



Australian Government

Australian Fisheries Management Authority



# Post Implementation Review



## Managing interactions with Australian Sea Lions in the Gillnet Hook and Trap Sector of the Southern and Eastern Scalefish and Shark Fishery

 Southern and Eastern Scalefish and Shark Fishery

 April 2014

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## Purpose

This document is a post implementation review which outlines the reasons for the implementation of the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011* (ASL Temporary Order). It considers the intention of the control, the impact the control has had and the effectiveness of the control. A draft Regulatory Impact Statement (RIS) was submitted to the Office of Best Practice Regulation on 21 April 2011 prior to the implementation of the regulation. However, due to the urgent requirement of the regulation, adequate consultation was unable to be completed before the action was taken. The RIS was deemed to be inadequate by the Office of Best Practice Regulation as required under the then Government's Regulatory Impact Analysis requirements.

## The problem

Commercial gillnet fishing was identified as a significant cause for a lack of recovery in populations of threatened Australian Sea Lions (ASL) in South Australia based on research published in 2010 by the South Australia Research and Development Institute (SARDI). It was calculated that the gillnet sector of the Commonwealth managed Southern and Eastern Scalefish and Shark Fishery (SESSF) accounted for the vast majority of ASL deaths and interaction rates recorded during the study may have been high enough to cause some ASL colonies to become extinct in the long term. In response, the Australian Fisheries Management Authority (AFMA) promptly developed a management strategy designed to minimise interactions between ASL and gillnets. The ASL Management Strategy (the Strategy) was agreed to in 2010 and includes closures around known ASL colonies and further closures that come into place if a specified number of ASL mortalities occur.

ASL are listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The ASL Temporary Order was implemented in order for AFMA to meet its obligations under the *Fisheries Management Act 1991* (FM Act) and the EPBC Act relating to interaction between Gillnet Hook and Trap (GHAT) operators and ASL. Meeting these obligations ensures continued environmental accreditation of the *Southern and Eastern Scalefish and Shark Fishery Management Plan 2003* (SESSF Management Plan) which allows concession holders the continued right to export fish taken in the fishery. Consequences that were likely to eventuate if closures were not implemented include:

- increased ASL deaths
- significant public criticism of AFMA and the Australian Government
- threat of legal challenge to AFMA for not following its legislative objectives
- the possible loss of environmental accreditation of the SESSF Management Plan which would result in all SESSF concession holders losing the right to export fish taken in the fishery. The SESSF Management Plan was accredited by the Minister for Sustainability, Environment, Water, Population and Communities under Part 13 of the EPBC Act. The EPBC Act (Section 152, Division 2) provides that further assessment of the fishery must be made if the impact of actions in the fishery is significantly greater than assessed under an earlier agreement. Given the previously high level of

ASL interactions in the GHAT, further assessment of the fishery was likely unless AFMA took action to minimise interactions with ASL. The outcomes and subsequent approvals from a new assessment of the fishery were uncertain and may not have allowed, or significantly restricted, fishing, if appropriate ASL management measures were not in place.

## **Background**

Closures under the Strategy were first implemented by AFMA through the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011* (ASL Temporary Order) registered on 1 May 2011. The ASL Temporary Order closed areas of the SESSF to fishing by gillnets for a period of 6 months due to these areas being at high risk of potential interactions with ASL.

The closures contained within the ASL Temporary Order were continued in October 2011 under the *Southern and Eastern Scalefish and Shark Fishery Closure Direction No. 2 2011* (ASL Closure Direction). The ASL Closure Direction expired on 30 April 2013, and was replaced by a new two year closure direction maintaining the protection of ASL colonies. AFMA submitted Regulation Impact Statements for both of the subsequent legislative instruments which were compliant with best practice regulation standards.

### *Australian Sea Lion interactions*

Fishers have reported very few interactions with ASL throughout the history of the fishery. However, given the depleted state of the ASL populations as a result of historical sealing operations and uncertainty about the rate of mortality in various fisheries including the Commonwealth managed gillnet operations, AFMA and industry supported a study by SARDI assessing methods for mitigating ASL bycatch in the rock lobster and gillnet fisheries in South Australia.

In April 2010 SARDI released a report titled *Mitigating Seal Interactions in the Southern Rock Lobster Fishery and the Gillnet Sector SESSF in South Australia* (the SARDI report). The SARDI report predicted bycatch mortality was around 374 sea lions per breeding cycle (17.5 months) (272-506  $\pm$ 95% confidence level), which may be enough to cause some ASL colonies to become extinct in the long term.

The SARDI report observed 12 ASL mortalities over a period of 146 sea days, equating to 2.4% of effort for the entire fishery for a 24 month period. This indicated a higher rate of interaction than had previously been reported by industry. Commercial gillnet fishing was identified as a significant cause for a lack of recovery in populations of threatened ASL in South Australia. It was calculated that Commonwealth managed SESSF gillnet sector accounted for the vast majority of ASL deaths.

