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# **South Australian Fisheries Management Series**

## **Ecological Assessment of the South Australian Marine Scalefish Fishery**

### **Reassessment Report**

Prepared for the Department of Sustainability, Environment,  
Water, Population and Communities

For the purposes of Part 13 and 13(A) of the Environment Protection and  
Biodiversity Conservation Act 1999

September, 2011

**Prepared by the Fisheries and Aquaculture Division of  
Primary Industries and Resources South Australia**

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# 1 Purpose

This report has been prepared by the Fisheries and Aquaculture Division of the Department of Primary Industries and Resources, South Australia (PIRSA).

The purpose of this report is to provide a revised assessment of the management arrangements in place for the South Australian Marine Scalefish Fishery (MSF). This report updates information provided to the Department of Environment, Water, Heritage and the Arts (DEWHA) in 2008 for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The report has been prepared for the Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC) in accordance with the “*Guidelines for the Ecologically Sustainable Management of Fisheries*” (2<sup>nd</sup> Edition), and particularly addresses the level of change that occurred in the fishery since the 2008 assessment.

## 2 Background

The regulations and policies governing the management of the Marine Scalefish Fishery are:

- The *Fisheries Management Act 2007*
- The *Fisheries Management (Marine Scalefish Fisheries) Regulations 2006*
- The *Fisheries Management (General) Regulations 2007*
- The *Fisheries Management (Fish Processor) Regulations 2006*
- The *Management Plan for the South Australian Marine Scalefish Fishery 2006*
- The National Strategy for Ecological Sustainable Development
- The Australian Government ‘Guidelines for the Ecologically Sustainable Management of Fisheries’ as set out in the Australian Government *Environmental Protection and Biodiversity Conservation Act 1999*

The current management plan for the MSF covers all fishing activities related to the MSF undertaken within South Australian waters, including recreational fishing. It also provides a broad policy framework and harvest strategy employed to ensure the ecologically sustainable management and development of the MSF. The management plan can be found at PIRSA’s website [www.pir.sa.gov.au](http://www.pir.sa.gov.au).

Under the *Fisheries Management Act 2007* (SA) the Fisheries Council of South Australia is required to prepare management plans for commercial fishing activities. The Minister for Agriculture and Fisheries has called for the Fisheries Council to prepare a new management plan for the MSF by June 2012. The 2006 management plan will continue to operate until such time as the new management plan comes into force. The new management plan will provide greater certainty in the day-to-day, and long term management, and

decision making processes for all stakeholders. The new management plan must:

- Describe the biological, economic and social characteristics of the fishery
- Identify the impacts or potential of the fishery on its associated ecosystems, including impacts on non-target species of fish and other aquatic resources
- Identify ecological factors that could have an impact on the performance of the fishery
- Assess the risks posed to the fishery by the above factors and set out strategies for addressing those risks
- Set out methods for monitoring the performance of the fishery and the effectiveness of the plan
- Specify the share of aquatic resources to be allocated to each fishing sector under the plan and a method for adjusting allocations
- Provide compensation to persons whose entitlements are compulsorily acquired

As part of the process of preparing a new management plan, an ecologically sustainable development (ESD) risk assessment workshop was held in April 2011. The ESD risk assessment report is nearing completion and will provide insight into the risks facing the MSF, the risk ratings and the discussion of those risks.

Any changes to the management arrangements of the MSF made by the new management plan will be communicated to be DSEWPAC once the plan is finalised.

### 3 Level of Assessment

The South Australian MSF was assessed as an approved for Wildlife Trade Operation in 2008. Since the last assessment, there have been changes in most areas of interest or particular issues as outlined in page 5 of the *Guidelines for the Ecologically Sustainable Management of Fisheries*.

**Table 1:** Level of assessment required by the South Australian Marine Scalefish Fishery

Issue	Area of Interest	Yes	No
Fishery	Has there been any change to management arrangements, and/ or fishing practices?	X	
External Influences	Has there been any change to an environmental issue/influence outside of the fishery management agencies control?	X	
Interaction with protected species	Has there been any change in the nature, scale, intensity of impact, and/or management response?	X	
Ecosystem impact	Has there been any change in nature, scale or intensity of impact, and/or subsequent management response?		X
Target Stock Status	Has there been any change in the target stock status?	X	
By-product/ bycatch status.	Has there been any change in the by-product and/or by-catch stock status?	X	

Considering the above, the level of submission required for the South Australian Marine Scalefish Fishery is a comprehensive level of information.

It is important to note that all changes and progress in the recommendations provided by DSEWPAC have been communicated to DSEWPAC through the annual reporting process.

## 4 Fishery

### 4.1 Commercial Fishery

The MSF includes the take of most marine species of fish, molluscs, crustaceans, annelids and sharks, but excludes Rock Lobster, Prawns, Abalone, and freshwater fish species, all of which are managed separately.

The total catch of marine scalefish species in 2009/10 was 3,354 tonnes, valued at almost \$23.2 million (Knight and Tsolos, 2011). The average price per kilogram of MSF species increased from \$6.97/kg in 2007/08 to \$7.32/kg in 2008/09. It is estimated that the total contribution made by the MSF to the gross state product of the South Australian economy was \$37.9 million in 2008/09 (Econsearch, 2010).

There are more than 50 species of 'scalefish' taken by commercial fishers in South Australia, however, for the purpose of this report main target species will be considered in three categories, as identified in the management plan for the MSF (Noell, *et al.*, 2006)

1. Primary
  - a. King George Whiting (*Sillaginodes punctata*)
  - b. Snapper (*Chrysophrys auratus*)
  - c. Southern Sea Garfish (*Hyporhamphus melanochir*)
  - d. Southern Calamari (*Sepioteuthis australis*)
  
2. Secondary:
  - a. Yellowfin Whiting (*silago schomburgkii*)
  - b. Australian Salmon (western species: *Arripis truttacea*; eastern species: *A. trutta*),
  - c. Australian Herring (*Arripis georgianus*)
  - d. Mud Cockles (*Katelysia* spp.)
  - e. Snook (*Sphyraena novaehollandiae*)
  - f. Sand Crabs (*Ovalipes australiensis*)
  - g. Yellow-eye Mullet (*Aldrichetta forsteri*)
  - h. Mullet (*Argyrosomus japonicus*)
  - i. Bronze and Dusky Whalers (*Carcharhinus* spp.)
  - j. Ocean Jackets (*Nelusetta ayraudii*),
  
3. Tertiary
  - a. Parrotfish (Family Scaridae)
  - b. Trevally (*Pseudocaranx dentex*)
  - c. Gummy Shark (*Mustelus antarticus*)
  - d. Rays and skates
  - e. Cuttlefish (*Sepia* spp)

The MSF commercial fishery is an effort managed fishery, primarily managed through input controls however a number of output controls are also used.

### ***Input controls:***

- The MSF Fishery is a limited entry fishery
- Gear restrictions, limits on the quantity and combinations of gear that can be used apply
- Seasonal and spatial closures (see **Attachment 1**)
- Owner/operator fishery
- Limits on number of agents
- Licence amalgamation scheme
- Non-transferability of gear between licences

### ***Output Controls:***

- Minimum legal lengths for most species
- Protection of spawning female crabs
- 1000 tonnes TAC for Australian Salmon by commercial net fishers, with up to 20 tonnes individual limits
- A TAC for the Mud Cockle fishery with individual transferable quota for quota holders and 10kg per day trip limits for licences without quota
- 25 Razorfish limit per person per day
- 5 trip limit for school and gummy shark per day (as per OCS arrangements)
- Quota for Blue Swimmer Crabs and Australian Sardines (both fisheries managed separately and reported on separately).

