that there are only minor risks posed to birds, crabs and non-commercial fish (AR, 2008). In accordance with the certification requirements, data now exists due to the completion of the study by Ferguson (2010a).

ETP species - 2.3.1

The water bird habitats of the Lower Murray Lakes and Coorong region were designated as wetlands of international importance under the Ramsar Convention in 1985. AR (2008) judged the impacts to be low based on the characteristics of the fishery, direct observations and lack of issues raised by the stakeholders. Ferguson (2010a) established that bycatch of birds out of 53 observed trips was, in total, one Australian Pelican *Pelecanus conspicillatus* and one little black cormorant *Phalacrocorax sulcirostris*. Nevertheless, ETP species have not yet been assessed under condition 23.

Habitats - 2.4.1

The fishery operates within the Coorong National Park. The wetland habitats in this area are reportedly the most significant in Australia and provide an important refuge for migratory waders and waterfowl, particularly during periods of drought. A National Park Management Plan for the Coorong was finalized in 1990 in accordance with the *National Parks and Wildlife Act 1972* to deliver conservation outcomes consistent with broad National Park objectives (DEP, 1990).

The impact of the fishery's gear types, including mesh nets, swinger nets and hand rakes, on the habitats was not considered to be of major damage, i.e. they are usually not in contact with the sediment (to minimize scavenging of fish by crabs) (AR, 2008). Even though the hand rakes for cockles are highly disturbing to the sand habitat, the area where this is conducted is the intensely dynamic shallow surf/swash zone of the beach and therefore the raking is deemed unlikely to contribute any significant additional measure of disturbance to the ecosystem.

Ecosystem - 2.5.1

Due to lack of impact assessments of the fishery there was a lack of evidence available for the assessment; thus a condition was raised against this PI (AR, 2008). Where the assessment team perceived there to be low risk and/or within acceptable limits scores were given as 80 for ETP and 85 for Habitats.

11.3.2 PI correlation

Where data and information was deficient in terms of assessments and evidence for the AR (2008) for the Bycatch (2.2.1) and Habitats (2.4.1) the PIs were scored at 75.

11.3.3 Conditions

Condition 24 was raised against PI Bycatch (2.1.3.1) because the assessment team was not provided with “any data or evidence about the type, level or potential impacts of bycatch in the fishery”. Therefore the client was required to “provide evidence of the composition and magnitude of the bycatch in the fishery, completion of an assessment of the risks posed by such bycatch, the level of risks assigned, and establishment of monitoring programs for the catch of any key bycatch species determined as a result of the FRDC project” (AR 2008). AR (2008) notes that the Fisheries Research and Development Cooperation (FRDC) project on bycatch (FRDC SA05-29) is underway and is an important mechanism for securing a more objective set of data and knowledge on the bycatch. Condition 24 was set to be met by 2011 (AR, 2010).

By SR2 (2010), the Environmental Risk Assessment (ERA) was expected to be completed by November 2010 (after this report commenced) and the bycatch assessment study had been completed (see final FRDC report Project No 2005/061; Ferguson, 2010b).

Condition 25 was raised against Ecosystems (2.5.1) because evidence is needed to demonstrate that there is a “cooperative process involving the RAMSAR and National Park managers and other stakeholders to assess, and as necessary mitigate, the level of trophic-food web risks of the fishery (from bycatch or the removal of target species) to the ecosystem, habitats and non-target species of the three main fishery areas (freshwater, Coorong lagoons, ocean beach)”. The suggested response from the assessment team was: “a qualitative risk assessment process conducted cooperatively with the park and fishery management agencies after the FRDC bycatch project has been completed, in a manner consistent with that of the AFMA/Commonwealth Scientific and Industrial Research Organisation (CSIRO) risk assessment methodology – Level 1 (4 years)”. This condition was intended to be closed out by 2010 and the SR2 (2010) stated that this condition was on target.

11.4 References

- Department for the Environment and Heritage (2000) *Coorong, and lakes Alexandrina and Albert Ramsar Management Plan*. Available from:
http://www.environment.sa.gov.au/biodiversity/pdfs/wetlands/coorong/ramsar_management_plan.pdf (accessed 15/01/2011).
- EH Ferguson, G. (2010) *Fishery stock status report for PIRSA*. Available from:
http://www.sardi.sa.gov.au/__data/assets/pdf_file/0019/125317/No_421_The_South_Australian_Lakes_and_Coorong_Fishery_Stock_Status_Report_for_PIRSA.pdf (accessed 15/01/2010).
- Ferguson, G. (2010a) *Gear interaction of non-targeted species in the Lakes and Coorong commercial and recreational fisheries of South Australia*. Available from:
http://www.sardi.sa.gov.au/__data/assets/pdf_file/0019/136018/No_436_Gear_interaction_of_non-targeted_species_in_the_Lakes_and_Coorong_commercial_and_recreational_fisheries_of_South_Australia.pdf (Accessed 15/01/2011).

The following documents from the MSC website were used as reference material in this case study:

Assessment Report (AR) (2005)	http://www.msc.org/track-a-fishery/certified/southern-ocean/lakes-and-coorong-south-australia/assessment-downloads-1/Coorong_Pub_Cert_June_08.pdf
SR1 (2009)	http://www.msc.org/track-a-fishery/certified/southern-ocean/lakes-and-coorong-south-australia/assessment-downloads-1/2009-Surveillance1.pdf
SR2 (2010)	http://www.msc.org/track-a-fishery/certified/southern-ocean/lakes-and-coorong-south-australia/assessment-downloads-1/22.07.2010-lakes-coroong-2nd-surv-report.pdf