### *Protection of Australian Sea Lions-chronology of management responses*

In response to the identified risks to ASL from commercial gillnetting, AFMA introduced significant measures to protect populations of ASL. These were:

- the Australian Sea Lion Management Strategy 2010 developed in response to the SARDI report released in April 2010

- 1 May 2011: the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011* (ASL Temporary Order). The ASL Temporary Order was in force until 1 November 2011 and provided for:
  - the extension of the areas closed to gillnet fishing around 31 ASL closures. This brought the total area of closures around 48 ASL colonies off South Australia to 18,500 square kilometres
  - affected gillnet operators to use hooks in the areas closed to gillnets
  - 100% monitoring for gillnet operations in the waters adjacent to South Australia, either by on board scientific observer or by EMS.
- 1 November 2011:
  - *Southern and Eastern Scalefish and Shark Fishery (Closures) Direction No.2 2011* extended closures contained in the ASL Temporary order for a period of 18 months to 30 April 2013
  - *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011 No.3* (Second Sea Lion Temporary Order) commenced. This order continued the allowance for affected gillnet operators to use hook methods in gillnet closures
  - an increase in the observer coverage for gillnet fishing across the GHAT to 10% and precautionary ASL bycatch levels to trigger temporary closures
- January 2012: revised management zones and lowered bycatch levels for ASL to trigger closures of those management zones
- 30 April 2013: *Southern and Eastern Scalefish and Shark Fishery (Closures) Direction No.7 2013* was implemented to replace the *Southern and Eastern Scalefish and Shark Fishery (Closures) Direction No.2 2011* which expired. This closure direction also included two previously un-documented ASL colonies at Cap Island and Rocky South Island.

In 2012, three of the seven zones in the Australian Seal Lion Management Zone were closed for a period of 18 months following trigger levels of bycatch being reached. All three zones have since been re-opened.

## Objectives

The broad objectives of AFMA are to ensure the exploitation of fisheries resources is sustainable with regard to target and non-target species as well as the broader marine environment, and to maximise the net economic returns to the Australian community from the management of Australian fisheries.

AFMA is required to manage the impact of fishing on the marine environment. Objectives of the FM Act include:

- (AFMA must) ensure that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development (which include the exercise of the precautionary

principle), in particular the need to have regard to the impact of fishing on non-target species and the long term sustainability of the marine environment

- in meeting objectives of the Act, (AFMA must) ensure, as far as practicable, that measures adopted in pursuit of the objectives of the Act are not inconsistent with the preservation, conservation and protection of all species of whales.

AFMA is also subject to general obligations for interactions with protected species under the EPBC Act.

## Impact analysis

The closures made under the ASL Temporary Order and the further closures implemented since its expiry in October 2011 have had consequences for the commercial viability of gillnet operators in South Australia. Implementing these closures has increased management costs that are cost recovered from industry and also reduced the area available for fishers in South Australia to catch Gummy Sharks using gillnets.

The ASL Temporary Order closed 18,473 km<sup>2</sup> or 11% of the entire South Australian component of the fishery immediately around ASL colonies (Figure 1). This area remains closed through the current closure Direction and has prevented any further ASL mortalities occurring in that area.

The current closure Direction forms an integral part of the Strategy which includes other larger closures triggered when the number of ASL mortalities exceeds levels not considered sustainable for the survival of local colonies (Figure 2).

Due to the number of ASL mortalities being exceeded in early 2012 three of the seven management zones were closed to fishing for a period of 18 months. These closures resulted in 96,151 km<sup>2</sup> of the gillnet fishery being closed to gillnet fishing. These zones have all been open since August 2013 and only one ASL mortality has been recorded in the fishery since March 2012.

In addition to these closures to protect ASL, AFMA has also implemented a closure to protect dolphins in South Australia (shown in Figure 2). The combined impact of closures to protect ASL and dolphins has resulted in the total catch for the South Australian component of the fishery declining by 70% during 2012 when compared to the mean of the previous five years. For 2012 the gross value of production (GVP) for the entire SESSF gillnet fishery declined by 20% when compared to the mean of the previous five years.