The heterogeneous mixture of participants, fishing devices and licence conditions, make the task of managing this fishery complex. The large number of licence holders, the large number of species being targeted and variations and permutations of licence endorsements compounds the complexity of the current management arrangements. In addition, licence holders in other fisheries have access to species prescribed in the Marine Scalefish Fishery for commercial purposes including the Rock Lobster Fisheries, the Lakes and Coorong Fishery and the Miscellaneous Fishery. See Table 3 for the number of licence holders in each fishery with access to marine scalefish species. For a detailed summary of each fisheries' access entitlements to marine scalefish species, see **Attachment 2**.

**Table 3.** Licence holders of South Australian fisheries with access to marine scalefish species.

<b>Fishery Licence Type</b>	<b>No. Licence Holders</b>
<b>Marine Scalefish Fishery Licences</b>	
Marine Scalefish Fishery	327
Restricted Marine Scalefish Fishery	12
<b>Other Fisheries With Access to Marine Scalefish Species</b>	
Northern Zone Rock Lobster Fishery	65
Southern Zone Rock Lobster Fishery	153
Lakes and Coorong Fishery	36
<b>Total</b>	<b>593</b>

#### **4.2 Recreational Fishery**

The South Australian recreational fishery is primarily managed through output controls in the form of daily bag and boat limits, and minimum and/or maximum size limits for all key species. Recreational fishing licences are not issued in South Australia, with the exception of a pot registration scheme for Rock Lobster. In addition to these output controls, there are a number of spatial and temporal closures that apply to both commercial and recreational fishers.

The most up to date information regarding the participation rates and demographics among recreational fishers is derived from the '2007/08 South Australian Recreational Fishing Survey' (Jones, 2009). The Survey estimated that approximately 236,000 South Australian residents went recreational fishing in the previous 12 months. This represented a participation rate of 16.2% of the South Australian population. A total of 98 individual species were reported as caught by recreational fishers in the survey period.

### 4.3 **Management changes in the fishery**

#### **Recreational**

Since the last assessment in 2008, there have been no changes to management arrangements in the recreational fishery.

The Minister has requested that the Fisheries Council prepare a recreational fishery management plan by 30 June 2012. This plan will be informed by a recreational bag, boat and size limit review to be commenced in 2011. At present, PIRSA is also considering the introduction of fish possession limits for the recreational fishing sector.

#### **Commercial**

There have been a number of management changes for Mud Cockles in the South Australian MSF. An individual transferable quota system was introduced in 2008/09 in response to concerns about future sustainability of stocks. Mud Cockles are managed through three quota management zones. In the Section Bank/Port River zone, the TACC for 2010/11 was reduced by 50% from 22.6t to 11.3t to help rebuild the stock in response to the latest biomass estimate and concerns of industry. There was also a two month closure introduced for 2011, commencing on 1 January and concluding on 28 February to prevent fishing during the peak spawning season and therefore protect the spawning stock and enhance stock rebuilding. The Port River Mud Cackle Fishery has recently been closed to all recreational and commercial fishing from 1 July 2011 to 30 June 2012 due to sustainability concerns for the resource. A decision on whether the closure will be lifted or extended will be made once further information becomes available regarding the level of stock recovery.

In the Coffin Bay zone, as part of a trial, minimum size limits were reduced to 33 mm until 30 June 2011 to provide opportunity for industry to effectively harvest both *Katelysia scalarina* and *K. rhytiphora* under a single size limit whilst still ensuring that both have the opportunity to spawn before they reach harvestable size. The TACC was also reduced from 56t in 2009/10 to 48.1t in 2010/11. This is deemed to be a conservative exploitation rate of the most recent biomass estimates.

In the West Coast zone, there are no sustainability concerns. Nevertheless, the TACC has also been set at a conservative exploitation rate, and this resulted in an increase in the TACC from 15t in 2009/10 to 21t in 2010/11.

The MSF has seen a large increase in commercial longline effort. This has resulted in increased fishing pressure on Snapper and Bronze Whaler stocks. In relation to Snapper, limit reference points were breached relating to high catches, high longline effort and record catch rates (Fowler et al, 2010a). A more detailed summary of Snapper stocks is found below at section 7.2.

The Snapper fishery performance is strongly influenced by recruitment (the number of juvenile fish that are spawned and reach a size/age where they are caught in the fishery), which is variable from year to year. Total commercial catch and longline effort are at record high levels. While the Snapper biomass has recently been estimated to be relatively high (potentially due to good recruitment in recent years), once this biomass decreases, continued commercial effort at the current level is not likely to be sustainable.

A review of management arrangements for Snapper is currently being conducted because:

- Commercial catches have increased in recent years to be the highest on record. Linked to increasing catches is an increase in longlining effort, which has included an activation of latent effort in the fishery and increased efficiency of fishers through gear modifications
- Recent catch and effort logbook figures have indicated there may be a decline in biomass of Snapper in Southern Spencer Gulf.
- Commercial reported effort has continued to increase over the last 2 years as a consequence of fishers focussing on Snapper.
- There is industry and community concern for the current status of the fishery and poor economic return in the Snapper fishery at various times of the year.

The Snapper management review aims to develop key management arrangements that effectively control the level of commercial impact on Snapper stocks, optimise Snapper spawning and recruitment, and support a sustainable Snapper fishery.

Additionally, PIRSA will continue to closely monitor Bronze Whaler stocks given the increased commercial longlining effort. PIRSA has supplied seed funding to SARDI to attract further project funding for a larger research study into Bronze Whaler stocks.

PIRSA has also conducted a review into commercial longlining. Proposed changes to management arrangements for the commercial longlining sector are currently being prepared. These changes would allow commercial longliners to have non-attendance of their longlines, whilst placing a number of additional restrictions on them; including a 4 hour maximum soak time, a maximum of 400 hooks on board or in the water and increased marking requirements for longlines for marine safety and visibility.

PIRSA is also in the final stages of completing a report into the management arrangements in place for Garfish and will consider new arrangements once the report is complete. Garfish is currently assessed as over-fished, and this review will lead to the development of a stock recovery strategy. SARDI is in the process of completing a report into mesh selectivity for Garfish. PIRSA is also working with industry on setting management targets for the recovery of Garfish, as part of the harvest strategy development for the management plan.

Finally, PIRSA is in the process of undertaking a gear review into the devices used in all fisheries. The gear review project is part of a greater rules review

project being conducted by PIRSA under the direction of the Fisheries Council. The purpose of the rules review project is to review the rules imposed on fishing activities to simplify and standardise the regulatory environment for fisheries management. The gear review aims to:

- 1) Improve clarity in the gear permitted and its restrictions in the legislation so that they are easier to interpret by all (managers, industry and compliance)
- 2) Ensure restrictions for the gear are enforceable
- 3) Where appropriate, provide flexibility for fishing operations
- 4) Contribute to a sustainable fishery by upholding the use of gear types that minimise the impact of fishing gear and associated practices on marine ecosystems (e.g. not allowing scallop dredging in South Australian waters).

Amendments to licence conditions and regulations for gear will be made to implement the results of the gear review.

## 5 External Influences

There have not been any changes to environmental issues outside of PIRSA's control.

