

1. The use of market-based instruments in protecting South Australia's marine protected areas

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1. INTRODUCTION

In October 2014, a system of sanctuary zones came into operation in the Australian state of South Australia. The coming into force of these sanctuary zones was the last step in a process designed to protect South Australia's unique marine diversity which began some 15 years previously.¹

These sanctuary zones are 'no fishing' zones and are part of the marine protected areas of the state.² They number 83 and cover approximately 6% of South Australia's marine area. Marine protected areas cover approximately 44% of the state's marine area. The non-sanctuary zoned marine protected areas, which cover 38% of the state's marine areas, allow a variety of fishing (both commercial and recreational) and other recreational activities.³

The designation of these 83 sanctuary zones has caused much concern, anxiety and distress to many of South Australia's fishing communities.⁴ This paper focuses on the conflict with the commercial fishers and the use of market mechanisms to try to come to a resolution of this conflict. It aims to evaluate the effectiveness of a particular market-based instrument to deal with the concerns of these stakeholders and analyse the outcomes in the establishment and zoning of South Australia's Marine Parks.

Section 2 will look at the background to the protection of marine diversity in South Australia (SA). It will describe the uniqueness of the marine diversity of SA and the process embarked on for its protection. Section 3 will set out the concerns of the fishing industry and what efforts were involved in trying to ameliorate these concerns. Section 4 will evaluate the use of the market based instruments used in this process and Section 5 will discuss the resolution using this mechanism and what lessons can be used and applied in other jurisdictions.

2. BACKGROUND

a. SA's Unique Marine Environment

South Australia's marine environment covers approximately 60,000 square kilometres including 5000 kilometres of coastline.⁵ Its waters are home to some of the most unique marine diversity in the world. For example, these waters hold more than 720 fish species, including tropical and cold water species; over 1200 species of marine algae; and approximately 80% of the world's total population of Australian sea lions.⁶ It hosts the world's largest known breeding aggregation of giant cuttlefish. Its state marine emblem is the amazing Leafy Sea Dragon, found nowhere else in the world. In fact, approximately 80% of known species are endemic;⁷ in comparison, the Great Barrier Reef is home to 15–20% endemic species.⁸

This uniqueness of the SA marine environment is the result of three main conditions:

- (1) A long period of geographic isolation, resulting from isolating ocean currents. It is in the middle of the longest south-facing coastline in the world and the ocean currents have isolated marine life in SA for a long period of time.⁹ This contrasts with the Great Barrier Reef, which shares most of its marine life with the Pacific Ocean.
- (2) Exposure to severe climatic conditions, leading to more extreme temperatures.¹⁰ This has resulted in plants and animals evolving to survive in these harsh conditions and living nowhere else in the world.
- (3) Living in one of the most nutrient poor parts of the global marine environment.¹¹ This leads to greater species diversity, as life has to evolve at a much greater rate to cope with the low nutrient conditions.

In addition to these conditions, South Australia has 150 offshore islands with pristine ecosystems. Another unique element of the South Australian environment is that it contains two of only three inverse estuaries in the world, the other one being in California. In these two estuaries, Spencer Gulf and Gulf St Vincent, there is no freshwater input at the top of each gulf, which means that they are much more saline at their tips than at their open ends. This results in a unique aquaculture environment.¹²

b. Legislative Background to Protecting SA's Marine Environment

Internationally marine parks are recognised as a key tool in protecting and conserving habitats and marine biological diversity.¹³ Much like land-based national parks, marine parks play a central role in maintaining

ecological processes, protecting areas of natural and cultural heritage, and assisting in adapting to the impacts of climate change.¹⁴ South Australia has a chequered history in protecting marine diversity, even though its marine and estuarine waters represent some of the most unique and biologically diverse waters in the world.¹⁵

Historically, marine areas in South Australia were protected by the establishment of Aquatic Reserves under the *Fisheries Act 1971 (SA)* (now the *Fisheries Management Act 2007 (SA)*). This Act provided regulations to restrict and regulate all activities within these Aquatic Reserves.

