

# Regulation Impact Statement

Managing interactions with dolphins in the Gillnet  
Hook and Trap sector of the Southern and Eastern  
Scalefish and Shark Fishery

 September 2012

## Executive summary

Reporting of interactions with dolphins while gillnet fishing in South Australian waters of the Gillnet Hook and Trap (GHAT) sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF) rose sharply in the 12 months leading up to September 2011. 52 dolphin interactions were reported between September 2010 and September 2011, 50 of those were mortalities. The reports indicated interactions with ‘dolphins’ but the exact species of dolphins were unknown. The interactions mainly occurred south of the Coorong in Commonwealth waters off South Australia in the area from Kangaroo Island to Cape Jaffa.

In response to this, the Australian Fisheries Management Authority (AFMA) registered the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011 No. 2* (the First Dolphin Temporary Order) on 22 September 2011. The Order closed an area of the GHAT Sector of the fishery off South Australia to gillnetting, established a zone adjacent to the closed area with mandatory monitoring while fishing with gillnets, and allowed for the use of hooks by affected gillnet concession holders in both the closed area and monitoring zone.

AFMA extended the regulatory measurements contained within the First Dolphin Temporary Order for a period of six months upon expiry of the Order. The Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2012 No. 1 (Second Dolphin Temporary Order) was registered on 22 March 2012 and expires on 23 September 2012.

The immediate and continued response was consistent with the objectives of the *Fisheries Management Act 1991* (FM Act), which AFMA is required to pursue. These objectives specifically require measures to be taken, as far as is practicable, to protect all species of whales, which is defined to include dolphins.

AFMA considers the threat to Dolphins in the area closed to gillnetting under the Second Dolphin Temporary Order is still very high. Additional dolphin mortalities across the rest of the fishery, including in the Dolphin Observation Zone further suggest that dolphin interactions would re-occur should the currently closed area be re-opened.

This Regulation Impact Statement sets out an assessment of options to address accidental dolphin mortality caused by gillnet fishing. The three objectives AFMA wishes to achieve in response to the problem include: continuing to reduce dolphin interactions, ensuring a better understanding of protected species interactions and minimising the impact of measures on affected fishing businesses.

Possible options available to AFMA in response to the problem are to do nothing, self-regulation, co-regulation or a regulatory response including a closure Direction.

Only the latter is considered to be an appropriate and proportionate response to the high number of interactions and very high (~95%) mortality rate of dolphins. The first option of doing nothing, while providing a maximum potential benefit of approximately \$2.5 million per annum by allowing operators back into closed areas, is considered to be inconsistent with the

legislation and may put at risk the operation of the fishery. The self/co-regulation options represent too slow a response, noting industry has been aware of the interactions for some time and has not as yet implemented a credible response. Divisions in the industry increase the risk of these options not achieving the objectives.

The preferred option of regulatory measures would be implemented for a period of 12 months and continue the:

- closure to gillnet fishing in the area of the GHAT with a high risk of dolphin interaction through the registration of a closure Direction;
- requirement for 100 per cent monitoring of gillnet operations, either by observer coverage or electronic monitoring systems (EMS) in an area adjacent to the closure; and
- ability for affected operators to use manual hook methods instead of gillnets in closed areas.

This recommendation gives rise to costs, particularly to fishing businesses that previously operated in the gillnet closure. Based on historical catch records from the closure area the maximum immediate cost to businesses is approximately \$2.5 million per annum assuming operators do not fish elsewhere in the fishery. However, the costs and risk of not taking regulatory action are such that AFMA considers that the action is necessary. If dolphin interactions continue at previous high rates or fail to be reported, the GHAT, AFMA, the community and ultimately fishing businesses are likely to face much higher costs than those that would be incurred from taking action now. In such circumstances, the fishery may lose approvals under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the operation of the fishery would be put at risk. This has the potential to impact on 79 gillnet concession holders and lost value across the GHAT of \$17.1 million.

Of the eight boats that fished within the Dolphin Gillnet Closure for the 2011-12 fishing season before the First and Second Dolphin Temporary Orders, six remained fishing with gillnets in areas outside of the closure after this date. The remaining two vessels moved operations to other fisheries or ceased fishing.

AFMA is seeking to reduce the impact of taking regulatory action through:

- the GHAT Future Directions Project, which aims to identify long-term solutions to accidental bycatch of marine mammals in the GHAT;
- temporary permits that allow manual hook methods;
- supporting a trial into auto-longline methods in areas closed to gillnets; and
- supporting research into dolphin mitigation for gillnet methods, such as the use of acoustic pingers to reduce the risk of accidental bycatch

Since the First Dolphin Temporary Order 14 boats have been granted temporary hook permits. However, this is a less efficient method than gillnetting and the number of boats actually fishing under this method has been as low as four. Should the closure Direction proceed, the impacts will be reviewed by AFMA prior to its expiry, in consultation with relevant industry members, advisory groups and other stakeholders to aid in developing longer term management measures for the Gillnet Hook and Trap sector of the fishery.

## Background

### *Fishery history*

The GHAT fishery is a sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF). The GHAT sector predominantly targets shark species, with Gummy Shark now the main target species. The conservation-dependant listed School Shark (under the EPBC Act) is also caught incidentally in the GHAT fishery. School Shark is subject to a rebuilding strategy and AFMA is taking action to prevent the deliberate targeted catching of School Shark by fishers.

The fishery operates in Commonwealth waters adjacent to South Australia, Victoria and Tasmania. It was originally a longline fishery targeting School Shark; however concerns with mercury levels in large School Sharks led to Gummy Shark being the principal species targeted in the fishery.

In the early 1970s, gillnets were introduced into the fishery and in 1987 fishing effort off South Australia peaked with nearly 43,000 km of net being set per annum. Management arrangements have markedly reduced Commonwealth gillnet fishing effort in the region. In recent years total annual effort has been around 17,000 km of net. Gillnetting is a method of fishing whereby static nets are set in an area of water for a period of time and catch fish by way of entrapment in mesh. Depending on the size of the mesh of the net, different fish species may be targeted. If the mesh size is larger, smaller fish will be able to pass through the net unscathed.

Prior to the move to output controls in 2001, net length was used to manage fishing effort in the gillnet fishery. From 2002, following the move to output controls through catch quotas, management rules changed to allow operators to use nets up to 4200 m. This remains the standard net length in the fishery with nets of up to 6000 m used by some operators to increase catching efficiency.

There are currently 79 fishing concessions which allow the use of gillnets in the GHAT.

Under Offshore Constitutional Settlement Fisheries Arrangements, the Australian Government is responsible for managing Gummy Shark and associated species in waters adjacent to South Australia, Victoria and Tasmania from the low water mark to the boundary of the Australian Fishing Zone.

### *Dolphin interactions*

Fishers have reported very few interactions with dolphins throughout the history of the SESSF fishery. However, in the year 2010/11 and part of the year 2011/12, numbers rose sharply. The following table shows the increase in reported dolphin interactions:

<b>Season</b>	<b>Logbook reports</b>
2006-07	4
2007-08	6
2008-09	3
2009-10	0
2010-11	21 (1 live)
2011-12	44 (2 live)
2012-13*	4

\*Note- final figures for interactions are subject to logbook and other reporting and may vary as final data is processed.

Table 1. The increase in reported dolphin interactions seen in recent fishing seasons (which run from 1 May to 30 April):

The fishing year in the above table represents the SESSF fishing year which is 1 May through 30 April. Given differences in reporting between boats with and without independent monitoring, it is likely that this figure underestimates the real level of interaction. The 52 reports from September 2010 to September 2011 were from eight of the 50 active boats in the fishery. All of the vessels reporting dolphin interactions during this period had e-monitoring systems onboard.

In July 2010 AFMA increased observer coverage to 10 per cent in the Australian Sea Lion Management Zone (ASLMZ) adjacent to much of South Australia to better monitor gillnet fishing interactions with Australian Sea Lions. The increase in reporting of dolphin interactions appears to have commenced around September 2010 at the same time electronic monitoring systems were fitted to some boats in the fishery.

AFMA also wrote to GHAT fishery concession holders in March 2011 reminding them of their obligation to report interactions with Threatened, Endangered and Protected species, particularly dolphins. In May 2011 observer coverage was increased to 100 per cent in the ASLMZ and to 10 per cent for the rest of the fishery. The 100 percent observer coverage obligation can be met either through observer coverage or electronic monitoring.

The ASLMZ comprises much of the area where dolphin interactions have been reported. The increased level of observer coverage and greater awareness of reporting requirements may explain additional reporting of dolphin interactions.

### *Dolphin Conservation*

There is an acknowledged paucity of management data for dolphin populations in southern Australia with ongoing uncertainty about species distribution, population size, movement and species classification. This has been highlighted recently with the identification of a new dolphin species in Port Philip Bay. While the overall population of dolphins is likely to be high in the Dolphin Gillnet Closure, AFMA is unable to ascertain whether sub-populations of genetically distinct animals may be involved in the interactions. AFMA has recently facilitated

independent analysis of electronic monitoring camera footage to identify dolphin species. The analysis of 40 dolphin mortalities found 38 Common Dolphins and two Bottlenose Dolphins. Populations of Common Dolphins and Bottlenose Dolphins in southern Australian waters are not well understood at present, however, AFMA has recently supported a research proposal to better understand dolphin populations in the waters off South Australia.

Further, as noted elsewhere in the RIS, the FM Act places an additional requirement on AFMA in the management of the fishery to ensure, as far as practicable, that management measures are not inconsistent with the preservation, conservation and protection of all species of whale. Application of the precautionary principle, as required by the FM Act, also supports the action proposed.