### 5.1 *Introduction of Marine Parks*

In 2007, the South Australian Government introduced the *Marine Parks Act*. The legislation provides for the conservation of marine habitats and marine biodiversity through a comprehensive, adequate and representative system of marine parks. A network of 19 marine parks was established in 2009 under the legislation. Management plans with zoning for each of the 19 marine parks are being developed with assistance from local communities and stakeholders. The implementation of marine parks will be overseen by the Department of Environment and Natural Resources (DENR).

As part of the 2011 ESD risk assessment process stakeholders in the commercial fishing sector identified the introduction of marine parks, and the associated issues of potential restricted fishing access, as a risk to the operation of the fishery. The Government is committed to managing any unavoidable displaced commercial fishing effort that may arise from the implementation of marine parks. There is an obligation under the *Marine Parks Act 2007* to pay compensation where statutory rights are affected.

## 6 Interaction with Protected Species

All commercial fishers must report fishing interactions with threatened, endangered and protected species. To assist fishers in reporting, PIRSA and SARDI have produced a Wildlife Interaction Identification and Logbook. All interactions are required to be reported. Interactions include capture, entanglement and collision.

In May 2011, PIRSA produced a report titled 'Interactions with Threatened, Endangered or Protected Species in South Australian Managed Fisheries – 2007/08, 2008/09, and 2009/10', (Knight and Vainickis, 2011). This report will now be produced on an annual basis.

A summary of wildlife interactions reported in the MSF in 2009/10 is provided in Table 4 below.

**Table 4.** Summary of wildlife interactions in the MSF, 2009/10

<b>Species</b>	<b>Number of interactions</b>	<b>Status of animal</b>
Cormorant	20	19 released alive, 1 dead
Pacific Gull	1	Released alive
Great white shark	1	Alive
New Zealand Fur Seal	1	Released alive
Turtle	1	Released alive
<b>Total number of interactions</b>	<b>24</b>	<b>23 released alive, 1 dead</b>

### 6.1 *Australian Sea Lions*

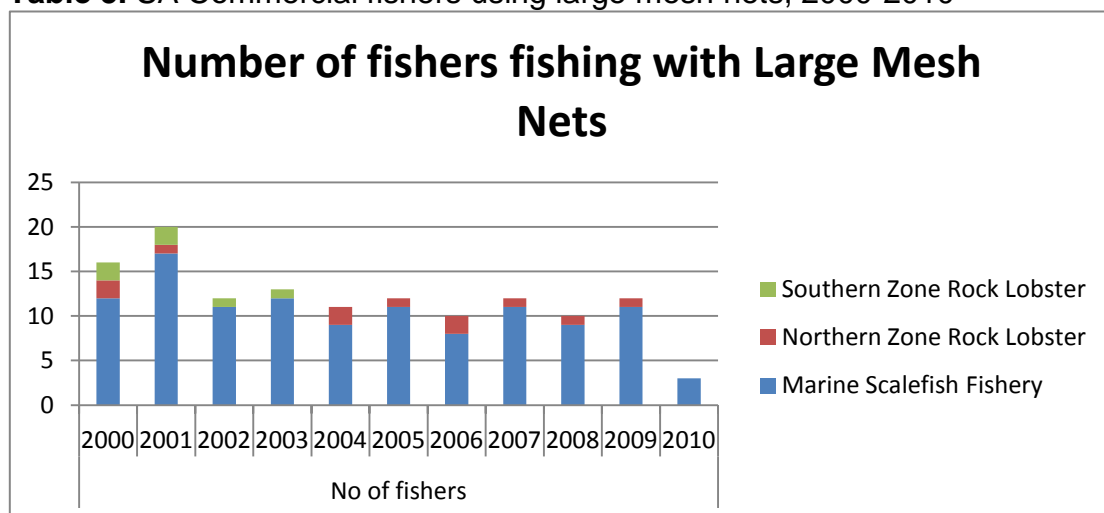
Australian Sea Lions are protected under both State and Commonwealth legislation and are listed as vulnerable to extinction. While no Australia Sea Lion interactions have been reported in logbooks, there is a potential for interactions with the MSF. Australian Sea Lions are susceptible to capture in gear used within the MSF, particularly large mesh gill net. The recent ESD risk assessment workshop for the MSF, conducted as part of the development of the fishery management plan, rated the risk to Australian Sea Lions as moderate. Given the species characteristics and the potential fishery impacts, the potential impact on the Australian Sea Lion population was considered to be major (C4) and that the likelihood of this occurring into the future was rare (L2), resulting in a risk ranking of moderate. Extreme, high and moderate risks must be addressed with management actions in the management plan.

The Commonwealth Southern and Eastern Scalefish and Shark Fishery (SESSF) has observed interactions with Australian Sea Lions through the use of gill nets, which has resulted in mortalities. The South Australian MSF uses the similar gear, large mesh net, and as such poses a risk of interactions with Australian Sea Lions.

The level of fishing effort with this gear is significantly less than in the SESSF, with the MSF having a small fishery averaging 5.6 tonnes per year between 2001-2007. The SARDI report to the Department of Environment, Water, Heritage and Arts, SARDI research series report No 356 '*Understating the impediments to growth of Australian Sea Lion populations*' pg 89 <[http://www.sardi.sa.gov.au/data/assets/pdf\\_file/0007/116269/No\\_356\\_Update\\_to\\_the\\_report\\_ASF\\_impediments\\_to\\_recovery.pdf](http://www.sardi.sa.gov.au/data/assets/pdf_file/0007/116269/No_356_Update_to_the_report_ASF_impediments_to_recovery.pdf)> shows the small level of fishing effort in the MSF using that particular gear.

The number of MSF licences with large mesh nets endorsements at 26 September 2011 was: 37 MSF, 16 Lakes and Coorong, 19 Northern Zone Rock Lobster Fishery and 26 Southern Zone Rock Lobster Fishery. This endorsement is largely unused and has decreased over time to the current level of only 3 fishers in 2010. Large mesh nets are used to target sharks and the management of School and Gummy Sharks was conferred to the Commonwealth in 2001 under the Offshore Constitutional Settlement (OCS) agreement. South Australian fishers are now limited to taking a bycatch trip limit of only 5 School or Gummy Sharks (combined) per day in each of internal and coastal waters, with no more than 10 on board at any one time. If an SA fisher holds an interest in a Commonwealth SESSF licence with quota they are not allowed to take any School or Gummy Shark pursuant to the SA licence.

**Table 5.** SA Commercial fishers using large mesh nets, 2000-2010



The SESSF is managed by the Australian Fisheries Management Authority (AFMA). The SESSF operates in both State and Commonwealth waters. It is a requirement of the SESSF Management Plan that Commonwealth fishers that operate in State waters (SESSF Shark Coastal Waters Permit) must also hold an SA licence with the equivalent gear they wish to fish under their Commonwealth permit. This arrangement was put in place under the OCS to

limit effort increases in the MSF. Without this requirement for those permits to be dual endorsed, state fishers that fished for shark who obtained a Commonwealth permit and quota could have then sold their state licence resulting in that licence then becoming active for other species, which would likely increase fishing effort in the MSF.

AFMA has recently changed its management arrangements for the shark sector of the SESSF to mitigate interactions with protected species, such as Australian Sea Lions. AFMA has put in place a temporary order, with the potential for it to become a long-term measure, to allow fishers to change gear type from gillnets to longlines. Longlines are not as selective as gillnets, which may increase by-catch levels of state species, such as Snapper. PIRSA is working with AFMA to gather information on the composition and rates of by-catch and will continue to work together to address any issues that may arise.