In 1991, the Commonwealth government announced a 10 year marine conservation programme to ensure the conservation and sustainable use of Australia's marine and estuarine environments, by adopting a biogeographic/ecosystem approach.¹⁶ The programme was endorsed by states and territories under the Inter-governmental Agreement.¹⁷ However, this approach was not adopted by SA. Instead, SA identified and selected aquatic reserves based on 'perceived social benefits', rather than on an ecosystem approach. This proved to be detrimental to marine biodiversity as many coastal fish and crustacean species reached the 'fully exploited' status.¹⁸

In 2007, the *Marine Parks Bill* was passed and became law. The aim of the Act is to protect and conserve marine biological diversity and marine habitats by providing for the management of a comprehensive, adequate and representative (CAR) network of marine parks. Through this process, the focus has shifted from fisheries management to conservation.

c. Involving Relevant Stakeholders in the Process

In 2009, South Australia proclaimed a network of 19 Marine Parks, covering 44% of South Australia's waters. Under the *Marine Parks Act 2007 (SA)*, there is a requirement for community participation in the declaration (outer boundaries process) and management (zoning) of the marine parks.¹⁹

The outer-boundaries process attracted more than 2000 submissions, but the zoning process proved more controversial, particularly with respect to the establishment of the 83 sanctuary zones in which fishing has been banned. This zoning process took 5 years and attracted more than 8000 submissions through an extensive consultation process.²⁰ In 2012, Marine Park management plans and zoning regulations were put into place, declaring 83 sanctuary zones to come into force on 1 October 2014.

Community participation was embedded into the process on the basis that the success of the marine parks would ultimately depend on stewardship by the community. If the government could not get the support of

the community at large, then the marine parks would fail. Gaining this support was a challenging task as there were a number of stakeholder groups holding conflicting views. These groups included commercial fishers, recreational fishers, tourism operators, environmental groups, indigenous groups and rural communities. The commercial fishers and those in the surrounding rural regions feared job losses, loss of livelihoods and loss of traditions.²¹ The recreational fishers were divided on the issue. Some argued they had a right to fish in the ocean, whereas others understood the importance of preserving the marine life for future generations. In addition to the interest of the fishers, environmental groups and indigenous groups were interested in preservation and concern for future generations.

In order to gain the support of the community, the relevant government department went beyond the requirements under the *Marine Parks Act 2007* (SA) and decided that best practice would be to also involve the public in the zoning process. The Act only required public consultation in the designation of the boundaries of the Marine Parks, not the zoning of these parks. To this end, it embarked on the establishment of 13 Marine Park Local Advisory Groups (MPLAGs), with the intention of facilitating a more robust consultation process. The selection of the members of the MPLAGs was on a volunteer basis and some of these groups ended up with an overrepresentation of certain stakeholder groups, leading to some conflict throughout the process.²²

One of the goals of the process was that the zoning aimed to minimise the economic impacts and/or displacement of existing fishing activities, so that it would have less than a 5% economic impact.²³ To help ensure this result, a tracking tool called SAMPIT was employed. This tool was deployed to each of the MPLAGs and members of commercial and recreational stakeholder groups were asked to plot, through SAMPIT, their high-value fishing areas.²⁴ The intention of the government in using this tool was to ensure the least possible overlap between the high-value fishing areas and the establishment of the sanctuary zones. The resulting economic impact was about 1.7% of the state's commercial fishing effort, which was significantly lower than the target of less than a 5% economic impact.²⁵

The consultation process has been regarded as a success, on the basis of a number of indicators.²⁶ The fact that the department went beyond the legislative requirement by setting up 13 MPLAGs to establish the management and zoning plans, the fact that more than 10,000 submissions were received during the process and the fact that 19 marine parks were established by the process are all indicators of an effective participation process. However, there were some limitations in the process.