Australia has also actively supported and promoted the conservation of small cetaceans (including dolphins) at the International Whaling Commission (IWC). Acting domestically in a manner consistent with our international policy position is necessary if Australia is to remain credible at the IWC.

### *Protection of marine mammals – Australian Sea Lions*

Recently, AFMA introduced significant measures to protect populations of Australian Sea Lions. These were:

- The Australian Sea Lion Management Strategy.
- 30 June 2010: The *Southern and Eastern Scalefish and Shark Fishery (Closures) Direction No. 3 2010* (First Sea Lion Direction) implements closures to protect Australian Sea Lion populations in South Australia. In order to give effect to the changes urgently, *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2010* was made to waive the seven day notice period required under the *Fisheries Management Act 1991*.
- 1 May 2011: the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011* (First Sea Lion Temporary Order). The First Sea Lion Temporary Order was in force until 1 November 2011 and provided for:
  - the extension of the areas closed to gillnet fishing around 31 Australian Sea Lion closures. This brought the total area of closures around 48 Australian Sea Lion colonies off South Australia to 18,500 square kilometres;
  - affected gillnet operators to use hooks in the areas closed to gillnets; and
  - 100 per cent monitoring for gillnet operations in the waters adjacent to South Australia, either by onboard scientific observer or by EMS.
- 1 November 2011:
  - *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.

- *Southern and Eastern Scalefish and Shark Fishery (Closures) Direction No.2 2011* (Second Sea Lion Direction) extends closures contained in the First Sea Lion Temporary order for a period of 18 months to 30 April 2013.
- also introduced at this time was an increase in the observer coverage for gillnet fishing across the GHAT to 10 per cent and precautionary Australian Sea Lion bycatch levels to trigger temporary closures.
- January 2012: revised management zones and lowered bycatch levels for Australian Sea Lions to trigger closures of those management zones.

During 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.

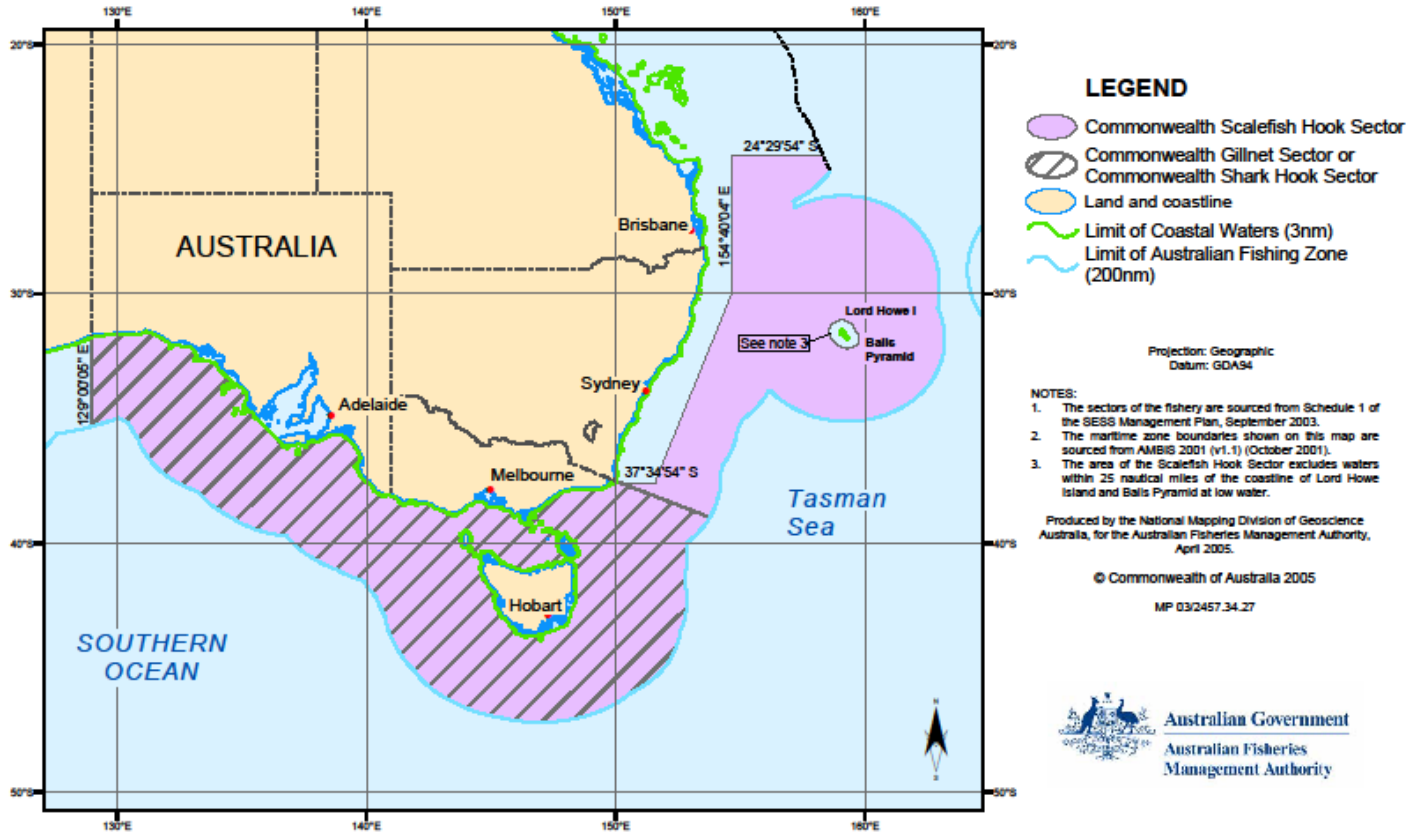
### *Protection of marine mammals – dolphins*

Measures that have been introduced to the GHAT for the protection of dolphins include:

- 22 September 2011: *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2011 No. 2* (First Dolphin Temporary Order) was made. This was implemented to minimise the risk of dolphin interactions and was in force for six months. The First Dolphin Temporary Order:
  - closed an area of the fishery off South Australia to gillnet fishing (Dolphin Gillnet Closure). Interactions with dolphins have mainly occurred in Commonwealth waters off South Australia south of the Coorong in the area from Kangaroo Island to Cape Jaffa. The First Dolphin Temporary Order closed this ‘hotspot’ area to fishing by gillnet methods in order to minimise interactions and prevent further dolphin deaths;
  - allowed affected gillnet operators to use manually baited hooks (Manual Hooks) instead of gillnets; and
  - established the Dolphin Observation Zone adjacent to the closed area. In this area operators could fish with gillnets provided there was 100 per cent monitoring of their operations, either through independent scientific observers or electronic monitoring by cameras.
- 22 March 2012: Upon the expiry of the First Dolphin Temporary Order, it was extended for a further six months by the *Fisheries Management (Southern and Eastern Scalefish and Shark Fishery Management Plan 2003) Temporary Order 2012 No. 1* (Second Dolphin Temporary Order) until 23 September 2012.

The dolphin area closure is 27,239km<sup>2</sup>. The approximate size of the GHAT gillnet area is 297,142 km<sup>2</sup>. The below map shows the area of the GHAT Sector of the Southern and Eastern Scalefish and Shark Fishery.

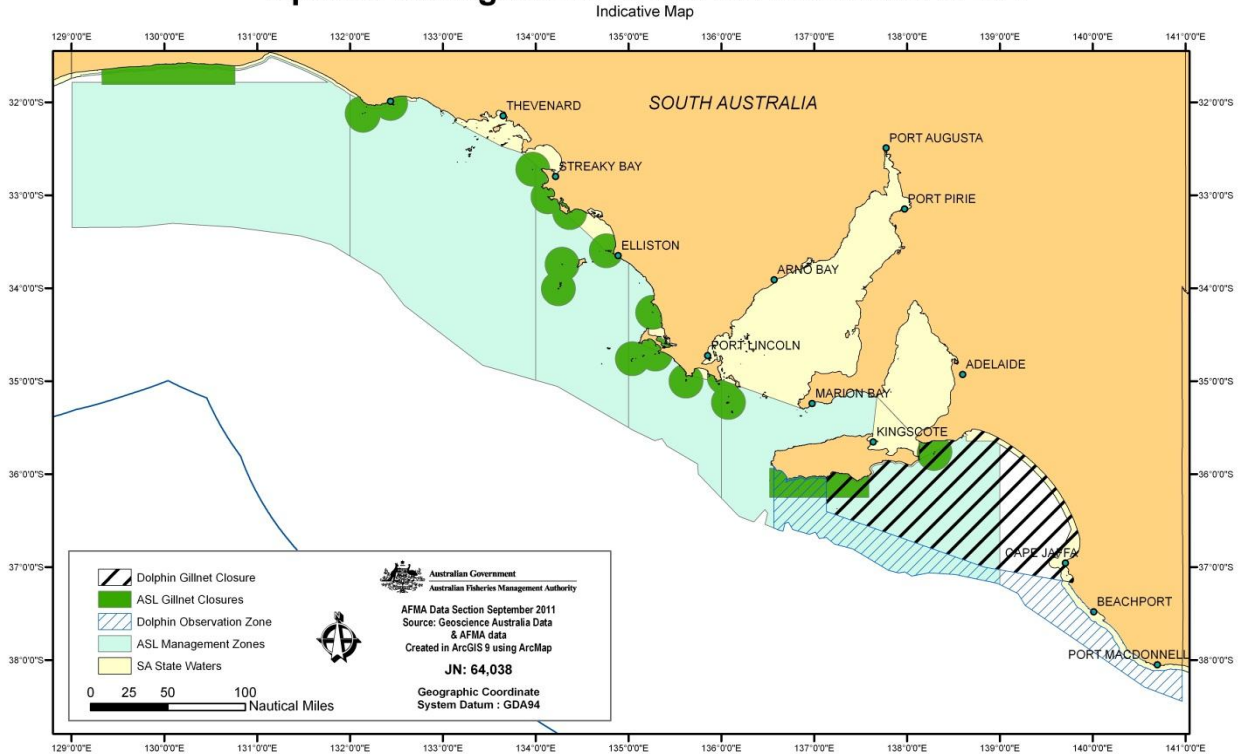
## Southern and Eastern Scalefish and Shark Fishery Commonwealth Hook Sectors and Gillnet Sector



The below map shows the Dolphin Gillnet Closure and the Dolphin Observation Zone in effect under the Second Dolphin Temporary Order. It also shows the zones and closures in place to protect Australian Sea Lions.