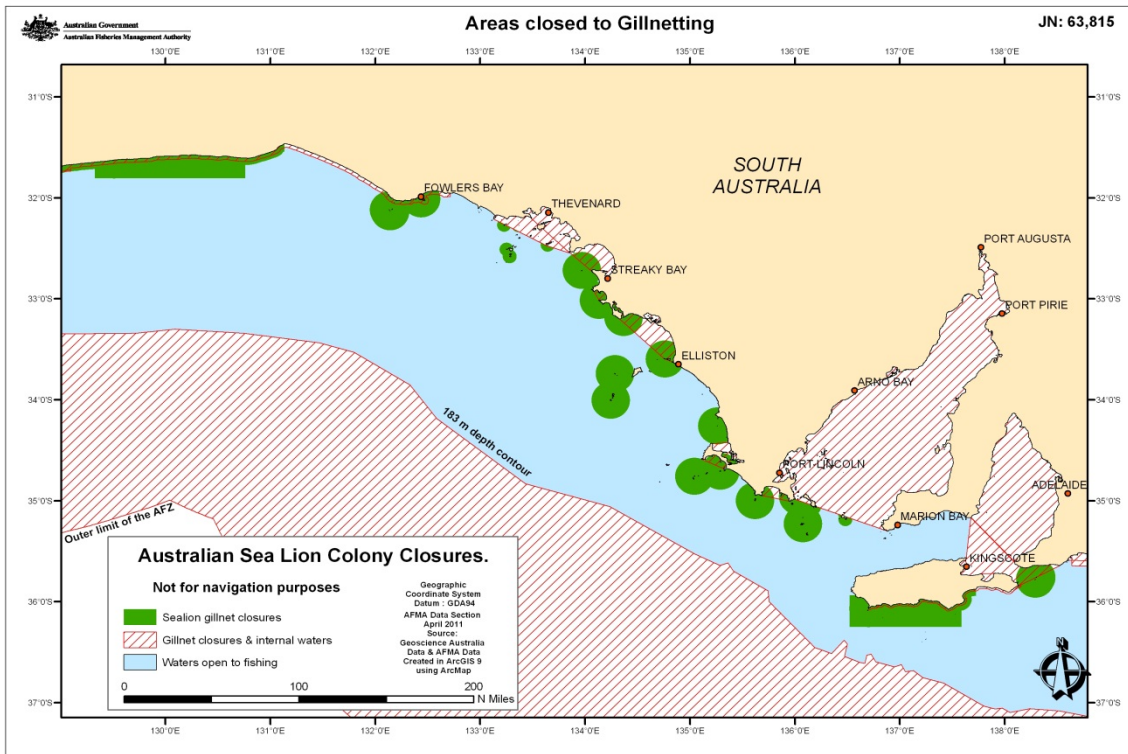


Figure 1: Map of areas closed to gillnet fishing under *SESSF Temporary Order No. 1 2011*.

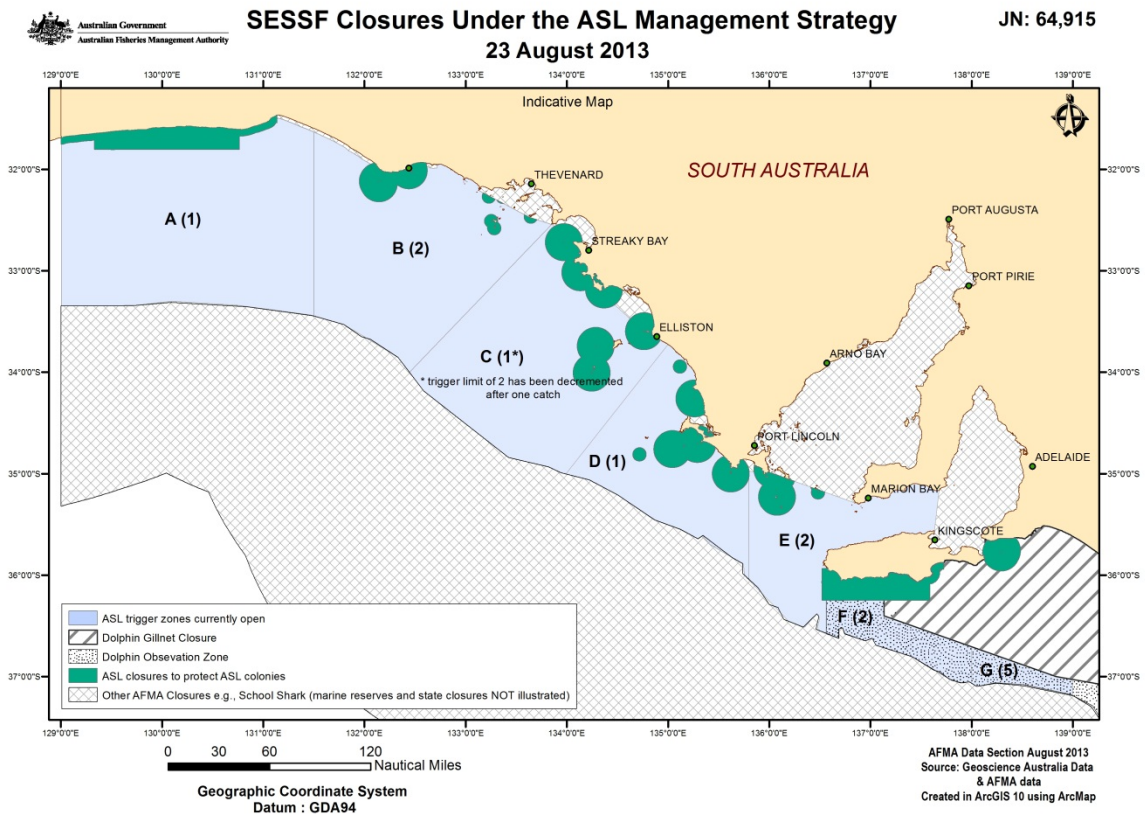


Figure 2: Map of areas closed to gillnet fishing under the current closure Direction and the larger trigger zones included in the Strategy.