PIRSA will implement a management strategy for the large mesh net component of the MSF to mitigate potential interactions with Australian Sea Lions. This will include a consultative process with relevant stakeholders and will consider DSEWPAC's consideration of the management strategy recently implemented by AFMA. DSEWPAC advice will aid in the development of revised state fishery management strategies that meet the requirements of the EPBC Act export accreditation.

## 7 Target Stock Status

A research and development strategy is described in the management plan (p.45). Since the last assessment in 2008, and consistent with the prioritisation plan described in the management plan, comprehensive stock assessment reports have been completed for most of the primary species. These reports are available at [www.sardi.sa.gov.au](http://www.sardi.sa.gov.au). The most recent publications for each fishery are:

- **Southern Calamari, 2007:** Steer, M.A., Lloyd, M.T. and Jackson, W.B. (2007). *Southern Calamari (Sepioteuthis australis) Fishery. Fishery Assessment Report to PIRSA*. SARDI (Aquatic Sciences), Adelaide, F2007/000528-2. SARDI Research Report Series No: 229
- **Garfish, 2009:** McGarvey, R., Fowler, A.J., Feenstra, J.E., Burch, P., & Jackson, W.B. (2009) *Southern Garfish (Hyporhamphus melanochir) Fishery. Fishery Assessment Report to PIRSA*. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, 82 pp. SARDI Publication Number F2007/000720-2. SARDI Research Report Series No. 397.
- **Snapper, 2010:** Fowler AJ, McGarvey R, Burch P, Feenstra JE, and Jackson WB (2010). *Snapper (Chrysophrys auratus) Fishery. Fishery Assessment Report to PIRSA*. South Australian Research and Development Institute (Aquatic Sciences), Adelaide, F2007/000523-2, SARDI Research Report Series No. 473.
- **King George Whiting, 2011:** Fowler, A.J., McGarvey, R., Burch, P., and J.E. Feenstra, (2011) *King George Whiting (Sillaginodes punctatus) Fishery: Fishery Assessment Report to PIRSA*. SARDI Aquatic Sciences Publication No. F2007/000843-3. SARDI Research Report Series No. 562.

The assessment of the fishery status for each species is based on the use of fishery performance indicators and limit reference points. The indicators and reference points are defined in the management plan however these were updated by the Marine Scalefish Fishery Management Committee in 2006. These indicators and reference points are being reviewed as part of the review of the management plan for the fishery.

The current fishery indicators are:

- Total commercial catch
- Targeted effort and;
- Targeted Catch Per Unit Effort (CPUE)

The existing limit reference points that relate to the indicators are:

- The 3<sup>rd</sup> highest and 3<sup>rd</sup> lowest values over the reference period;
- The greatest (%) inter-annual variation (+ and -) over the reference period;
- The greatest rate of change (trend) over periods of three or five years (+ and -) through the reference period, depending on the species.

An annual review of the performance of the Marine Scalefish Fishery, individual species, and the fishery as a whole are undertaken for all primary and secondary species (produced by SARDI for PIRSA Fisheries and Aquaculture, and available at [www.sardi.sa.gov.au](http://www.sardi.sa.gov.au)).

The latest stock status report entitled, 'The South Australian Marine Scalefish Fishery Stock Status Report: Report to PIRSA', (Fowler, *et al* 2010b) details the current stock status of the species making up the MSF. This report can be found at the SARDI website, <http://www.sardi.sa.gov.au>. In 2009/10, there were limit reference points breached for three out of four primary species. These are detailed under the species headings below. In summary, of the primary species, King George Whiting and Southern Calamari are fully fished. Snapper stocks are currently sustainably exploited; however they are being monitored closely due to a large increase in commercial long-line effort and a working group has been established to review future management arrangements for Snapper. Garfish is considered over fished and a recovery strategy is being developed. Of the secondary species, all are currently fished at sustainable levels. However, sustainability concerns exist for Bronze Whaler Shark stocks following increased long-line effort. These stocks will be monitored closely in the future, and avenues to address key knowledge gaps are currently being pursued.

**Table 6.** Status, Value and Catch for major species in MSF, 2009-10

Species	Status	Value (\$'000) 2009–10	Total catch (tonnes) 2009–10
Snapper	Fully fished	6,465	916
King George Whiting	Fully fished	5,063	343
Southern Calamari	Fully fished	3,402	366
Garfish	Over fished	1,691	281
Mud Cockles	West Coast – Under fished		
	Port River – Over fished	1,165	99
	Coffin Bay- Fully fished		

Note: Total annual catch for the whole fishery, valued at the landed beach price. GVP estimates are taken from the SA Wild Fisheries Information and Statistics Report, prepared by SARDI (Knight and Tsolos, 2011).

## 7.1 King George Whiting (*Sillaginodes punctatus*)

The total commercial catch of King George Whiting (KGW) for South Australia in the 2009/10 season was 343 tonnes, with a value of AUD \$5.06 million (Knight and Tsolos, 2011). The level of commercial catch for KGW has remained steady since 2003/04, while the value of the fishery has increased by \$0.8 million since then.

In 2009/10, KGW made up 10% of the total commercial catch in the fishery, but represented 22% of the total value for the MSF. For KGW, a single breach of a limit reference point related to the 2<sup>nd</sup> highest handline CPUE yet recorded (Fowler *et al*, 2010b).

King George Whiting is targeted by recreational and commercial marine Scalefish fishers. The dominant long-term trend in the last years is a steady decline in commercial fishing effort. The reduction in the number of licence holders has resulted in less fishing days. Further, the remaining fishers are diversifying their fishing practices resulting in an overall reduction in the commercial catch of KGW over the last 20 years or so (McGarvey *et al*, 2005).

The 2011 KGW stock assessment report states that fishery indicators suggest that the KGW fishery has been relatively stable for several years, and there is no immediate need to reconsider the management arrangements for the fishery (Fowler *et al*, 2011).

## **7.2 Snapper (*Pagrus auratus*)**

Snapper is the highest valued species in the MSF with a value of \$2.47 million and a catch of 916 tonnes in 2009/10 (Knight and Tsolos, 2011). Snapper makes up 27% of the total commercial catch in the fishery and represents 28% of the total value of the MSF.

The value of the Snapper fishery has increased from \$3.2 million in 1999/2000 to \$6.5 million in 2009/10 (Knight and Tsolos, 2011). This increase in value corresponds with an increase in the level of production with the Snapper fishery growing from an output of 576 tonnes in 1999/2000 to 916 tonnes in 2009/10. Half of this overall increase occurred in one year with Snapper catch increasing from 786 tonnes in 2008/09 to 916 tonnes in 2009/10.

The increase in the level of production of the Snapper fishery is due to an increase in commercial longline effort and catch. There has been a distinct shift in commercial effort from handline to longline. Catch per unit effort (CPUE) has increased in two of the last three years, and is currently at its highest level (Knight and Tsolos, 2011).

These increases have seen a number of limit reference points breached that relate to total commercial catch, targeted longline effort and targeted longline CPUE (Fowler *et al*, 2010b).

A comprehensive fishery assessment report was completed in July 2010 (Fowler *et al*, 2010a).

Revised management arrangements for Snapper are being considered because:

- Commercial catches have increased in recent years to be the highest on record. Linked to increasing catches is an increase in longlining

- effort, which has included an activation of latent effort in the fishery and increased efficiency of fishers through gear modifications
- Recent catch and effort logbook figures have indicated there may be a decline in biomass of Snapper in Southern Spencer Gulf.
  - Commercial reported effort has continued to increase over the last 2 years as a consequence of fishers focusing on Snapper.
  - There is industry and community concern for the current status of the fishery and poor economic return in the Snapper fishery at various times of the year.