## Spatial Management of Marine Mammals In SA



### *The need for action*

The Second Dolphin Temporary Order expires on 23 September 2012 at which time the measures contained therein to minimise interactions with dolphins cease to have effect. The closure to gillnetting of the area where dolphin interactions were recorded under the First and Second Dolphin Temporary Orders have achieved the desired result of minimising interactions with dolphins. Since the commencement of the First and Second Dolphin Temporary Orders, AFMA has been notified of 17 additional dolphin mortalities across the GHAT. One of those mortalities was recorded in the Dolphin Observation Zone. Due to these reported interactions there is still a high level of perceived risk that interactions with dolphins would increase should the current measures contained in the Second Dolphin Temporary Order not be continued. AFMA must apply the precautionary principle and assume there is still an abundance of dolphins in the area and allowing gillnet fishing to resume would result in a high level of interactions.

The SESSF Management Plan has been 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 high level of dolphin deaths in the GHAT, further assessment of the fishery is likely unless AFMA continues action to minimise interactions with dolphins. The outcomes and subsequent approvals from a new assessment of the fishery are uncertain and

may not allow, or significantly restrict, fishing, if appropriate dolphin management measures are not in place.

Under the EPBC Act all cetaceans are protected in Australian waters. The environmental assessment and approvals process allows the accidental take of whale species (including dolphins) in fisheries, providing fishing is conducted in accordance with an approved fisheries Management Plan and all reasonable steps are taken to avoid interactions.

Government action is required to continue necessary steps to minimise interactions with dolphins in South Australian waters by gillnets to prevent further dolphin deaths. Since May 1 2011 more than 45 dolphins have died as a result of gillnetting in South Australian waters. Consequences that may arise in the very near future should action not be continued include:

- increased dolphin deaths;
- significant public criticism of AFMA and the Australian Government; and
- the possible loss of environmental accreditation of the SESSF Management Plan which will result in all SESSF concession holders losing the right to export fish taken in the fishery.

AFMA is also not fully certain of the specific species of dolphins involved in the interactions. There is a risk some of the dolphins involved are classified listed species under the EPBC Act and therefore require particular conservation management. There is a continued need to prohibit fishing by gillnets in the area off South Australia where interactions have been recorded to avoid the potential continued take of endangered species.

AFMA's internal Legal Section has advised that there is a risk of legal action based on AFMA not acting in accordance with its objectives under the FM Act relating to ecological sustainability and the management of dolphins, such as an application to the Federal Court on the basis of AFMA failing to take appropriate action.

## **Effects of the First and Second Dolphin Temporary Orders**

### *Additional closures around high risk dolphin colonies*

As with the closures already implemented under the Australian Sea Lion Strategy, the closures made under the Orders had consequences for the commercial viability of gillnet operators in South Australia. Of the 50 active boats in the GHAT fishery 15 have some level of historical fishing effort over the previous five years in the dolphin gillnet closure areas.

For the 2011-12 fishing season mean (average) catches of the four target species in the GHAT was down approximately 27 per cent (from the 2006-07 to 2010-11 average) for the entire gillnet sector of the SESSF, while the South Australian catches were down 78 per cent (Figure 4). It is difficult to ascertain the direct effect of the First and Second Dolphin Temporary Orders on catch figures as a number of other closures were implemented during this period in order to protect Australian Sea Lions (Figure 4). Of the eight boats which fished within the Dolphin Gillnet Closure for the 2011-12 fishing season before the First and Second Dolphin Temporary Orders, six remained fishing with gillnets in areas outside of the closure after this date (Figures 1 and 2). The remaining two vessels moved operations to other fisheries or

ceased fishing. Effort moved to western regions of South Australia and east to the waters near the Victorian/ South Australian border (Figures 1 and 2).

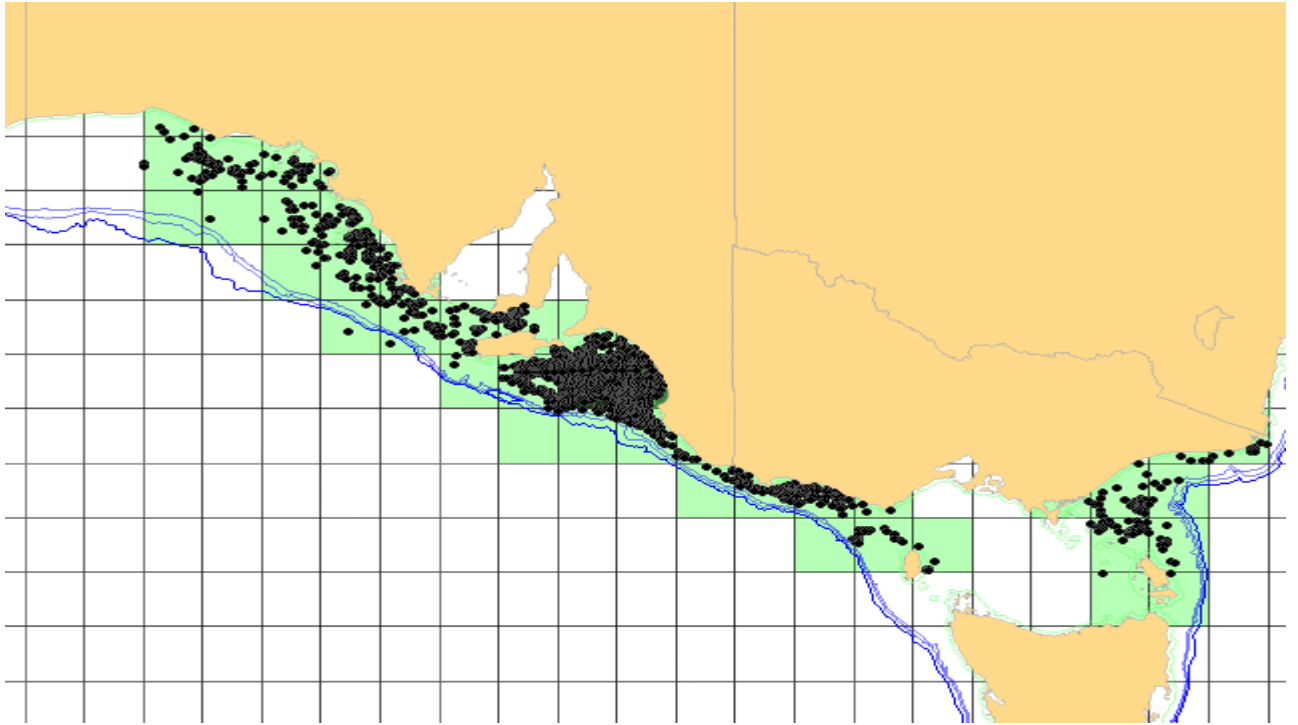


Figure 1: Gillnet shots containing Gummy Shark, 1 May 2011 to 23 September 2011 for GHAT boats with a history of fishing effort within the Dolphin Closure area.

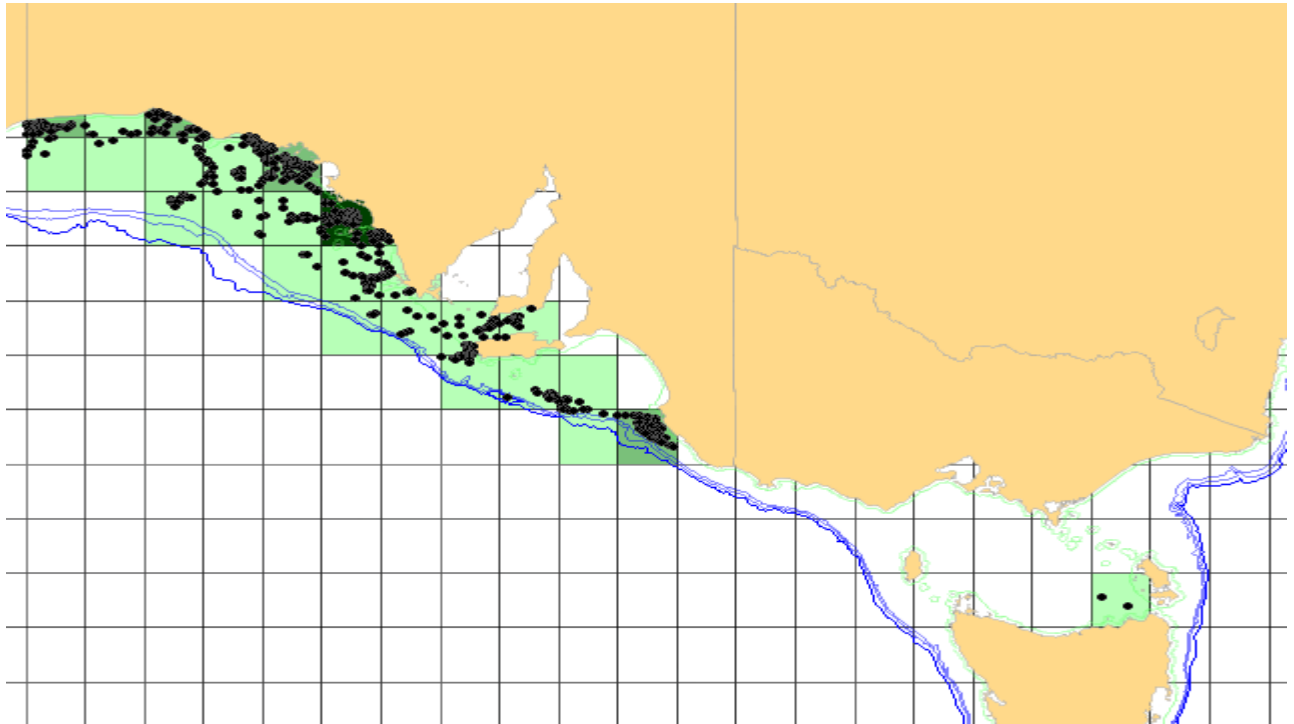


Figure 2: Gillnet shots containing Gummy Shark, 23 September 2011 to 30 April 2012 for GHAT boats with a history of fishing effort within the Dolphin Closure area.