## *Impact on Government*

A significant amount of time and resources has been dedicated to mitigating ASL interactions in Commonwealth managed Gillnet fisheries. This is reflected in levy costs paid by the fishing industry which increased during the 2011/12 fishing season to account for the increase in management costs associated with the issue of Closure Directions, Temporary Orders and the Strategy.

**Table 1:** Approximate cost of implementing the ASL Temporary Order and management arrangements.

<i>Description of Cost</i>	Cost
Communication of management arrangements to stakeholders	\$500
Government supplied Electronic monitoring systems	\$200,000
Future Directions industry working group	\$12,000
Registration of legislative instruments	\$3,000
Additional management costs (staff requirements) including preparation of regulation impacts statements	\$150,000
<b>Total</b>	<b>\$365,500</b>

## *Impacts on the Community and Business*

The costs outlined here relate to estimates of costs incurred during the period of the 6 month temporary order only and are not an estimate of the total cost impact arising for the implementation of the ASL strategy. Industry members affected by this closure have had the opportunity to comment on the cost impacts and the implementation of these management measures. AFMA has estimated these costs based on its experience and comments received from industry.

### **Compliance Costs**

Compliance costs are defined as the direct additional costs incurred by industry to comply with the ASL Temporary Order. Estimates of opportunity costs and loss of revenue are outlined separately below.

The only compliance cost identified for industry came from the requirement to update fishing practices to ensure that they did not fish inside the closures. These costs included the time to brief skippers and crew and the time to input the co-ordinates of the closure area into global positioning systems (GPS). These costs (shown in Table 2) are estimated based on a 1 hour briefing involving four people for each business (on average) and the equivalent of one hours work by the Master to input closure details to the boat GPS. The hourly rate (\$33.20) plus oncost multiplier (1.16) is assumed as being equivalent to the average hourly pay rate for

technicians and trade workers. It should be noted most Masters are paid in relation to catches taken on a fishing trip with hourly incomes rates being variable across the industry.

**Table 2:** Cost to businesses of complying with the ASL Temporary Order

<i>Businesses affected</i>		14
	Cost per business	Total cost for all businesses
<b>Start-up cost</b>	\$192.56	\$2695.84
<b>Ongoing compliance cost per year</b>	\$0.00	\$0.00

### **Opportunity Costs**

#### **Area and catch affected by the ASL Temporary Order**

Fishers affected by the ASL Temporary Order had the option to fish in other areas outside the closed areas. Despite this, it could be expected that there would have been opportunity costs for fishers who have been excluded from traditional fishing grounds and were required to fish in unfamiliar areas. These fishers would also incur additional costs related to having to travel greater distances to find fishing areas. Those affected would have therefore encountered a decrease in the efficiency of their fishing operations.

The area closed under the ASL Temporary Order accounts for approximately 11% of the area of the South Australian component of the fishery. Catch within the closure areas accounted for approximately 8% of the entire gillnet fishery for the five year period before the closures were introduced in 2010.

#### **Estimated value of catch affected by the ASL Temporary Order**

Based on economic reports from the Australian Bureau of Agricultural Resource Economics and Sciences (ABARES) the mean gross value of production (GVP) for the South Australian gillnet component of the GHAT is estimated at \$2.3 million per annum. This is the mean value of the four target species harvested from 2006 to 2011.

The mean GVP for the closure area was approximately \$1.5 million dollars per annum based on the mean value of the four target species harvested from 2006 to 2011. Therefore for the 6 month period the ASL Temporary Order was in effect, the total potential impact on value of catch for all operators affected was \$750,000. However, the actual impact varies between operators as they had the opportunity to fish elsewhere in the fishery or fish in the closure areas using the alternative hook based fishing method.

#### **Boat level impacts**

There are currently 79 fishing concessions which allow the use of gillnets in the GHAT. In recent years approximately 30 gillnet boats have operated in South Australian waters, 14 of which fished historically within the closure area of the ASL Temporary Order.

Of the 14 boats with a history of catch in the closure area nine continued operations in other areas of the fishery during the 2012-13 fishing season following the closure (Table 3). Catch for these boats decreased by 30% from historical averages. Nine boats have remained fishing in areas of the SESSF outside the closures, and three of these boats have switched to hook fishing methods. Five boats have ceased fishing in Commonwealth fishers since the closures were implemented but may have moved to other non-Commonwealth fisheries. Costs for moving fisheries operations would be variable as many GHAT fisheries hold State issued fishing concessions in addition to Commonwealth concessions. In addition, many GHAT fishers only utilise their concessions periodically. For example many fishers target State managed rock lobsters for the majority of the year and target Commonwealth managed shark species in the off season.