The Snapper fishery performance is strongly influenced by recruitment (the number of juvenile fish that are spawned and reach a size/age where they are caught in the fishery), which is variable from year to year. Total commercial catch and longline effort are at record high levels. While the Snapper biomass has recently been estimated to be relatively high (potentially due to good recruitment in recent years), once this biomass decreases continued commercial effort at the current level is not likely to be sustainable.

### **7.3 Southern Calamari (*Sepioteuthis australis*)**

Southern Calamari is the third most valuable species in the MSF contributing \$3.4 million (15%) to the MSF in 2009/10 (Knight and Tsolos, 2011). The total commercial catch for Southern Calamari was 366 tonnes, representing 11% of the total catch for the fishery in 2009/10. For the 2009/10 season, no limit reference points were breached for Southern Calamari.

Calamari are taken by commercial fishers in most shallow, coastal waters of South Australia. Most of the catch is landed by the hand jig and haul net sectors; however gill nets and dab nets are also used.

Targeted jig CPUE calculated from fishery-dependent catch and effort data is considered the most reliable estimate of relative abundance of Southern Calamari. Targeted jig CPUE was on a downward trend from 2004/05 to 2006/07. There has been a significant increase in targeted jig CPUE from 2008/09 to 2009/10; however, this was not significant enough to breach a limit reference point (Fowler *et al*, 2010b).

Extreme inter-annual variability is typical of squid fisheries and it has been suggested that environmental processes affect spawning and recruitment (Boyle & Roadhouse, 2005).

### **7.4 Southern Garfish (*Hyporhamphus melanochir*)**

Southern Garfish is a commercially important species in South Australia being the fourth most valuable species in the fishery. Total Garfish catch represented a value of \$1.7 million in 2009/10, with a production level of 281

tonnes (Knight and Tsolos, 2011). Catch has been stable since 2006/07, despite a fluctuating CPUE for haul net fishers. CPUE for dab net fishers has increased every year since 2006/07 (Fowler *et al*, 2010b).

The 281 tonne commercial catch in 2009/10 triggered a limit reference point for the lowest total commercial catch in the fishery's history (Fowler *et al*, 2010b).

In South Australia, the Southern Garfish fishery is principally located in the Spencer Gulf (SG) and Gulf St Vincent (GSV). Most of the Garfish landed is caught by haul net fishers. Commercial catches from both gulfs are similar, but recreational catch is higher in the GSV. Haul net fishing is now largely restricted in the southern gulfs by large netting closures. As such, the southern gulfs now effectively support small dab net fisheries. Dab net catch, effort and catch rates have not shown any significant changes since the net sector restructure. In the northern gulfs, the commercial fishery is dominated by the haul net sector. In both northern gulfs, Garfish are heavily exploited and each regional population is severely truncated. There are few positive signs regarding the status of the Garfish fishery, except that the declining fishery indicators of the 2000s have stabilised to some extent (McGarvey *et al*, 2009).

A review into the management arrangements currently in place for Southern Garfish is underway and management strategies designed to improve the status of the fishery will be put in place. SARDI is currently completing a report into mesh selectivity for Garfish. PIRSA is also working with industry on setting management targets for the recovery of Garfish, as part of the harvest strategy development for the management plan. PIRSA will develop an options paper in consultation with industry for how to meet these targets.

## 8 By-product and by-catch stock status

It is important to understand the differentiation between by-product and by-catch species within the MSF.

By-product species are those species that are generally not targeted, but nonetheless retained. Fishing operations may be conducted with the expectation that some of these 'by-product' species will be captured. There are well established markets for a number of by-product species in the MSF, so these species are invariably always landed. At present, there are no sustainability concerns for any species caught as by-product as they are generally not targeted and their catch rates and market demand remain within sustainable levels.

By-catch species are not targeted and not retained. Most of the by-catch in the MSF consists of:

- Undersized fish
- Legal sized fish that are legislatively required to be returned to the water, e.g. when recreational bag/boat limits or commercial quotas are exceeded, or fish that are caught during closed seasons or in closed areas
- Unwanted catch

Most of these classifications may apply to the four primary species in the fishery: King George Whiting, Snapper, Southern Garfish and Southern Calamari. Information on the discarded by-catch of these species is derived from a variety of sources including the voluntary information reported by the commercial fishers.

SARDI completed a report for PIRSA titled, 'A Preliminary Consideration of By-Catch in the Marine Scalefish Fishery of South Australia' (Fowler *et al*, 2009), that stemmed from a recommendation by DEWHA that PIRSA was to establish a long-term monitoring program for by-catch in the MSF.

This preliminary study was limited in its scope and focussed on the three main commercial gear types of handlines, haul nets and longlines. The study focussed on fishing activity in Gulf St Vincent and Spencer Gulf from September 2007 to August 2008.

During the study, a total of 122 fishing operations were monitored, producing an estimated catch of 78,765 individuals from 104 different species. There were highly significant differences in the species composition and catch rates of individual species taken by the three gear types. Therefore, the nature of the by-catch had to be considered differently for each gear type.

In the survey period, commercial handline effort was targeted at either King George Whiting or Snapper. Catches were dominated by the two target species with generally >80% of all captured organisms being retained. Low

numbers of discards included undersized target species, and some non-commercial species. Most discards from handlines were released in good condition, with the exception of Snapper that were often discarded in poor condition suffering barotrauma.

Haul net effort was concentrated in the northern gulfs and involved floating nets and sinking nets. The average catch per haul involved 10 species and >1000 individuals. The rate of retention of fish usually exceeded 65%, while discards were dominated by teleost fishes and included some undersized commercial species. The retention rate for haul nets was lower than that of the handline sector, however it was relatively high compared to similar net fisheries in south-east Australia (38% for Port Phillip Bay, 26% for Corner Inlet, Victoria and 44% for Botany Bay, New South Wales). The condition of discarded fish was largely influenced by where in the net they were caught; those from the pocket were generally in good condition, while those entangled in the wing mesh were generally in a poor condition. Up to 23% of the captured Southern Garfish were discarded, and were always in a poor condition regardless of net position.

For longlines, different hook sizes were used to target different size classes of Snapper. The report found that hook size significantly influenced species composition, catch rates and condition of discarded fish. Large hooks produced catches with low numbers of species that were dominated by legal sized Snapper. 82.8% of these fish were retained with discards generally in good condition. Smaller hooks produced a broader range of species and a much lower retention rate of 55.3%. Most of the discards were undersized Snapper that were released in poor condition.

In summary, this study has determined that there are multiple factors that influence the species composition, catch rates and rates of discard in the MSF. The report found that the primary influence on by-catch was gear type, which profoundly influenced the species composition and catch rates of individual species. Other factors influencing by-catch included the mode of deployment of particular gears and geographic and seasonal influences. The report recommended that consideration of all these factors is required when developing a long-term monitoring program for by-catch in the MSF.