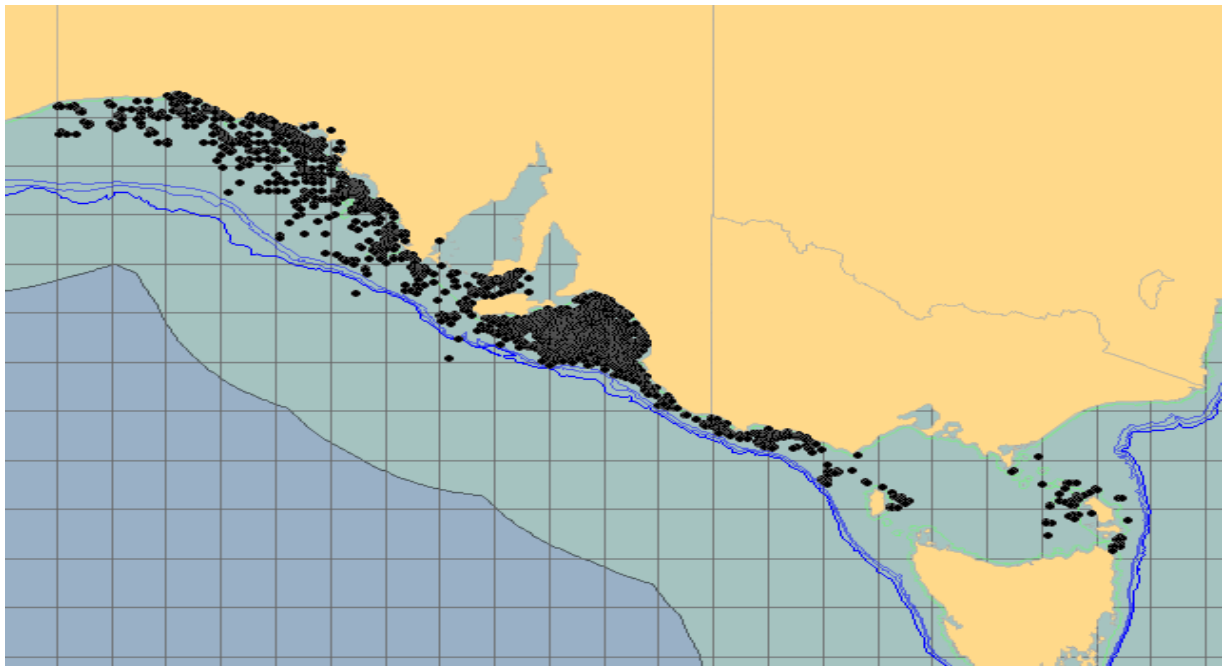


Figure 2a: Gillnet shots containing Gummy Shark, 23 September 2010 – 30 April 2011 (before the dolphin gillnet closure) for GHAT boats with a history of fishing effort within the Dolphin Closure area.

### SESSF Closure Direction No. 3 2012 ASL Management Strategy: Zone D Gillnet Closure

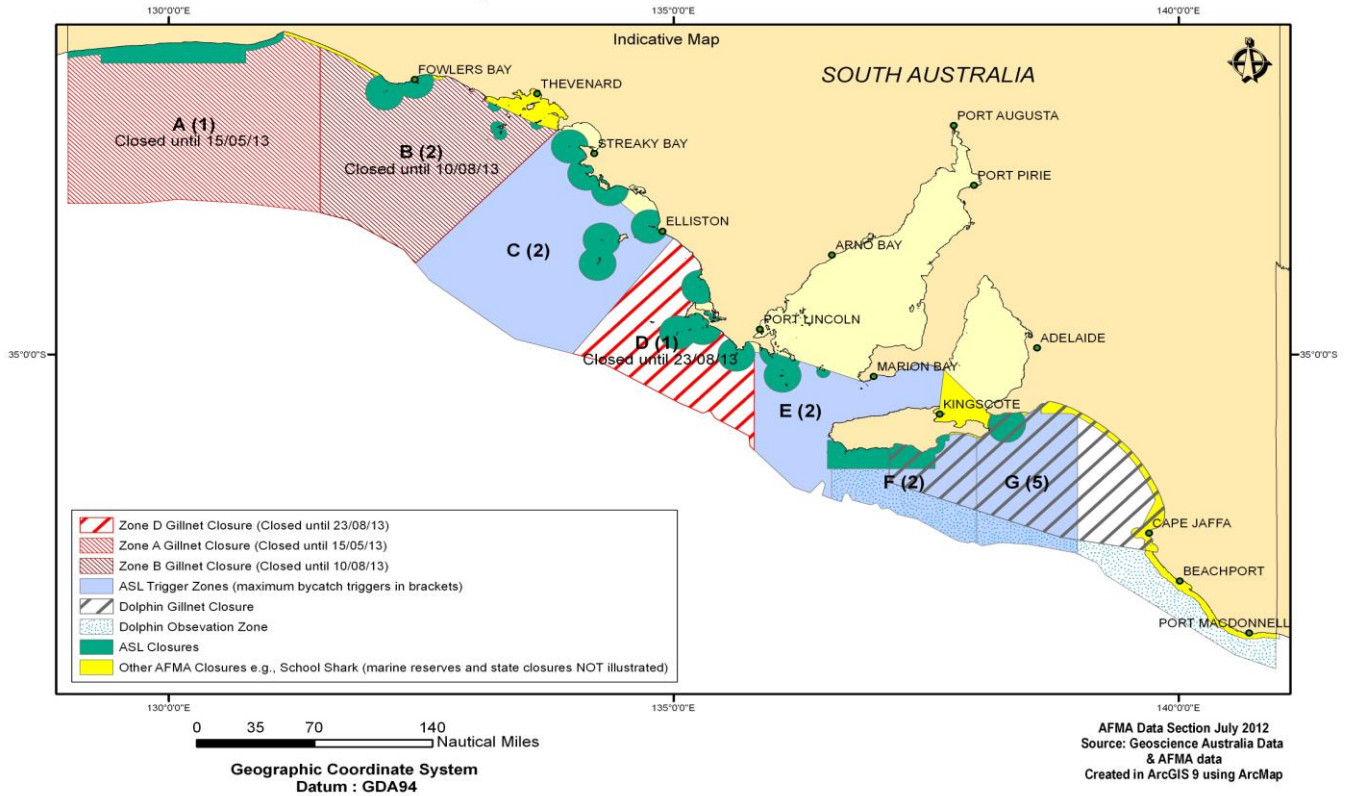


Figure 3: Map of current closures in the South Australian component of the GHAT fishery.