The two main areas of conflict were in regards to the conservation groups, who withdrew from the MPLAG process owing to the aggressive behaviour of other stakeholders, and the conflict with the commercial fishers.²⁷ The conservation groups were brought back into the process when the department called a two day meeting of all the peak stakeholder groups to look at the suggested zonings from the MPLAGs and they then issued a draft zoning and management plan for wider public consultation.²⁸ This process caused concern for members of the MPLAGs, who thought that their final advice to the government would be 'immediately rubber stamped'.²⁹ The presiding member of the Marine Parks Council, Professor Rob Lewis, believed the government could have better managed the expectations of the MPLAGs, explaining that, in addition to their advice, other factors such as the science and the socio-economics also need to be considered.³⁰

The conflict with the commercial fishers is discussed in the remainder of this paper, together with the market mechanisms used to try to resolve this particular conflict.

3. CONFLICT WITH THE COMMERCIAL FISHERS

There were many conflicting values inherent in applying an effective community consultation process in the zoning of Marine Park Areas in SA. Environmental, economic and social values all needed to be considered in this process. Exacerbating this is the fact that South Australians view the marine environment in a number of different ways. Some see it as providing a livelihood and source of income (commercial fishers, industries using shipping, tourist operators, mineral resource companies and aquaculture). Others see it as a source of pleasure and recreational opportunities (boat owners, recreational fishers, divers, sporting groups, holidaymakers). It is also seen as a precious and fragile environment to be protected and conserved. The ways in which people behave in our marine or coastal environments are driven by these views.

Various issues have been identified in the past identification and management of marine protected areas which illustrate these conflicting values. These include over-fishing, disturbed breeding grounds, the need to protect older fish with a high reproduction rate, the impact that marine protected areas have on the fishing industry with smaller areas of water to exploit, resulting in a smaller catch, the loss of value of fishing licences and issues of tourism.³¹ Many of the communities also depend on the fishing industry for employment. It is their way of life and it holds their traditional values. There is also the associated fear of job losses and unemployment in the

regions. These multiple potential areas of conflict have been described as a 'convergence of conflict',³² which needs to be managed. However, there are enormous difficulties in reconciling the competing concerns of the environment, the sustainability of the fishing sector of the economy, the effects on recreational fishers and the real or feared effects on livelihoods and communities.

At the end of the consultation process, 83 sanctuary zones were established and all of the stakeholders agreed that the results were something they could live with.³³ The commercial fishing industry had argued that displacement of their livelihoods could be avoided by pragmatic zoning and that any distribution effort needed to take place without impacting ecological or economic sustainability of the fishery.

In the end, the economic impact on the commercial fishing industry was less than 1.7%³⁴ and the government committed to buying back commercial fishing entitlements to offset this impact.

4. USE OF MARKET-BASED INSTRUMENTS AND OTHER TOOLS

a. The Impact of Sanctuary Zones on Commercial Fishing

The value of South Australia's commercial fishing industry is around \$400 million,³⁵ and this industry is managed through a series of fisheries management plans under the *Fisheries Management Act 2007* (SA). For example, the management plan for the SA Commercial Abalone Fishery is a 10 year plan running from 1 September 2012,³⁶ and the management plan for the Northern Zone Rock Lobster Fishery is a five year plan running from 14 November 2014.³⁷ The designation of SA's marine parks can be seen as a way to rebuild the sustainability of the fishing industry.³⁸ In principle, this process needs to ensure that the stakeholders who bear the cost of the rebuilding process will receive some of the benefits and that they recognise and value the long-term benefits of this process.³⁹

It has been recognised that the zoning in the marine parks will have some displacement impact on the commercial fishing effort. If this displacement cannot be redistributed, the government will have to remove this effort to ensure sustainability of the impacted fishing stock, in line with the objectives under the *Marine Parks Act 2007* (SA).⁴⁰ The SA government set out a four step process, with compulsory acquisition as a last resort.⁴¹

These four steps were:

- (1) avoid displacement by pragmatic zoning;
- (2) redistribute effort only where possible without impacting ecological or economic sustainability of the fishery;
- (3) market-based buy-back of sufficient effort to avoid impact on the fishery;
- (4) compulsory acquisition as a last resort option.