It should be noted that due to the target species not being sedentary, the effect of small closures in regards to catch and GVP figures is uncertain as target species may still be caught outside closure areas as species migrate seasonally and throughout their life history. In addition, the fishing effort of individual operators can vary seasonally with fishers targeting certain fishing grounds at known times of optimal catches. At present the loss of these preferred fishing grounds is difficult to assess and may cause more of a loss to some individual operators than others.

**Table 3:** Impacts on boats with a history of effort within the *SESSF Temporary Order No. 1 2011* closure areas.

	2007-2010 (mean)	2011	2012	% change 2011	% change 2012
Number of boats	14	13	9	-7%	-36%
Mean catch per boat (tonnes)	44	30	30	-30%	-31%
Total catch (tonnes)	578	396	270	-31%	-53%

While fishing in the closure areas has been restricted, the fishery is quota managed and it is possible for quota to be caught across the fishery, or caught using other fishing methods. The majority of boats with a history of effort within the closure areas have also historically fished areas outside of the closures and at times outside of South Australia. Quota owners are able to sell or lease out quota at any time. Some concession holders also have permits allowing the use of hooks and gillnets and are equipped for both methods, meaning that no additional costs were incurred to change fishing methods for those operators.

There were increased operating costs for concession holders who historically fished within the closures who shifted their fishing effort outside the zone. Due to a change in distance from port to fishing grounds, operators would have incurred increased costs in fuel to access fishing grounds outside the closed zones.

Part of the measures introduced with the ASL Temporary Order included provisions for gillnet operators affected by the closures to use hook fishing methods. These provisions have continued under new permit arrangements. Ten operators have used the new permit arrangements. Since implementation, catch from hook methods in South Australia has increased from a mean catch of 52 tonnes per year for the five years before the closures were introduced to 176.8 tonnes in 2012 (Table 4).

For boats switching from gillnet fishing methods to hooks, the cost can vary from \$50,000 to \$200,000 depending on gear configurations and individual boat requirements. Increased labour costs with additional crew members required to bait hooks was another issue faced by operators which had previously fished using gillnet methods. A Fisheries Research and Development Corporation research project investigating issues with the change to hook fishing methods from gillnets was published in April 2014.

**Table 4:** Shark hook effort (number of hooks set) and catch (tonnes) in South Australian waters from 2006 to 2012.

<i>Year</i>	<i>Hooks Set SA Only</i>	<i>Retained Catch SA Only</i>
2006	157,858	32.7
2007	226,135	45.3
2008	313,999	49.9
2009	484,290	82.8
2010	470,800	60.1
2011	551,580	89.4
2012	1,705,488	176.8

10 boats which had the highest reported fishing effort within the ASL management area were fitted with electronic monitoring systems (supplied by AFMA funding) since the ASL Temporary Order. These boats benefitted from not having to pay costs for observer coverage when fishing in the ASL monitoring zone under the ASL Temporary Order and ASL Closure Direction. There were no additional variable costs for boats supplied with electronic monitoring systems.

For boats without electronic monitoring systems the cost for mandatory independent observers would be approximately \$1400 per day. AFMA is not aware of any fishers who elected to fish without electronic monitoring systems.

Fishing effort has increased in areas of the fishery not subject to 100% observer coverage/monitoring requirements (such as the Bass Strait region). However, it is not clear whether this is a temporary or permanent shift.

**Ongoing impacts of the ASL Temporary Order, triggered closures under the ASL Management Strategy and the dolphin closures in South Australia**

Current data suggests that catch in the South Australian gillnet component of the GHAT has declined by approximately 80% since the introduction of the Strategy (Table 5). However, it should be noted that triggered broader zone ASL closures and closures to protect dolphins (which have resulted in over 70% of the fishing area in South Australia being closed) are likely to be the main cause of the reduction in catches due to these areas accounting for a much higher proportion of historical fishing effort. The percentage of uncaught Commonwealth Gummy Shark Total Allowable Catch (TAC) for the 2012-2013 season was 21%. This represents a 10% increase in uncaught TAC when compared to the mean of the 2010-2011 season (11%).

**Table 5:** Impacts on catch of Gummy shark in South Australia closure area and GHAT fishery from 2008-12.

	<b>2007-2010 (mean)</b>	<b>2011</b>	<b>2012</b>	<b>% Change 2011</b>	<b>% Change 2012</b>
<b>Catch in Closure Area (tonnes)</b>	113	9	0	-92%	-100%
<b>Catch Entire Fishery (tonnes)</b>	1430	1569	1326	+10%	-7%
<b>Catch SA Only (tonnes)</b>	498	332	100	-33%	-80%

AFMA has been working closely with industry associations in the GHAT and individuals affected by these closures to develop management arrangements that minimise the risk to marine mammals and allow and allow fishers to catch Gummy Shark.

### *Environmental outcomes*

The number of ASL mortalities in gillnets has substantially decreased since the implementation of the Strategy with one mortality reported since March 2012. Assessment of the recovery of ASL colonies has not been undertaken since 2010. It is expected, noting the long breeding cycle of ASL of 18 months, it would take a number of years to assess the success of the Strategy in aiding the recovery of ASL populations in South Australia.