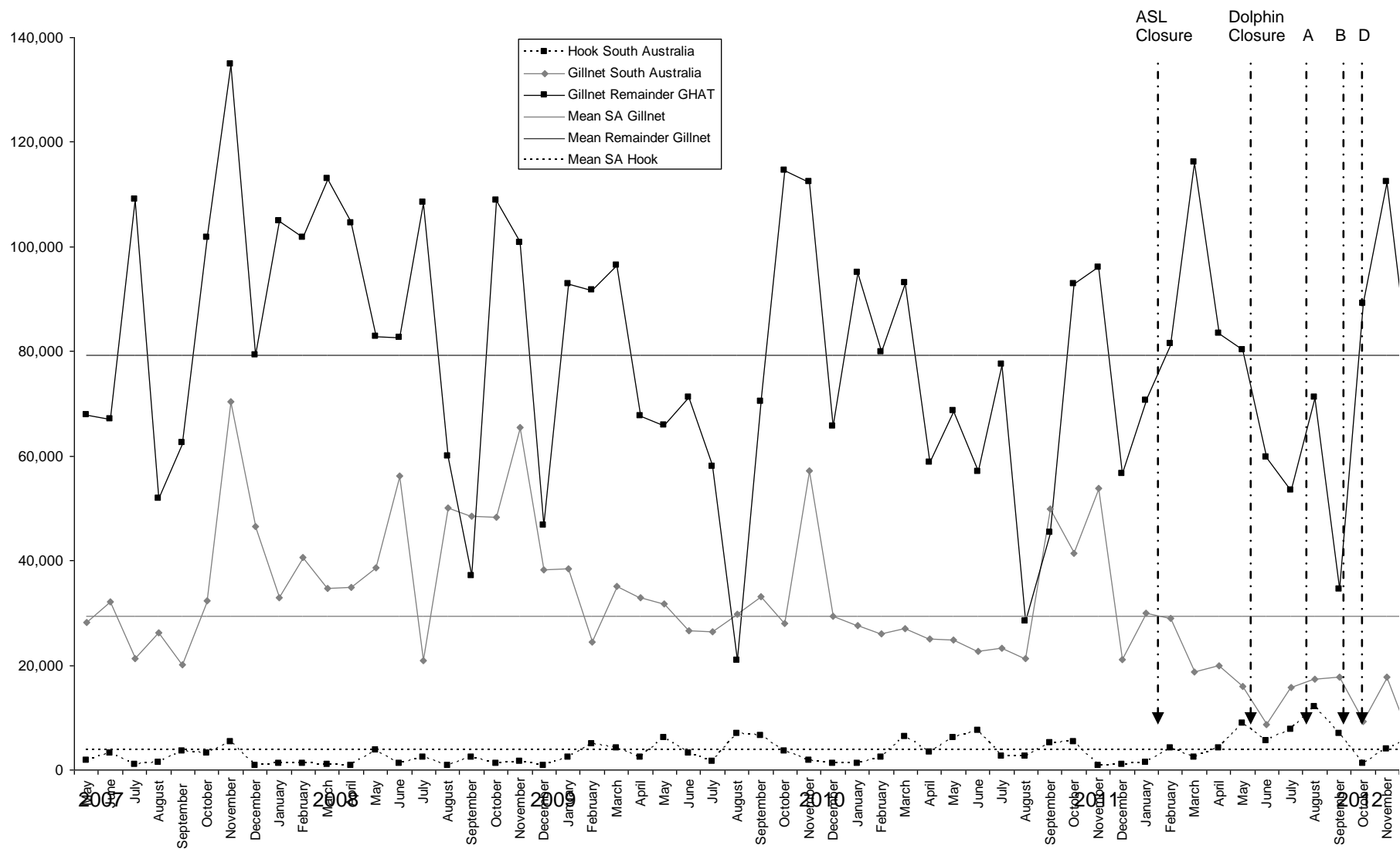


Figure 4: Gummy Shark catch (kg) for GHAT gillnet sector, South Australian gillnet sector and Shark Hook sector between May 2007 and April 2012. ‘ASL Closure’ refers to SESSF Temporary Order No. 1 2011; ‘Dolphin Closure’ refers to SESSF Temporary Order No. 2 2011; ‘A’, ‘B’ and ‘C’ refer to SESSF Directions No 1, 2 and 3 2012.

### *Modification of gillnet concessions to allow the use of hooks*

It's difficult to quantify whether allowing gillnet concession holders to use hooks in the closed area has had an effect on those concession holders, or other concession holders in the broader fishery. At present three boats have taken the opportunity to use hook fishing methods with others currently investigating changing fishing methods. The cost of changing from gillnet to hook fishing methods is highly variable between boats however the conversion has been estimated at around \$30,000. Similarly, converting a boat back to gillnet methods is comparable in cost. Hook fishing catch has increased after the implementation of the First and Second Dolphin Temporary Orders but remains relatively low (Figure 3).

### *Assessment of Dolphin Mitigation Measures*

Since the implementation of the Orders, AFMA has been closely monitoring reports of dolphin interactions. AFMA continues to assess the effectiveness of the current measures in place to minimise interactions with dolphins. AFMA is assessing a number of factors including:

- the spatial and temporal nature of additional dolphin interactions across the rest of the fishery (Figure 5);
- the efficacy of industry voluntary measures under their Code of Conduct including gear modifications, mitigation devices and fishing practices e.g. move-on provisions; and
- the results of any future research on mitigation options.

Since the implementation of the Orders, AFMA has been discussing research on mitigation measures to reduce dolphin mortalities with industry. AFMA has begun work on the GHAT Future Directions Project, which aims to identify long-term solutions to accidental bycatch of marine mammals in the GHAT.

AFMA is also supportive of a trial into auto-longline methods to catch GHAT target species in areas closed to gillnetting. Auto-longline fishing is a hook method where by an automatic baiting machine deploys baited longlines of hooks from the fishing boat and allows for more hooks to be deployed in less labour intensive manner than manual baited hook fishing.

AFMA considers that there would be difficulties associated with quantifying the effectiveness of the Dolphin Gillnet Closure without actual fishing taking place within the area, which if permitted would pose extremely high risk of dolphin mortalities. AFMA's legislative objectives, in particular the precautionary principle, clearly state that the absence of full scientific certainty should not be used as a reason for postponing measures to prevent environmental impacts.

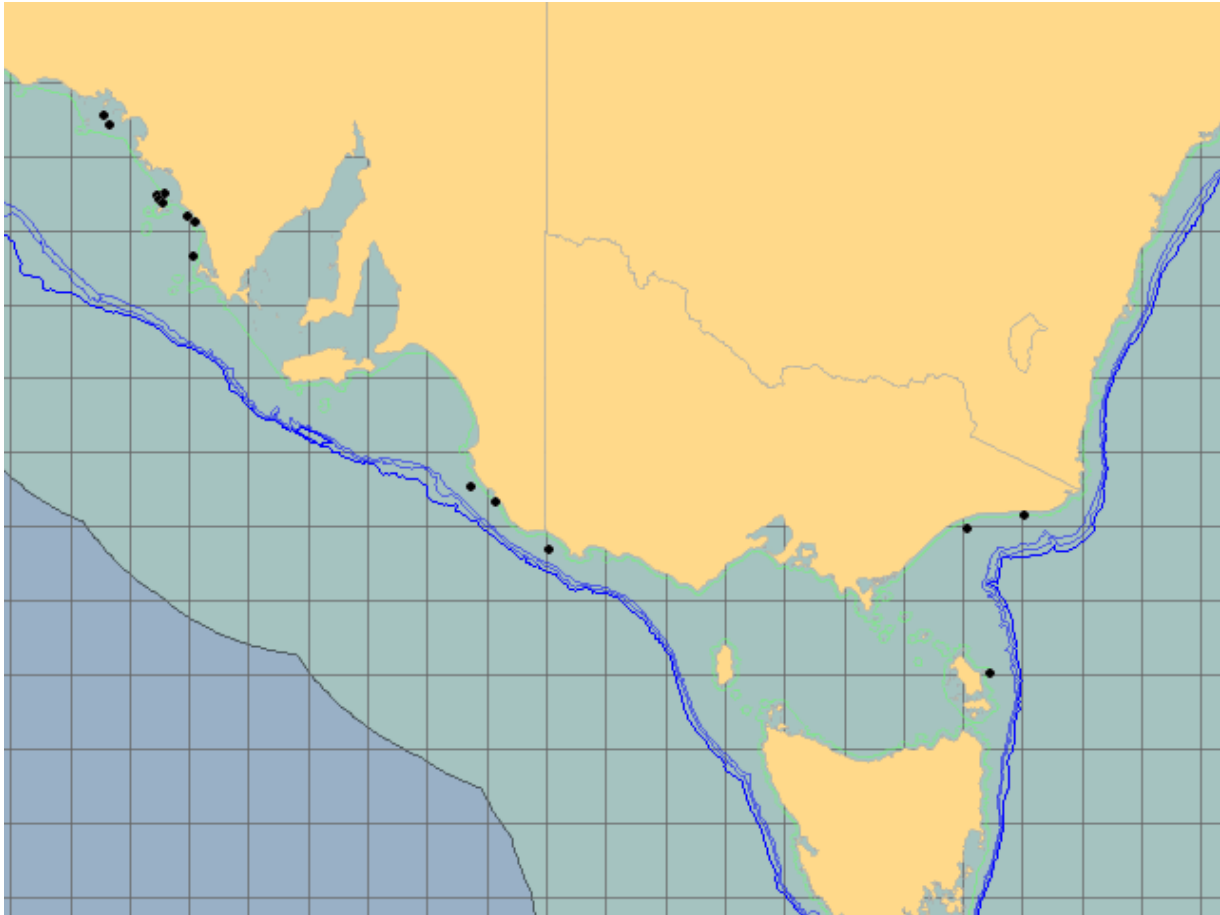


Figure 5: Recorded dolphin interactions in the GHAT fishery since the introduction of the Dolphin Temporary Order 23 September 2011.

*E-monitoring results*

Twelve boats have been fitted with electronic monitoring systems (EMS) to address sea mammal interactions, and a number of these boats were fishing in the area with high dolphin interaction rates. Analysis has shown the EMS to be effective at capturing all fishing events where a captured animal breaks the surface of the water with sufficient clarity to detect interactions with animals such as dolphins.

The majority of dolphin interactions have been reported on boats where EMS are installed. AFMA is confident in the ability of the systems to monitor dolphin interactions based on their ability to detect other large catch items, including animals which drop out of the net before landing.

**Objective of regulatory change**

The broad objectives 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, with particular emphasis on the conservation of whales noting that the legislation includes dolphins and



porpoises in this definition. Objectives of the *Fisheries Management Act 1991* (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 must not be 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.

## Options to address the issue

The options available to AFMA once the Second Dolphin Temporary Order expires are: to do nothing; to allow industry to develop voluntary measures and self-regulate; to work with industry through co-regulation; or to take regulatory action, including registering a closure Direction.

### *Do nothing*

AFMA may decide to do nothing and allow the Second Dolphin Temporary Order to expire. This would mean that on 23 September 2012, the area currently closed to gillnetting would reopen to fishing by gillnet methods.