The view of the government was to manage the commercial catch/effort reduction entirely through a voluntary, market-based buy-back of sufficient effort to avoid negative impacts on the fishery. The programme was conducted to mitigate the risk to fish stocks associated with displaced catch and effort on areas of the fishery that remain open to fishing.⁴² If the voluntary programme was not successful, the last resort option would be compulsory acquisition under the *Marine Parks Act 2007*.⁴³ The Voluntary Catch/Effort Reduction Programme, administered by Primary Industries and Regions SA (PIRSA), began in July 2013 to allow for enough time before the no fishing zones came into operation on 1 October 2014.

The impacts vary depending on the nature of the fishery itself. For example, the impacts of specific controls on fishing for migratory or pelagic species (sardines) are very different to those on fishing for sedentary species (abalone).⁴⁴

The following fisheries were examined to see what impact these sanctuary zones would have on their industry—sardine, prawn, abalone, rock lobster, marine scalefish and blue crab fisheries. If the economic impact was greater than the agreed 5%, a buy-back mechanism would be instituted.

The data on sardines showed that the average impact of not harvesting in the designated sanctuary zones from 2000 to 2011 was 1.93%, varying from 0% in 2000 to 11.8% in 2011.⁴⁵ PIRSA concluded that this estimated displacement could be sustainably distributed and so no buy-backs were instituted within the sardine industry.⁴⁶ There was similar data with prawns and with the blue crab fishery. The data in relation to prawns found that there was a 0.09% impact from Spencer Gulf and 0.56% from Gulf St Vincent, and that this estimated displacement could be sustainably redistributed.⁴⁷

The abalone, rock lobster, marine scalefish fisheries and charter boat fishery all found themselves heavily impacted by the establishment of the sanctuary zones. The average historical catch of abalone displaced over the past 21 years in the sanctuary zones amounts to more than 8% with percentages varying across the different zones and between the different varieties (blacklip and greenlip abalone). To better manage the buy-back process, regions A and B in the Western Zone abalone fishery

were amalgamated into a single region.⁴⁸ This was to ensure that, after the buy-back, the remaining abalone fisheries were able to fulfil their quotas, by having a larger catch region.

For the rock lobster fisheries, the average historical catch displaced was greater than 6%, with the buy-back target being approximately 260 pots.⁴⁹

The marine scalefish fishery is licensed on the basis of fishing days and it covers fishing by handline, longline, haul net and other gear. The total average historical catch displaced by the sanctuary zones is greater than 5% so the buy-backs for each of these fishing methods are 863 handline fishing days, 225 longline fishing days, 701 haul net fishing days and 672 other fishing days.⁵⁰ The calculations have been based on the fishery returns of the licence holders for the last five years, with an average of the best four out of the last five.⁵¹ Government policy is that catch history does not transfer with a licence and that only current holders come within this process. For those holding a licence for less than five years, the lowest catch year will be eliminated and the remaining years averaged.

Charter boat fishing is a major taker of fish in South Australian waters. It is a commercial platform for recreational fishing and is considered as a commercial operation rather than being commercial fishers. Operators are not allowed to sell or trade the fish caught. Their income comes from providing a service to their clients. In 2014/2015, there were 105 licences given, with 61 of these being active in the industry.⁵² The five-year average customer trip days from 2007/2008 to 2012/2013 was 21,807⁵³ and the number of customer days overlapping with the sanctuary zones was 1136 customer days.⁵⁴ As the average historical effort displaced was more than 5%, the buy-back programme target was licences amounting to 1136 customer days.