Increased interactions with dolphins were reported in 2010 and 2011 which lead to a separate spatial closure in eastern South Australia. The increased reporting of dolphin interactions coincided with increased independent observer requirements and occurred in areas predominantly outside of ASL colonies.

### *Consultation*

Prior to the implementation of the ASL Temporary Order, AFMA had been working with stakeholders for over a year in the development of strategies to reduce the level of threatened species interactions in the GHAT fishery. This culminated in the development of the Strategy in June 2010.

In light of the information provided by the SARDI report and the perceived historical misreporting of ASL interactions by industry, AFMA believed that urgent action had to be taken to ensure that no long term damage was caused to the marine environment while additional information relating to threatened species interactions was gathered. This was consistent with the precautionary principle in the FM Act which states “*Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*”

Due to the need for urgent action, specific consultation prior to the implementation of the ASL Temporary Order regarding the closures contained within the regulation was not conducted with the fishing industry or interested non-governmental organisations. However, AFMA had established a working group to specifically discuss interactions with ASL which continues to meet regularly (see below). AFMA has also continued to consult with industry and interested persons on the issue since the implementation of the ASL Temporary Order as detailed below.

The Australian Marine Conservation Society started a media campaign regarding ASL deaths in gillnets during early 2011 (see Appendix A). The campaign included email petitions which were addressed to the Minister for the Department of Agriculture Fisheries and Forestry. A number of emails from concerned members of the public were sent to the Minister and AFMA staff. In addition a number of environmental non-government organisations expressed strong concerns for the sustainability of the fishery.

### **Marine Mammal Working Group**

The Australian Sea Lion Working Group was formed in 2010 to provide AFMA with specialist advice to assist fisheries managers in the development of the Strategy. The group initially met quarterly to discuss the performance of the fishery and the effectiveness of management measures implemented to protect ASL populations. The Australian Sea Lion Working Group has been renamed the Marine Mammal Working Group to include dolphins within its scope. The Marine Mammal Working Group meets at least annually to discuss marine mammal management in the GHAT fishery. The Marine Mammal Working Group consists of marine mammal scientists, biologists, fisheries scientists, fishing industry members, environmental non-governmental organisations, fisheries managers and state and Commonwealth government representatives.

### **Stakeholder comments**

Marine mammal scientists within the Australian Sea Lion Working Group strongly recommended the need for spatial closures and management measures prior to the fishing closures being implemented. Environmental non-government organisation members called for immediate action to prevent further ASL deaths.

Fishing industry representatives expressed concerns regarding the validity of recent research in regard to the number of estimated ASL mortalities, and expressed strong concerns that closures would negatively impact on the financial sustainability of the industry.

### **South East Management Advisory Committee**

AFMA Management is required to consult with stakeholders through Management Advisory Committees prior to making some management arrangements such as closure Directions. The South East Management Advisory Committee (SEMAC) advises in relation to the SESSF and includes representatives from industry, environmental non-governmental organisations, recreational fishing groups, state governments, scientists and fisheries managers. SEMAC is consulted on the implications of management changes from a fishery wide perspective and has provided extensive advice on the Strategy. SEMAC discussed the ASL Temporary Order at its meeting of 6-7 June 2011.

### **Stakeholder comments**

Different views on the impact of gillnet fishing on ASL and the need for the gillnet closures were presented by stakeholders at the SEMAC meeting on 6-7 June 2007. An industry participant invited to SEMAC noted the observed interaction rate with ASLs observed over the previous year (July 2010 – June 2011) was lower than predicted by the earlier scientific research (the SARDI report). This was based on the results of higher levels of independent monitoring implemented in 2010. The scientific participant invited to SEMAC noted that catch rates were lower but added they were not significantly different to the predicted rates due to the broad uncertainty that existed.

SEMAC noted that there were two interactions with Australian Sea Lions observed after independent monitoring was increased from July 2010 compared to the 12 interactions in the earlier study. However, SEMAC noted these datasets were collected over different time periods.

The shark industry member indicated the sector was under considerable hardship and questioned if the Government could identify if there was an acceptable level of mortality for ASLs. The invited scientific participant observed that under current policy the limit in some areas was one.

SEMAC members noted that AFMA's expectation was there would be data uncertainty for some time to come and that AFMA would need to continue the measures enacted under the ASL Temporary Order using other instruments. SEMAC noted there was a variety of ways this could be achieved and welcomed AFMA's suggestion that members provide out of session comments on how these measures might be administered (Directions, conditions on SFRs, permit conditions).

### **Shark Resource Assessment Group**

AFMA has consulted extensively with industry, environment groups and scientists on the issue of ASL interactions, particularly when drafting the Strategy and after the implementation of the ASL Temporary Order. Ongoing measures to protect ASLs and other protected species have been discussed at length with the Shark Resource Assessment Group (SharkRAG). SharkRAG comprises fisheries scientists, industry members and environmental representatives.