AFMA considers that by doing nothing to minimise interactions with dolphins, it will not be meeting the legislative objectives of the FM Act or the fisheries requirement of the EPBC Act.

AFMA further considers that the environmental conditions which are likely to be causative factors for higher rates of dolphin interactions in the Dolphin Gillnet Closure persist and further dolphin interactions would be likely if gillnet fishing increased.

If AFMA adopted a do nothing approach, the requirement for 100 per cent monitoring would remain only in that part of the Dolphin Observation Zone that overlaps with the Australian Sea Lion Management Zone. This would mean that approximately half the Dolphin Observation Zone would not be subject to the current requirement for 100 per cent monitoring.

There is a high likelihood that if AFMA does not continue action to minimise interactions with dolphins the future operation of the fishery as a whole may be at risk if the current environmental approval for the fishery is not maintained. This would have an immediate and dramatic effect on industry as it would lose the approval to fish in the fishery and/or export fish from the fishery.

Doing nothing to address dolphin interactions and deaths may also result in significant public criticism of AFMA and the Australian government. Dolphin deaths are a sensitive public issue and inaction would lead to increased public pressure on AFMA and the Australian government to take decisive action.

Environmental groups such as the Humane Society International are aware of recent dolphin deaths by gillnetting and have certain expectations of AFMA as the governing regulatory body to take action.

While this option is not preferable to achieve the desired objectives, it provides a useful benchmark for assessing the impact of other options. AFMA considers that if no further regulatory action was taken when the Second Dolphin Temporary Order expired:

- Fishing businesses currently affected by the Dolphin Gillnet Closure would initially benefit from being allowed into the area to fish with gillnets. Although not quantifiable with certainty, the Dolphin Gillnet Closure previously yielded catch of up to 205 tonnes per annum and revenue of approximately \$2.5 million per annum. Reopening the closure would allow operators to increase revenue by operating more efficiently (although, because effort has been displaced, the net effect of reopening the closure would be less than \$2.5 million)
- Fishing businesses may benefit from not having to pay costs associated with 100% monitoring in those parts of the Dolphin Observation Zone that do not overlap the Australian Sea Lion Management Zone. This would represent savings for set up costs of EMS which can be up to approximately \$21,000 and \$400 per day for analysis of electronic monitoring footage. Alternatively, operators who would have used onboard observers instead of EMS would save approximately \$1200 per day. Operations in the Australian Sea Lion Management Zone would still require 100 per cent monitoring.

However, some monitoring would still be required. AFMA has policies in place such as the Integrated Scientific Modeling Program which specifies a minimum amount of observer coverage for fisheries. Currently in the GHAT sector of the SESSF, concession holders are subject to 10 per cent observer coverage.

The potential benefits to fishing businesses are short-term, and must be considered in light of risks and future potential costs associated from continuing the same fishing practices in the Dolphin Gillnet Closure. These include the risk of the loss of accreditation of the SESSF Management Plan under the EPBC Act as highlighted above.

Consumers may benefit from the do nothing approach through increased availability of Gummy Shark (sold as 'flake' at take away fish and chip shops) sold at a lower price.

While difficult to quantify, the likely costs to the community are a reduction in the protection of a valued marine mammal.

For the reasons above, doing nothing is not considered the preferred option.

### *Self-regulation*

AFMA could rely on the fishing industry to implement voluntary measures to manage interactions with dolphins. This could include an industry code of practice, voluntary closures and self-reporting to achieve the primary objective of minimising dolphin interactions and, depending on the implementation of the arrangements, provide for ongoing monitoring. One benefit of the self-regulation approach is that, by being industry developed and implemented, it would likely minimise the impact of measures on fishing businesses. The AFMA Commission

and SEMAC have recommended the introduction of a voluntary industry code of conduct which deals with marine mammal interactions. To date, industry is yet to formalise a voluntary code of conduct.

Self-regulation to reduce interactions with dolphins and other species listed as protected or conservation dependent under the EPBC Act (threatened, endangered and protected species, or TEPs) have previously resulted in mixed outcomes. They are dependant on uptake and a uniform commitment to follow procedures by all relevant industry stakeholders and tend to work best when there is a strong industry association to monitor and enforce the arrangements. The GHAT does not have a representative industry association, and the fishery is characterised by strong regional differences with respect to interactions, with sea lion and dolphin issues occurring mainly in the western part of the fishery.

Self-regulation would provide the fishing industry with the opportunity to develop and implement appropriate arrangements to reduce dolphin interactions. The set up costs and initial management costs are likely to be comparatively low for this approach because operators would seek out the most efficient response. Consumers, particularly those in South Australia, are likely to benefit from self-regulation through greater availability of Gummy Shark at lower prices.

However, the operators in the GHAT do not have a sole representative industry association and, despite the enactment of the First and Second Dolphin Temporary Orders, industry has not developed effective measures for dolphin protection. It is highly unlikely that industry arrangements could be developed before the Second Dolphin Temporary Order expires nor are they likely to be adhered to by a significant part of industry. As such, there are significant risks from a self-regulation approach to:

- The Australian Government, in particular AFMA, by not acting in pursuit of its legislative objectives; and
- The community, which places a high environmental value on the protection of dolphins.

Environmental groups such as the Humane Society International are aware of recent dolphin deaths by gillnetting and have certain expectations of AFMA as the governing regulatory body to take action.

AFMA does not regard self-regulation as the preferred option to manage dolphin interactions for the area where the majority of interactions have been recorded.

### *Co-regulation*

Co-regulation in this context would consist of an industry agreed approach to minimise the risk of dolphin interactions with measures enforced by AFMA. For example, if industry agreed to use a certain type of net to minimise bycatch, AFMA may be able to adopt this into management arrangements and monitor the arrangements to ensure compliance.

Co-regulation is difficult in the GHAT because there are two industry associations with different codes of practice. Neither industry body represents a broad spectrum of the industry. Further, AFMA considers that the measures in the current codes of practice of the two industry associations are not of themselves sufficient to protect against interactions with dolphins in this area of the fishery.

Through consultation, industry have been made aware that should voluntary measures not be in place or effective, regulatory measures will be continued to address specific issues such as dolphin and other TEP species interactions.

Co-regulation in the context of dolphin protection in the GHAT would require firstly both fishing industry coordination to agree on appropriate measures and secondly cooperation between the fishing industry and AFMA to implement and regulate compliance. Co-regulation would benefit fishing businesses by allowing them to develop measures to reduce the risk to dolphins in a cost effective way.

However, similarly to self-regulation, the fishing industry has not developed any co-regulation proposals since the introduction of the First and Second Dolphin Temporary Orders and is unlikely to do so before the expiry of the Second Dolphin Temporary Order. As such, there are significant risks from a co-regulation approach to:

- The Australian Government, in particular AFMA, by not acting in pursuit of its legislative objectives; and
- The community, which places a high environmental value on the protection of dolphins.

AFMA does not regard co-regulation as the preferred option to manage dolphin interactions for the area where the majority of interactions have been recorded.

### *Regulatory measures*

Given that the do nothing and self/co-regulation options are not regarded as an effective response, a regulatory approach is preferred. The most appropriate regulatory responses available to AFMA are to register a closure Direction and grant temporary fishing permits.

### **Closure Direction**

Section 41A of the FM Act gives AFMA the power to direct that fishing not be engaged in any part of a fishery, or in a particular part of a fishery. Under this section, AFMA could continue the Dolphin Gillnet Closure beyond the expiry date of the Second Dolphin Temporary Order for a period of 12 months. It is not possible to extend the Second Dolphin Temporary Order beyond 23 September 2012 because Temporary Orders may only be extended once under the FM Act. The Direction would continue until management arrangements could be developed to allow dolphin friendly fishing in the Dolphin Gillnet Closure.

A closure Direction would be consistent with AFMA's legislative obligation to pursue its objectives. These include the objective of ensuring that the exploitation of fisheries resources is conducted in a manner consistent with the principles of ecologically sustainable development (which include the exercise of the precautionary principle), and in particular the need to have regard to the impact of fishing activities on non-target species and the long term sustainability of the marine environment. In the Act the precautionary principle means "*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.*" [1992, *Inter Governmental Agreement on the Environment*, section 3.5.1]

## **Grant of Fishing Permits**

Section 32 of the FM Act gives AFMA the power to grant fishing permits authorising the use of an Australian boat for fishing in a specified area of the Australian Fishing Zone or a specified fishery.

Similarly to addressing interactions with Australian Sea Lions, AFMA could choose to utilise this power to address the dolphin interaction issue in combination with a closure Direction.

The grant of temporary fishing permits would allow the use of hooks by operators who hold a Commonwealth concession normally allowing fishing by gillnets in the areas proposed to be closed under the Direction, and in adjacent areas within the GHAT. This allowance would be available to concession holders who meet eligibility criteria based on the amount of fishing effort in the period March 2007 to present.

AFMA has already granted temporary fishing permits allowing the use of hooks to concession holders who met eligibility criteria for fishing in the Australian Sea Lion Zone. Many of these concession holders would be eligible under criteria for fishing history in the Dolphin Gillnet closure given the areas overlap considerably. Any concession holder which can demonstrate fishing history in the area not covered by the Australian Sea Lion Zone and has not already been granted a fishing permit allowing the use of hooks, will be eligible for the grant of a temporary fishing permit.

Granting temporary fishing permits would be consistent with AFMA's legislative obligation to pursue its objectives. In allowing those gillnet fishers most affected by the closure Direction to continue to fish in areas closed to gillnet fishing using an alternative fishing method, the action would be consistent with AFMA's objective of maximising the net economic returns to the Australian community from the management of Australian fisheries. This would at least reduce the economic impact of any gillnet closure.