## 9 Additional Information:

Information relating to all of South Australia's commercial fisheries:

- Knight M., and A. Tsolos, (2011) *South Australian Wild Fisheries Information and Statistics Report 2009/10*. SARDI Aquatic Sciences Publication No. F2009/000804-3. SARDI Research Report Series No. 521.
- Jones, K., (2009) *2007/08 South Australian Recreational Fishing Survey*. South Australian Fisheries Management Series. Paper No. 55, December 2009.
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Information specific to the South Australian MSF:

- Fowler, A.J., McGarvey, R., Feenstra, J.E., Burch, P., and W.B. Jackson, (2010a) *Snapper (Chrysophrys auratus) Fishery: Fishery Assessment Report to PIRSA*. SARDI Aquatic Sciences Publication No. F2007/000523-2. SARDI Research Report Series No. 473.
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- Gorman, D., Mayfield, S., Burch, P. and Ward, T.M (2010). Distribution, harvestable biomass and fisheries biology of *Katelysia* spp. in the South Australian commercial mud cockle fishery. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000263-1. SARDI Research Report Series No. 442. 36p.

## 10 Recommendations and Conditions

### Condition 1:

Operation of the fishery will be carried out in accordance with the Management Plan for the South Australian Marine Scalefish Fishery made under the *Fisheries Management Act 2007* (South Australia) and consistent with the *Fisheries Management (Marine Scalefish Fisheries) Regulations 2006* and the *Fisheries Management (General) Regulations 2007*.

### Progress:

Operation of the MSF continues to be managed in accordance with this legislation.

### Condition 2:

The Department of Primary Industries and Resources, South Australia (PIRSA) will advise Department of Environment, Water, Heritage and the Arts (DEWHA) of any material change to the fishery's management arrangements that could affect the assessment against which the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) decisions are based.

### Progress:

PIRSA understands the importance of maintaining regular and open lines of communication with DSEWPAC, and will continue to communicate any changes in the management of the MSF. PIRSA will continue to communicate management changes as they arise and through the annual reporting process. PIRSA will be communicating the changes contained in the new management plan due for completion in June 2012.

### Condition 3:

PIRSA to produce and present reports to DEWHA annually as per Appendix B to the Guidelines for the *Ecologically Sustainable Management of Fisheries – 2<sup>nd</sup> Edition*.

### Progress:

On-going annual reporting has been agreed upon between DSEWPAC and PIRSA. PIRSA has completed annual reporting to date and this will continue to occur.

### Recommendation 1:

In the review of the management plan, PIRSA to:

- a. Identify areas at risk of localised depletion and implement appropriate management measures to address the identified risks;
- b. Implement appropriate measures to ensure risks identified in relation to bycatch and by-product species are addressed and minimised; and

- c. Seek the improvement of catch and effort data of the fishery, including consideration of finer scale reporting and the introduction of a robust system to validate catch and effort data.

**Progress:**

PIRSA is currently reviewing the management plan for the MSF. A new management plan for the MSF is due to be completed by June 2012. PIRSA conducted an ecologically sustainable development (ESD) risk assessment on 18 April 2011 and the report is currently being finalised.

Issues of risks of localised depletion will be identified through the development of harvest strategies for species in the management plan process. Mitigation strategies will be developed to deal with high risk areas.

Since the last assessment, PIRSA has completed a report titled, 'A Preliminary Consideration of By-Catch in the Marine Scalefish Fishery of South Australia' (Fowler et al, 2009). The study documents the species composition, catch rates and rates of discarding by the commercial MSF. The report found that the primary influence on by-catch was gear type, which profoundly influenced the species composition and catch rates of individual species. Other factors influencing by-catch included the mode of deployment of particular gears and geographic and seasonal influences. The report recommended that consideration of all these factors is required when developing a long-term monitoring program for by-catch in the MSF.

PIRSA will use the ESD risk assessment report to identify risks in relation to by-catch and by-product species and develop mitigation strategies for them to be included in the new management plan.

PIRSA is seeking to improve the quality of catch and effort data in the fishery in a number of ways. First, this issue has been included in the Rules Review Project. PIRSA will be reviewing the current reporting requirements in the Regulations for all fisheries and will make changes as required. The *Fisheries Management Act 2007 (SA)* has been amended so as to allow Fisheries Officers to check logbooks.

PIRSA has conducted a review into Garfish management arrangements that will lead to the development of a recovery strategy to bring the species back to a sustainable level of fishing. A review into Snapper management arrangements has also been undertaken to provide a sustainable management strategy for Snapper stocks and seeks to address the issues of high commercial effort and protection of the spawning biomass.

**Recommendation 2:**

PIRSA to:

- a. Continue to improve estimates of harvest from the recreational sector; and
- b. Factor this information into stock assessments to determine appropriately precautionary ecologically sustainable harvest levels.

**Progress:**

The stock assessment reports include all available recreational catches.

Since the last assessment, PIRSA has completed the '2007/08 South Australian Recreational Fishing Survey' (Jones, 2009). The data from the recreational survey has been included into current stock status assessment for the MSF, specifically when apportioning allocations of catch between sectors. The next recreational fishing survey will be completed in 2012/13 and will provide an updated estimate of harvest from the recreational fishing sector.

The new management plan will include allocations to the commercial and recreational fishing sectors under PIRSA's Allocation Policy. These allocations are based on comparable catch data, such as commercial catch and effort logbooks and the recreational fishing survey.

PIRSA is also reviewing the format of stock assessment and stock status reports to better report on the allocations between sectors.

PIRSA will continue to collect information on recreational fishing within South Australia. PIRSA has committed, at a minimum, to undertake recreational fishing surveys every 5 years.

**Recommendation 3:**

For species that are overfished, PIRSA to continue to develop and implement recovery strategies to rebuild stocks to ecologically viable levels within a specific time period appropriate to the biology of the stock.

**Progress:**

PIRSA has strategies in place for the following species:

- Southern Garfish – PIRSA is currently reviewing management arrangements for Southern Garfish as the species is currently overfished. This review will lead to the implementation of management arrangements as part of a recovery strategy to bring Garfish back to a sustainable level of fishing.
- King George Whiting (KGW) – The status of KGW has improved and is now no longer considered to be overfished.

**Recommendation 4:**

PIRSA to implement priority research and monitoring including those priorities identified in the Strategic Research and Monitoring Plan for the MSF.

**Progress:**

PIRSA will continue to implement the current research plan for the MSF. PIRSA meets with the Marine Fishers Association (MFA) every year to prioritise research activities for the fishery. PIRSA has a focus on prioritising projects to provide detailed information on key species. The new management

plan to be completed in 2012 will set research and monitoring objectives for the MSF and continue to prioritise key species.