### **Stakeholder comments**

Fishing industry members raised concerns regarding the SARDI Report findings. They were concerned that predicted interactions were extrapolated from a small number of observations and the conclusion of the report was overly precautionary.

### **GHAT Future Directions Industry Working Group**

AFMA formed the Future Directions Working Group to consult with industry on alternative management arrangements to prevent interactions with threatened species and provide fishers with more economic certainty. The Future Directions Working Group, which consists of six industry representatives, has met three times between November 2012 and April 2013. Fishers involved in the Future Directions Working Group include those directly affected by the closures under the ASL Temporary Order. Preliminary recommendations from the Future Directions Working Group have identified the key issues facing industry. These fall into the following main categories:

- access arrangements: new permit types to give fishers to ability to use other fishing methods
- input controls: investigation of the requirement of restrictions on fishing gear and areas;
- at sea monitoring: use of camera systems to monitor fishing operation in a cost effective manner

- individual accountability: investigating measures to implement management measures to reduce protected species interactions on individual fishers rather than the entire fishing sector
- managing impacts on Dolphins and threatened species: research and management of mitigation devices and strategies to reduce protected species interactions.

AFMA consulted extensively with individual fishers regarding ASL closures during consultation visits to fishing ports as part of the Future Directions project during November 2013. Fishers affected by closures noted financial difficulties caused by spatial closures but also noted improved catch rates and financial returns for hook fishing methods allowed as an alternative fishing method since the implantation of the Temporary Order in 2011.

### **Stakeholder comments**

Fishers affected by closures do not support continued fishery wide closures and prefer a move to adopting management measures based on individual responsibility. Under this approach fishers are accountable for their own actions to reduce bycatch and only those who have continued interactions would be excluded from fishing.

### **Port visits and phone conversations with affected fishers**

AFMA sought fisher comments at a number of port visits and phone conversations before and after implementation of the ASL closures in 2011. All fishers were against fishery wide closures and considered closures overly precautionary.

## **Review of the control**

### *Compliance with closures*

No compliance breaches occurred during the six month period the ASL Temporary Order was in effect.

### *Level of interactions*

Since the implementation of the Strategy on 30 June 2010 and subsequent management arrangements and regulations including the ASL Temporary Order three sea lion mortalities were observed with 100% monitoring of gillnet operations.

While the rate of observed and reported interactions with ASL was markedly lower than that observed by the SARDI Report and no triggers were reached during the period of the ASL Temporary Order, observations showed that interactions with threatened species were higher than previously reported by fishers. However, while interactions had not been at the levels predicted, reported interactions remained within the lower part of the range predicted in the SARDI Report.

The rate of interactions reported in logbooks was considerably lower than expected given the rate of interactions observed by independent monitoring. This gave rise to concern about systematic under reporting and the quality of the data available to AFMA on which it based its fishery management measures.



## *External reviews of the ASL Management Strategy*

Scientific advice suggested that the adaptive management component of the Strategy needed to be reviewed in order to be effective in reducing and monitoring ASL interactions.

There have been two external reviews of AFMA's Strategy. Professor Daniel Costa reviewed the Strategy for the Department of the Environment and the findings were published in March 2011. The review suggested that, given the lack of robust data on ASL demographics, sub-population structure and underlying bycatch rates of the fishery, the only way to ensure all ASL sub-populations recover over their entire range was to reduce bycatch rates to zero (or very close to zero).

The review stated that the simplest way to achieve this was to implement gillnet fishing closures that encompassed the entire foraging depth of ASL (~120m) effectively reducing ASL bycatch to zero. This would exclude fishing operations from the vast majority of area available in South Australia.

The review also:

- criticised the lack of monitoring for a demographic response in the ASL population following the implementation of AFMA's Strategy
- suggested the areas closed to gillnetting encompassed too small an area of the ASL foraging range therefore they were unlikely to lead to significant reductions in ASL bycatch or ensure recovery in all sub-populations
- suggested management be at colony aggregated scales, i.e. the seven large management zones, exposes individual sub-populations to extinction risk
- suggested that the use of a 3% ASL population growth rate per breeding cycle by the AFMA Strategy was overly optimistic and, given the biology of ASL, should be lower to reflect a more likely real population growth rate
- criticised the lack of a calculated allowable potential biology removal rate, i.e. an acceptable level of mortality, due to a lack of demographic information.

A further SARDI report to the Department of the Environment was released in late 2010. The objective of the report '*Genetic population structure and bycatch: assessment of management measures for reducing the bycatch of Australian sea lions in the demersal gillnet fishery off South Australia*' was to provide the Department of the Environment with an update on recent unpublished ASL genetic population structure information. The report also examined the ASL bycatch trigger limits of the AFMA Strategy, specifically whether the trigger levels were set at appropriate levels.

The report found:

- from the SA colonies examined, strong genetic partitioning was apparent with most colonies in the sample characterised as individual populations
- there was support for genetic clustering between three groups of SA colonies
- the reductions in ASL bycatch likely due to the AFMA strategy would be modest, with one fifth of populations still in decline
- the current AFMA trigger limits were set at too high a level to be triggered based on the expected observed bycatch level.