Temporary Fishing permits will be granted for an 18 month period to coincide with the time period of the closure Direction. The time will allow AFMA and industry members to consider longer term management options for the fishery.

## **Existing Regulatory Powers**

Regulation 9F of the *Fisheries Management Regulations 1992* (the Regulations) gives AFMA the power to direct that an observer be carried on a nominated boat for a fishing trip. Under the Second Dolphin Temporary Order, a clause states that if gillnet fishing occurs in the dolphin observation zone (waters adjacent to the closed area) the concession holder must carry an observer on board the nominated boat or have an electronic monitoring device fitted to the boat. Once the Second Dolphin Temporary Order expires, AFMA could manage this requirement via the abovementioned power in the Regulations. Concession holders would be directed by AFMA in writing that should gillnet fishing take place in a specified area of waters in the GHAT sector they are required to carry an AFMA observer onboard the nominated boat in the absence of a fitted electronic monitoring device.

## Details of proposed arrangements

### *Closure of area with heightened dolphin interactions by Direction*

Interactions with dolphins have mainly occurred south of the Coorong in Commonwealth waters off South Australia in the area from Kangaroo Island to Cape Jaffa. The Direction would close this ‘hotspot’ area to fishing by gillnet method in order to continue to minimise interactions and prevent further dolphin deaths.

The expected impact of extending the Dolphin Gillnet Closure by a Direction is informed by data from the First and Second Dolphin Temporary Orders, which together have been in force for approximately 11 months. While there are significant uncertainties with the data used for the impact analysis, available relevant information to inform the decision making process is set out below.

The impact of the Dolphin Gillnet Closure on gillnet operators in South Australia is considerable:

Cost of lost catch: gillnet operators in South Australia are likely to face costs through lost catch as a result of not being able to fish with gillnets in the Dolphin Gillnet Closure. Of the 50 active boats in the GHAT, 15 have had a history of fishing in the Dolphin Gillnet Closure area over the last five years.

Of the eight boats which fished within the Dolphin Closure for the 2011-12 fishing season before the First and Second Dolphin Temporary Orders, six remained fishing with gillnets in areas outside of the closure after this date (Figures. 1 and 2). Effort moved to western regions of South Australia and east to the waters near the Victorian/ South Australian border (Figures. 1 and 2).

Cost of displaced effort: while the Dolphin Gillnet Closure will be closed to gillnetting, affected concession holders still have a large area of the fishery in which they can operate by the gillnet method. However, there are likely to be associated costs including higher fuel bills from fishing in new areas and possible increased effort in other parts of the fishery leading to lower catches in the future but this is hard to quantify at this stage.

Table 2: SESSF Gillnet catch for Gummy Shark, School Shark, Elephant Fish and Saw Sharks and estimated GVP values 2006-2011. Source: AFMA Catch Disposal Records and Logbook data. July 2012.

Season	Total catch (kg) gillnet GHAT	Total gillnet catch (kg) all South Australia	Total gillnet catch (kg) in Dolphin Gillnet Closure	Proportion of gillnet catch in Dolphin Gillnet Closure	Estimated GVP of gillnet catch Dolphin Gillnet Closure *
2006-07	1,637,920	589,799	218,633	13%	\$3,513,432
2007-08	1,816,309	533,010	198,164	11%	\$2,158,006
2008-09	1,763,213	604,211	198,588	11%	\$2,349,296
2009-10	1,507,770	448,147	167,045	11%	\$1,780,700
2010-11	1,468,968	420,388	243,824	17%	\$2,694,255
Mean 2006-2011	1,638,836	519,111	205,251	13%	\$2,499,138

\*Estimated using mean value per kilogram, ABARES Fisheries Status Reports 2008-10.

The Dolphin Gillnet Closure accounts for approximately 13 per cent of fishing effort for the entire GHAT sector based on recent fishing history. The estimated mean Gross Value of Production for the Dolphin Gillnet Closure was \$2.5 million per annum over the 2006-07 to 2010-11 seasons (Table 2). Note that the current impact on industry Gross Value of Production is likely to be less than this amount because some effort has been displaced to other areas of the fishery (see above at Figure 2).

There is also a risk of reduction in allowable catches if more catch is taken in a smaller area of the fishery due to the scientific assessment of total allowable catches being reduced by accounting for smaller localised stocks.

### *Granting of temporary fishing permit to allow the use of hooks*

Noting that the use of hook fishing methods poses a much lower risk than gillnets to most TEP species, particularly dolphins, AFMA is proposing to grant temporary fishing permits to allow gillnet operators to use hooks in some circumstances in those areas closed to gillnetting under the Direction and other areas of the GHAT Sector. This measure will only apply to concession holders with a recent history of fishing in the Dolphin Gillnet Closure.

As previously mentioned, AFMA has already granted temporary hook permits to concession holders allowing the use of hooks in the Australian Sea Lion Management Zone which partially overlaps the Dolphin Gillnet Closure. Those eligible concession holders who did not receive a hook permit under criteria for the Australian Sea Lion Zone will be granted a permit allowing the use of the hooks in the Dolphin Gillnet Closure.

For the purpose of this interim measure, concession holders with a history over a set reference period with more than 25 per cent of their fishing (measures in net length used) in the Dolphin Gillnet Closure will qualify for the grant of a fishing permit to use hook methods to target shark in the dolphin closure area.

The consequences of this might include a change in the value of concessions which currently allow the use of hooks in the areas closed to gillnets. Setting strict eligibility criteria for the use of hooks by operators with significant previous effort in the Dolphin Gillnet Closure should significantly limit the number of eligible concession holders.

The Shark Resource Assessment Group (SharkRAG) has previously expressed concerns with moving from gillnets to hooks including:

- a decrease in catch selectivity for both target and non-target species;
- the cost of converting large gillnet boats to hook boats; and
- the amount of time needed for both suppliers and operators to move to hooks.

The alternative of preventing the use of gillnets without providing an option for concession holders to fish with another method would have a major significant economic impact on the fishery. Allowing the use hooks by eligible concession holders in the Dolphin Gillnet Closure is a medium term measure and on balance is preferred to not enabling the use of hooks.

The cost of converting gillnet boats to hooks depends on the size of the boat and the configuration of hook fishing, but has been estimated at around \$30,000. Conversion of boats to hook methods may take some weeks, and this would depend on the availability of equipment and location. Manual Hook fishing is less efficient and more expensive than gillnet fishing with more labour required and additional costs for bait. However, hook caught shark can attract a small price premium based on freshness and condition. As the majority of recent fishing effort in the proposed Dolphin Gillnet Closure was by the gillnet method, the efficiency of fishing the same area with hooks is difficult to quantify. AFMA intends to review the results of data collected from proposed hook trials to analyse both the impact and efficiency of fishing by hook methods. These trials will enable AFMA to make long term decisions regarding fishing methods in this area of the GHAT sector.

To address the Shark RAG's concerns, in addition to granting permits allowing for the use of hooks, AFMA is:

- supporting an auto-longline trial which is funding by the Fisheries Research Development Council (FRDC). The trial is currently investigating the impact of hook methods on target, bycatch and TEP species and the economic viability of hook fishing methods in targeting Gummy Shark. The project is due for completion in March 2013; and
- supporting research into dolphin mitigation measures for gillnets such as the use of acoustic 'pingers'.

Given the current closures in place which prevent gillnetting, the conversion of boats to hook methods appears to be a medium to long term solution for affected fishers. Converting boats to hook fishing methods will allow for fishing in more areas of the GHAT in the medium term and possibly the longer term depending on the results of trials and data received from the dolphin/Australia Sea Lion mitigation measures.

AFMA will not be providing any assistance to concession holders affected by the proposed closure Direction.



### *Economic impact*

The area proposed to be closed under the Direction accounts for approximately 22 per cent of fishing effort for the entire GHAT sector based on recent fishing history. Gross Value of Production for the GHAT sector of the SESSF in 2009-10 was \$24.5 million.

It should be noted that the fishery is managed through an access statutory fishing right, which limits entry to the fishery, and catch quotas allocated as statutory fishing rights. As a transitional or limited term measure the proposed closure Direction may have a short term impact; however the underlying value of the fishing rights may be unaffected in the longer term, depending on future arrangements.

While fishing in the Dolphin Gillnet Closure will be restricted, the fishery is quota managed and it is possible for quota to be caught across the fishery, or by using other fishing methods. Quota owners are able to sell or lease out quota at any time. Some concession holders also currently have permits allowing the use of hooks and gillnets and are equipped for both methods, meaning that no additional costs would be incurred to change fishing methods.

### *Additional observer coverage*

Under Regulation 9F of the Fisheries Management Regulations 1992 AFMA has the power to direct a fishing concession holder to carry an observer. The cost of an observer to be carried onboard a boat is approximately \$1200 per day and is cost recovered from industry in full. AFMA has various policies in place such as the Integrated Scientific Modelling Program which specify the amount of observer coverage needed for fisheries or areas of a fishery. In addition to this, specific circumstances will arise whereby concession holders are directed to carry an observer. Observer coverage allows for a better understanding of any by-catch mitigation strategies that need to be put in place, if required.