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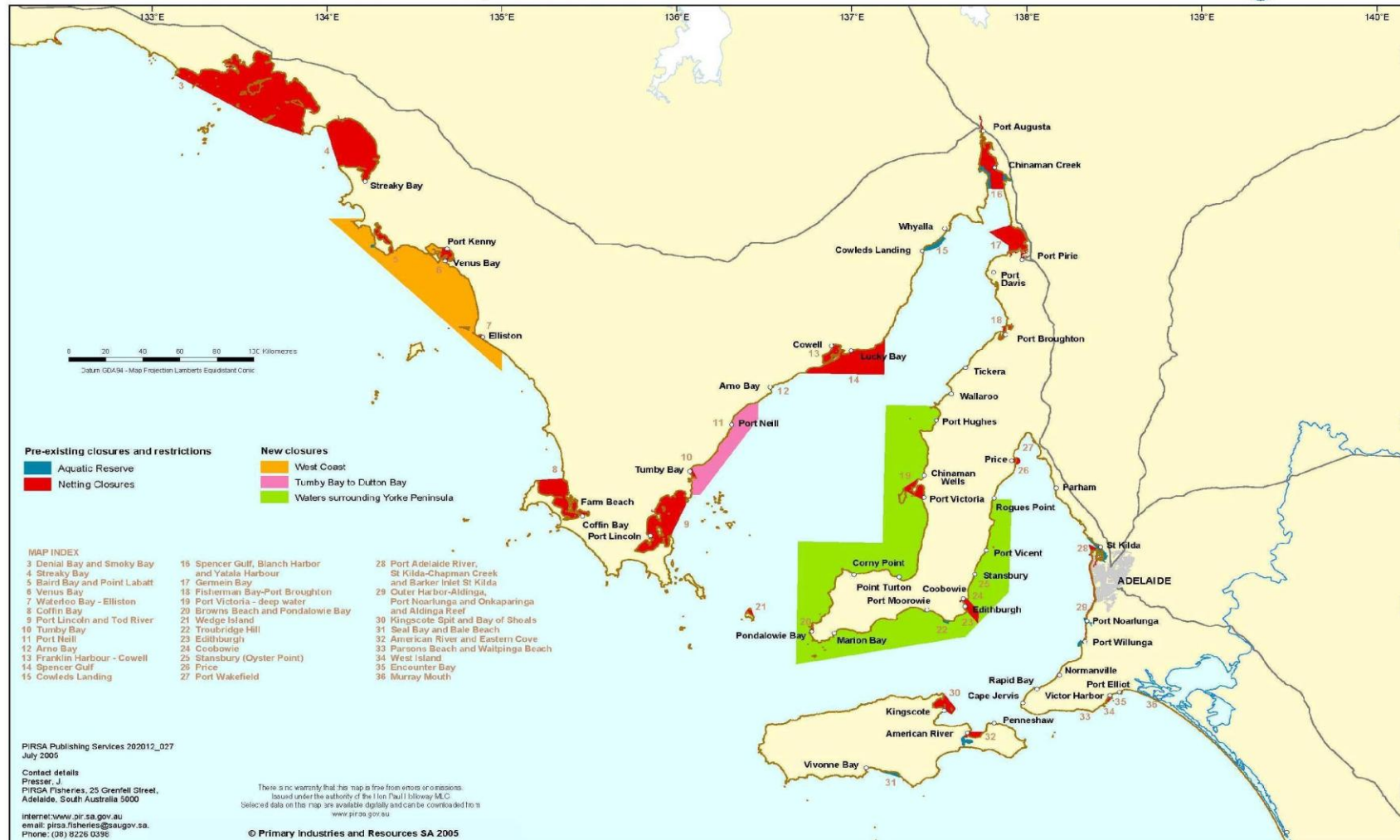
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# Attachment 1: Current netting closures and restrictions in South Australian MSF

## NETTING CLOSURES AND CURRENT RESTRICTIONS, SOUTH AUSTRALIA

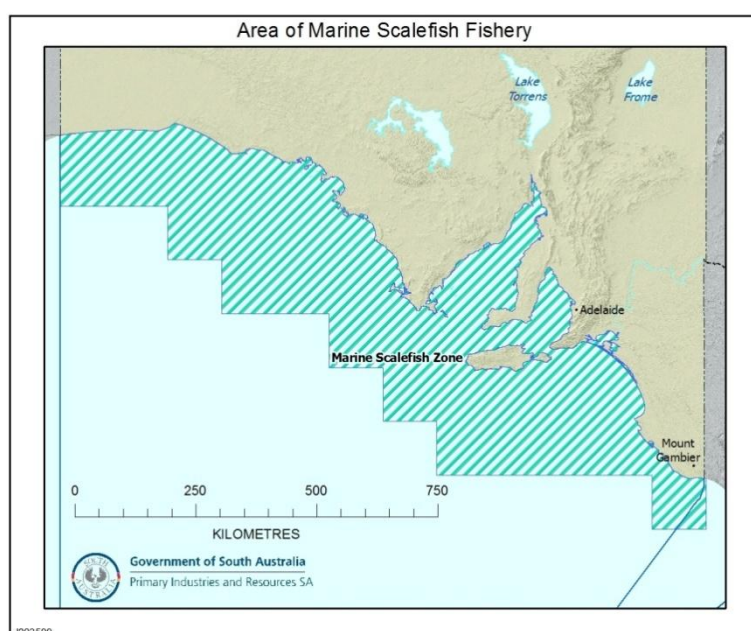


## Attachment 2: Fishers with access to MSF/ licence numbers and access

### MSF licences and restricted MSF licences

Class A licences, now known as Marine Scalefish Fishery (MSF) licences, make up the majority of the marine scalefish licence holders. By definition, these licences were issued to a person who satisfied the Director of Fisheries in the 1970's that they intended to take fish for sale as their principal business. The principal business was defined as the activity which provided the greatest share of their total income. Class B licences, now known as restricted MSF licences, were issued to a person who satisfied the Director of Fisheries that they intended to take fish as a seasonal or part-time business. Restricted MSF licences have less gear endorsements, very limited transferability (by amalgamation only, no family only transfers), and reduced number of agents to assist in fishing.

### Map 1: Area of Marine Scalefish Fishery



### MSF Licence numbers over time

The MSF has evolved over time with licence numbers changing over time. When licensing was introduced in 1904, 479 people applied for and received licences. At this time there was no limited entry and by the 1930's 1463 licences were issued.

Since the peak in the 1930's a number of management measures were introduced to reduce licence numbers and control effort in the fishery. A freeze on the issue of new licences in the MSF was introduced in 1979, thereby establishing it as a limited entry fishery. See Attachment 2, for other management changes over time that have impacted on licence numbers.

In 1994 the amalgamation scheme for the fishery was introduced. At the commencement of the scheme there were 526 MSF licences and 99 restricted MSF Licences. Since then licence numbers have been slowly reducing, see Table 1.

At present (May 2011) the licence numbers in the fishery are:

- 330 MSF licences;
  - 61 net licences, of which 24 are full licences through amalgamation and 37 remain unamalgamated;
  - 269 line licences, of which 149 are full licences through amalgamation and 120 remain unamalgamated; and
- 12 restricted MSF licences.

**Table 1: MSF Licence Holders by Financial Year from 1991/92 to 2007/08 (numbers are from 1 July)**

Year	Marine Scale	Restricted
1991/92	527	124
1992/93	527	112
1993/94	526	99
1994/95	504	93
1995/96	477	58
1996/97	461	52
1997/98	441	51
1998/99	421	43
1999/00	412	38
2000/01	395	33
2001/02	384	32
2002/03	383	32
2003/04	377	26
2004/05	351	17
2005/06	346	15
2006/07	344	13
2007/08	341	13
2008/09	340	12
2009/10	337	12
2010/11	334	12

Note that under the commercial net buyback scheme in 2005, 24 net licences were removed.

### **Lakes and Coorong fishers access to marine scalefish species**

Currently, there are 36 Lakes and Coorong licence holders who have restricted access to some of the same fish species as MSF licence holders. These fishers operate in coastal waters between the seaward extension of the Goolwa Beach Road to the jetty at Kingston, including the Goolwa channel, out to three nautical miles from the low water mark. Lakes and Coorong Fishery licences also operate under owner operator provisions apart from 28 relief days where a master other than the licence holder may operate the licence.