## Conclusion

The RIS submitted on 21 April 2011 was found to be non-compliant with best practice regulation requirements by the Office of Best Practice Regulation due to insufficient consultation with stakeholders before implementing the ASL Temporary Order.

AFMA believes that in 2011 there was an urgent need to prohibit fishing by gillnets in areas surrounding ASL colonies off South Australia to avoid continued mortalities of threatened species. ASLs are listed as a threatened species (vulnerable) under the EPBC Act. Implementing closures around ASL colonies was crucial to protect ASLs from the risk of mortality posed by commercial gillnet fishing and necessary to prevent the extirpation of ASL colonies recognised as being at high risk. The closures implemented under the ASL Temporary Order were a key management measure outlined in the Strategy to protect ASLs and they remain a key measure today.

The SARDI report released in April 2010 observed 12 ASL mortalities over a period of 146 sea days, equating to 2.4% of effort for the entire fishery for a 24 month period. This indicated that there were more ASL mortalities occurring than had previously been reported by fishers. Following the introduction of 100% independent observer coverage under arrangements in the ASL Temporary Order, three ASL mortalities were reported. Consequences that were likely to eventuate if closures were not implemented include:

- increased ASL deaths
- significant public criticism of AFMA and the Australian Government
- threat of legal challenge to AFMA for not following its legislative objectives
- the possible loss of environmental accreditation of the SESSF Management Plan which would result in all SESSF concession holders losing the right to export fish taken in the fishery. The SESSF Management Plan was accredited by the then Minister for Sustainability, Environment, Water, Population and Communities under Part 13 of the EPBC Act. The EPBC Act (Section 152, Division 2) provides that further assessment of the fishery must be made if the impact of actions in the fishery is significantly greater than assessed under an earlier agreement. Given the previously high level of ASL interactions in the GHAT, further assessment of the fishery was likely unless AFMA took action to minimise interactions with ASL. The outcomes and subsequent approvals from a new assessment of the fishery were uncertain and may not have allowed, or significantly restricted, fishing, if appropriate ASL management measures were not in place.

The ASL Temporary Order had impacts on both the fishing industry and the Government. Significant costs were incurred by the Government in dealing with mitigating interactions with ASL by gillnets. The registration of legislative instruments, and the development of management and communication strategies associated with the ASL Temporary Order were reflected in increased levy costs for industry.

The closures contained within the ASL Temporary Order affected the commercial viability of gillnet operators in South Australia through:

- loss of access to historical fishing grounds by the gillnet method
- loss of catch of the four main target species in the fishery due to closures

- additional costs associated with fishing in new areas or by different methods
- potential increased monitoring costs for some operators
- small increases in effort in other parts of the fishery with four boats relocating to other parts of the fishery following closures.

In a bid to minimise the impact to South Australian gillnet operators AFMA has allowed gillnet operators that have fished extensively in the affected areas the option of using hooks in the closure areas and waters adjacent to the closure areas under the ASL Management strategy. Hook catches of Gummy Shark have steadily increased in South Australia since the ASL Temporary Order and gillnet operators affected by closures have seen improved catch rates using this method as more experience has been gained.

Since the implementation of the ASL Temporary Order, AFMA has undertaken a number of measures to improve stakeholder consultation regarding ASL closures including the GHAT Future Directions Working Group and the establishment and continued meeting of the Marine Mammal Working Group.

AFMA believes the measures taken in 2011 were appropriate and continue to be necessary in order to ensure it met the Legislative objectives under the FM Act. Additionally, AFMA complied with best practice regulation requirements when making regulatory measures which continued the closures in October 2011 and April 2013. As a result, closures originally implemented in 2011 will remain in place until at least April 2015.

**Appendix A:** Australian Marine Conservation Society campaign against gillnet fishing in southern Australia.



[Tell A Friend](#) 

Dear Peter

**Is it acceptable to allow 104 Australian Sea Lions to be captured and drowned in fishing nets? The Australian Fisheries Management Authority seems to think so...**

**TAKE ACTION**

In the waters off our southern coastline, playful and acrobatic Australian sea lions hunt for fish and squid. Spinning and diving and darting after prey, numbers of these beautiful animals are still recovering following historical hunting for their fur. Australian sea lions are rare and threatened, and found nowhere else in the world, but if you thought their days were now free from the threat of extinction, you'd be wrong.



**Gillnets set to catch gummy sharks hang in the ocean to satisfy Australia's love of flake and chips. But these walls of death catch more than sharks. The nets snag sharks by tangling their fins in the mesh but also trap the flippers of our beloved Australian sea lions.**

**TAKE ACTION**

Australian sea lion populations are incredibly sensitive to even a few deaths a year. The females only breed every 18 months and stay close to the area they were born, resulting in a scattering of small populations along the southern Australian coast. These little pockets of Australian sea lions are vulnerable, so much so that the death of even a single female has a large impact on that colony's survival.