Currently in the GHAT sector of the SESSF concession holders are subject to 10 percent observer coverage. Additionally, under the current Australian Sea Lion measures and the Second Dolphin Temporary Order, specific areas of the fishery are subject to 100 percent observer coverage if fishing is undertaken using gillnets. In the areas subject to 100 percent observer coverage, a concession holder may choose to instead use an onboard camera to monitor fishing activities. Onboard cameras may be purchased at an approximate cost to operators of \$21,000. The wait time on a suitable camera is currently 8-9 weeks. In addition operators will need to cover the costs of data processing and analyses which will cost \$60 per hour of footage analysed, \$300 per disc analysed and \$300 per disc report. There are currently 12 boats fitted with suitable camera systems. All cameras were installed at a cost to AFMA as part of the implementation of camera systems. Boats were chosen on the criteria of:

- interest in e-Monitoring before the Australian Sea Lion temporary order was registered; and
- were equipped with gillnetting equipment and operate in the gillnet fishery; and
- had a demonstrated historical fishing activity in the Australian Sea Lion Management Zone.

It is proposed that the current 100 percent observer zone when fishing with gillnets under the Second Dolphin Temporary Order be continued. A proportion of the mandatory

observer/monitoring zone will overlap the current monitoring zone in place under the measures taken to deal with Australian Sea Lion interactions.

## Consultation

AFMA has been working with stakeholders for over a year in the development of strategies to reduce the level of TEP interactions in the GHAT. This culminated in the development of the Australian Sea Lion Management Strategy in June 2010 which further led to the implementation of the Australian Sea Lion Temporary Order to minimise interactions with Australian Sea Lions.

Leading up to the registration of the First Dolphin Temporary Order, AFMA consulted with industry, environment groups and scientists on the issue of dolphin interactions. AFMA discussed dolphin interactions with the Shark Resource Assessment Group (SharkRAG). SharkRAG comprises scientists, industry, economists, representatives from the environment sector and AFMA representatives and provides scientific advice to AFMA and the AFMA Commission. SharkRAG considered options to address the issue at their meeting of 29-30 August 2011. SharkRAG heard from industry participants on efforts to develop industry based voluntary compliance measures. Some industry members favoured an immediate closure of the Coorong area to gillnet fishing, while others argued for additional observer coverage. Other industry members noted the economic significance of the area of concern to SA gillnet fishers.

AFMA also discussed the issue of dolphin interactions with the South East Management Advisory Committee (SEMAC). SEMAC is an expert body which provides advice to the AFMA Commission on fisheries management issues, specifically the South Eastern Fisheries including the GHAT. It is comprised of industry, scientific, AFMA and conservation members. SEMAC members represent the interests of all stakeholders in the SESSF, and includes members from the GHAT sector which is the sector most likely to be affected by the proposed measures. The advice of SEMAC is not binding, but is taken into account by the AFMA Commission.

At a meeting on 19 September 2011 an agenda item was tabled outlining the dolphin interaction issue. Voluntary measures were discussed but AFMA noted that to be effective a fishery wide industry body would be necessary to oversee voluntary compliance and ensure uniform application across the fishery. It was outlined in the agenda paper that in the absence of an effective or credible industry response AFMA would need to regulate fishing to address dolphin interactions. The notion of spatial closures was tabled for discussion in the agenda paper.

At the meeting, a number of SEMAC members supported an immediate closure to gillnet fishing in the area of high interactions, combined with additional observer coverage outside the closed area and the further refinement of voluntary industry measures to operate outside the closed area.

Section 41A(2) states that AFMA must consult with the management advisory committee for the fishery before a closure Direction is made. AFMA consulted with SEMAC during 8-13 March 2012 about the continuation of dolphin mitigation measures, specifically about a closure Direction extending to the same end date as now proposed. SEMAC was unable to provide consensus support for the continuation of the prohibition of gillnet fishing in the area of high interactions. The Committee Chair, AFMA, Scientific, Conservation members and one

Industry member supported the continuation of the closure. Two other industry members supported the closure on the basis that dolphin mitigation research would take place. The Recreational fishing member did not support the closure while remaining members did not supply comment. Members in support of the proposal acknowledged that the closure was required and was being made in accordance with AFMA's objectives. Members in support stated that no new measures or approaches have been implemented which could reliably safeguard against more dolphin interactions with gillnets.

There have been no changes to the proposed approach since the consultation in March 2012, that is:

- dolphin closure is still to be extended
- dolphin observation zone is to be extended
- temporary hooks permits will still available to affected operators
- the proposed end date of the Direction remains 23 September 2013.

AFMA will continue to consult with SEMAC and SharkRAG, industry members and other stakeholders, in developing long term strategies to achieve the objectives of these measures.

## **Conclusion**

AFMA considers that the options described above of doing nothing, self-regulation and co-regulation would not be effective in responding to the high rates of dolphin interaction in certain parts of the GHAT. The impact analysis indicates that the appropriate and proportionate response to prevent further interactions with dolphins while fishing with gillnets in the specified area of the GHAT is to take regulatory measures consisting of:

- a closure Direction which closes the current Dolphin Gillnet Closure for a further period of 18 months;
- direct that concession holders adhere to 100 per cent monitoring through either onboard observer coverage or EMS in the Dolphin Observation Zone; and
- grant temporary fishing permits under s32 of the FM Act to eligible affected concession holders allowing the use of manual hook methods .

Consistent with the principles of ecologically sustainable development (which include the exercise of the precautionary principle) AFMA must take action to ensure the measures currently in place to minimise interactions with dolphins are continued.

There will be increased costs to operators should they wish to fish by gillnet method in the area of waters requiring mandatory observer/electronic monitoring. However, affected concession holders will benefit economically from being allowed to use hooks in the closed area under temporary fishing permits, a method they are otherwise not entitled to deploy. Affected concession holders also have a large proportion of the fishery in which they may fish by gillnets outside of the area of the closure Direction.

The costs and benefits of the proposed regulatory measures are more favourable to industry when compared to other options such as shutting the entire GHAT sector to gillnetting by a closure Direction or not taking any action and potentially losing environmental accreditations

for the SESSF as a whole and/or having the current management arrangements being subject to legal challenge.

## **Implementation and Review**

### *Timing of measures*

AFMA needs to urgently address interactions with dolphins in the GHAT sector of the SESSF. AFMA considers that, given the continuation of conditions that gave rise to an increase in reports of dolphin interactions, dolphin mortalities would continue in the Dolphin Gillnet Closure if it was reopened to gillnetting.

The Second Dolphin Temporary Order expires on 23 September 2012 at which time the measures contained therein to minimise interactions with dolphins cease to have effect.

It is proposed that new arrangements be put in place upon expiry of the Second Dolphin Temporary Order. The registration of a closure Direction, should that option be decided, will take effect on 23 September 2012 and remain in effect for a period of 18 months.

Persons who meet eligibility criteria will be invited to apply for a temporary fishing permit allowing the use of hooks. These permits will be granted for a period of 18 months.

The impacts of the closure Direction, should it proceed, will be reviewed before the Direction expires. The major objective of the Direction will be to prevent dolphin interactions with gillnets. This will be constantly monitored by AFMA.

The period of the Direction and temporary fishing permits will allow AFMA and the fishing industry to consider the longer term use of gillnets in the fishery and to gather information on alternative fishing methods.

The proposed measures will be reviewed as part of a recently commenced project to develop future management options for the GHAT. Industry members, advisory groups and other stakeholders are contributing to the project which aims to develop longer term management measures for the GHAT, primarily in response to changes to the fishery because of interactions with marine mammals including dolphins. It is anticipated that the initial outcomes of this project will be available in early 2013 and changes to management arrangements including the proposed regulatory measures could be implemented during 2013. These changes may involve greater flexibility for gillnet operators to use hooks in order to reduce the risk of interactions with dolphins.

The current trial of auto-longline fishing is scheduled for completion in March 2013. This project will assess the potential for gillnet operators to use hook methods in order to reduce bycatch of marine mammals. AFMA is also supportive of appropriate research into bycatch reduction for gillnet fishing including the use of 'pinger' deterrence devices which emit high pitch sounds to repel dolphins. AFMA will support the trial of 'pingers' in gillnets which may be carried out under a Scientific Permit granted under Section 33 of the FM Act. The results of these projects may trigger a review of the proposed measures including the potential to open the Dolphin Gillnet Closure to fishing under certain conditions.

Any conversion of the current fishery in the long term to a hook fishery is complex, with potential impacts on other species of conservation concern, and changes in assets values and fishing efficiency.

If the measures currently in place are extended, AFMA will gain valuable data and knowledge that will help to determine the major factors that contribute to interactions with dolphins and other protected species especially through continued observation measures. Continued high levels of observer coverage will assist in this respect. Effort shift may show that spatial factors rather than only gear types used are a larger factor than first thought ie. dolphins may be caught in other areas of the fishery by gillnets.

Any change in the short or medium term regarding fishing methods in the GHAT sector of the SESSF will be reflected in the closure Direction should one be registered. AFMA has the power under section 41A of the FM Act to amend or revoke a Direction. If future decisions regarding fishing methods allowable in the GHAT are made which contradict clauses of a registered closure Direction, that Direction will be amended or revoked.

To better understand dolphins occurring in the GHAT, AFMA has recently facilitated independent analysis of electronic monitoring camera footage to identify dolphin species that have been caught in fishing gear. AFMA has also recently supported a research proposal to better understand dolphin populations in the waters off South Australia, including through the use of genetic sampling.

AMFA has received two industry led dolphin mitigation research project applications in recent months. Due to the protections afforded to Dolphins under the EPBC Act, AFMA is seeking input from other Australian Government departments before undertaking these projects within the current dolphin closure area. If approved, AFMA will permit research to be conducted on gillnet vessels within the closure area under scientific permits. In addition AFMA has formed and Industry working group which will investigate alternative management responses to mitigate dolphin interactions in the fishery.