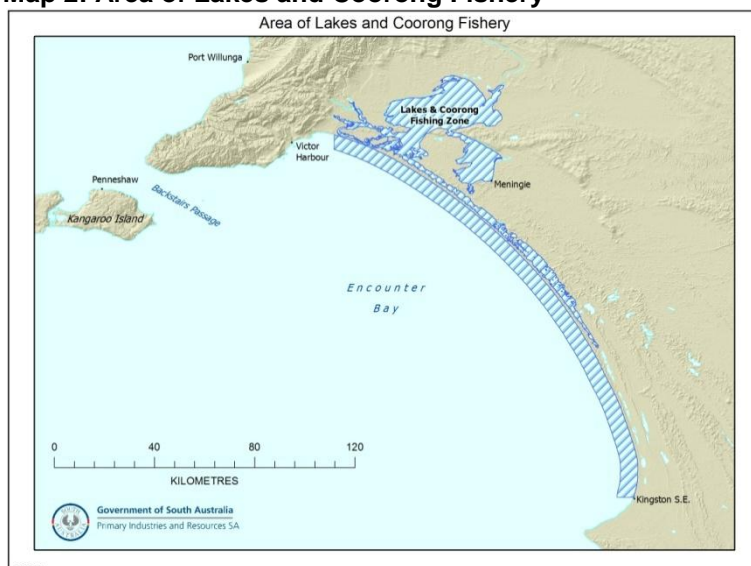
The species which are targeted by Lakes and Coorong fishers in coastal waters are Mulloway [*Argyrosomus hololepidus*], Australian Salmon [*Arripis truttacea*], Black

Bream [*Acanthopagrus butcheri*], Yellow-eye Mullet [*Aldrichetta forsteri*], Greenback Flounder [*Rhombosolea tapirina*] and Goolwa Cockles [Suborder Teledonta].

Lakes and Coorong licence holders are permitted to target other species which are listed in Schedule 1 of their permitted species list. However many of these species which are found in coastal waters are not targeted for a number of reasons. This includes not having the appropriate fishing gear endorsed on their licence or concentrating effort on specific estuarine species of fish for which they have specialised their fishing operation.

Although the majority of licence holders concentrate their effort in the Lakes, commercial fishers can operate in the coast waters within the fishery boundary. This is dependent on the abundance of a particular target species at any given time. Bottom set monofilament gillnets are used predominantly by commercial fishers targeting Mulloway and Yellow-eye Mullet in the Coorong. Beach seine nets are used on occasions during summer months when freshwater discharge is minimal. The main gear used commercially for Mulloway in the surf zone is the swinger net which is a fishing device unique to the Lakes and Coorong licence holders. Cockle nets and cockle rakes are used to take Goolwa pipis from coastal waters.

### Map 2: Area of Lakes and Coorong Fishery



### **Rock Lobster fishers access to marine scalefish species**

Most licence holders in the northern zone and southern zone rock lobster fisheries have some level of access to the MSF. Rock Lobster fishers were previously MSF licence holders with an endorsement for Rock Lobster. A separate Rock Lobster fishery was established and access to MSF species continued under these new arrangement.

Northern zone fishers main target and by-catch species over the past ten years are ocean leatherjacket, Australian salmon, blue morwong, Snapper, parrot fish and various shark species. Southern zone fishers main Marine Scalefish species consist of Octopus, Southern Rock Cod, Australian Salmon, Yellow-eye Mullet, Conger Eel and mixed shark species.

The Australian Salmon and Yellow-eye Mullet are taken for bait, whilst other species are taken as by-catch. Australian Salmon is controlled by a quota regime which

allows a maximum catch of 20 tonnes for a Rock Lobster licence holder with net endorsement.

Rock Lobster fishers are restricted in their use of gear to take marine scalefish depending what gear is endorsed on the licence, the season and whether pots are being used or not. A summary of the arrangements are provided below in Table 2.

In addition Rock Lobster licence holders may choose the level of access. Once the lower option is selected as licence may not move back up (i.e. B is chosen, then at a latter stage the licence holder can't go back to C).

There are 3 levels of access in the Rock Lobster fishery for Marine Scalefish species:

- A - Take for trade and business Rock Lobster, Octopus and Giant Crab  
 - Incidental bycatch in the rock lobster pot of permitted species (MSF species) for bait purposes only  
 - All devices except Rock Lobster pots are removed from the licence when selecting this option, and only Rock Lobster pots are allowed onboard the vessel
- B - Take for trade and business Rock Lobster, Octopus and Giant Crab  
 - Take of permitted species (MSF Species) for bait purposes only  
 - Removal of all gear other than Rock Lobster pots and bait nets
- C - Take for trade and business Rock Lobster, Octopus and Giant Crab  
 - Take of permitted species (MSF Species) for trade and business  
 - Permitted to use the devices endorsed on the licence

The number of licences at present (May 2011) with marine scalefish access is:

- 180 Southern Zone Rock Lobster Fishery (Option A - 18, Option B - 10, Option C - 152)
- 68 Northern Zone Rock Lobster Fishery (NZRL Option A - 1, Option B - 2, Option C - 65)

**Table 2: Rock Lobster access for those with Option C**

<b>Fishery</b>	<b>During the RL season</b>	<b>Outside the RL Season</b>
<b>NZRL</b>	<ul style="list-style-type: none"> <li>▪ Subject to trip limits and quota restrictions, species listed in Schedule 1 of the <i>Fisheries Management (Rock Lobster Fisheries) Regulations 2006</i> may be taken for the purposes of trade or business pursuant to the licence.</li> <li>▪ While using rock lobster pots a licensed person may not engage in any fishing activity within the waters of Spencer Gulf or Gulf St Vincent.</li> <li>▪ Able to fish with endorsed gear (the combination of which mirrors that of what can be used or have on board by licensed Marine Scalefish fishers under Licence Condition 4124).</li> <li>▪ No requirement to have owner operator (There are not restrictions on the number of days a licence holder, company director or registered master can fish for Marine Scalefish species).</li> </ul>	<ul style="list-style-type: none"> <li>▪ No restrictions on the number of days a licence holder or company director can fish for Marine Scalefish species.</li> <li>▪ A collective total of 28 Relief Days may be fished by a Registered Master/s on the licence.</li> <li>▪ Able to fish with all gear (the combination of which mirrors that of what can be used or have on board by licensed Marine Scalefish fishers under Licence Condition 4124).</li> </ul>
<b>SZRL</b>	<ul style="list-style-type: none"> <li>▪ Subject to trip limits and quota</li> </ul>	<ul style="list-style-type: none"> <li>▪ No requirement to have owner</li> </ul>

	<p>restrictions, species listed in Schedule 1 of the <i>Fisheries Management (Rock Lobster Fisheries) Regulations 2006</i> may be taken for the purposes of trade or business pursuant to the licence.</p> <ul style="list-style-type: none"> <li>▪ No requirement to have owner operator (There are not restrictions on the number of days a licence holder, company director or registered master can fish for Marine Scalefish species).</li> <li>▪ Able to fish with all gear (the combination of which mirrors that of what can be used or have on board by licensed Marine Scalefish fishers under LC 4124).</li> </ul>	<p>operator (There are not restrictions on the number of days a licence holder, company director or registered master can fish for Marine Scalefish species).</p> <ul style="list-style-type: none"> <li>▪ Able to fish with all gear (the combination of which mirrors that of what can be used or have on board by licensed Marine Scalefish fishers under LC 4124).</li> </ul>
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Rock lobster licence holders contribute to the costs of research, management and compliance programs in the MSF. A cost recovery fee is charged depending on the level of access (A,B or C) and those fishers with net endorsements are required to also pay a net fee.

**Map 3: Area of Rock Lobster Fishery**