b. The Buy-back Process

The buy-backs for these fisheries matched the average historical catch displaced by the establishment of the sanctuary zones. The question then becomes how these buy-back targets will be implemented. The process was for the government of South Australia to seek the voluntary surrender of relevant fishing licences or licence entitlements. The alternative to a voluntary buy-back scheme was compulsory acquisition under the *Marine Parks Act 2007* (SA).⁵⁵ After the call for offers to voluntarily surrender their entitlements,⁵⁶ the Minister for Agriculture, Food and Fisheries or a nominated delegate considered each offer and make a decision to accept or reject the offer. Licence holders had the right to review this decision within 30 days of the decision.⁵⁷

The criteria against which the offers to surrender were assessed were:

- (a) whether the offer would reduce catch and effort from the fishery and/or sanctuary zones;
- (b) whether the offer reflected an effective use of public money with appropriate monetary consideration relevant to recent historic transactions and current open market prices; and
- (c) minimisation of impacts on future fisheries management arrangements.⁵⁸

The buy-back process was informed by independent economic data for each of the impacted fisheries.⁵⁹ These included the Northern and Southern Zone Rock Lobster, Abalone, Charter Boat, and Marine Scale fisheries. For each fishery, the indicators reported annually include the gross value of production, cost of management, financial performance, the determination of major cost increases, regional economic impacts and economic rent. Each particular fishery had different requirements but there were some common elements. There was a preference to buy back the quotas in whole licences. This preference for whole licence buy-back meant that, in some instances, there was quota in excess of the reduction target. The aim of the government was to extinguish whole licences, so where there was excess quota, the seller of the licence could either transfer this excess quota to other fishers or, if the whole licence was surrendered to the government, the government would find a way of equitably returning the quota to the fishery.

With abalone and rock lobster, the buy-back process would not consider an application to surrender if that application would result in the licence holder breaching the minimum quota/pot holding.⁶⁰ With marine scale-fish, the historical catch of the different species were taken into account.

5. RESOLUTION

The economic impact of the establishment of the sanctuary zones came in at around 1.7%, which was substantially less than the 5% target. Even so, the commercial fishers had some concerns with the buy-backs, with one of their main concerns being the possibility that, with fewer licensees, the management costs would increase.⁶¹ This did not occur with the government reducing the management fees of the remaining licensees.⁶²

A number of different mechanisms have been used to manage fisheries in South Australia, over the past 60 years. Taking the Northern Zone Rock Lobster Fishery as an example, as early as 1966, a winter closure was introduced in order to protect spawning females and conserve egg production.⁶³ In 1967, limits were placed on pot and boat numbers in the fishery. In 1968

in recognition of the significant differences in biological, geological and ecological characteristics between the eastern and western borders of the South Australian coast, the South Australian Rock Lobster Fishery was separated into the Northern and Southern Zones.⁶⁴ Table 1.1 summarises the major mechanisms used in the commercial lobster industry to manage the sustainability of the industry.⁶⁵

A review of the fishery undertaken by government managers and scientists in 1992 indicated that catches of more than 1100 and 1200 tonnes in 1990 and 1991, respectively, were unsustainable in the long term.⁶⁶ This review recommended that effort levels should be reduced to accommodate a catch closer to 850 tonnes. Following this review, government managers and scientists advocated strongly for the introduction of a quota management system in both the Northern Zone and Southern Zone Rock Lobster fisheries to ensure the long-term sustainability and profitability of these fisheries. As a result of this review process, a quota management system was introduced in the Southern Zone Rock Lobster Fishery in 1993 and, in the Northern Zone, 10 years later in 2003.

In summary, between 1966 and 2003, the northern rock lobster fishery was managed through a series of mechanisms, which included closures, limits on pots and boat numbers and increases in the allowable size. In 2003, a quota was introduced with a total allowable commercial catch (TACC) of 625 tonnes. Since the introduction of the quota, the first time the TACC was fully taken was in 2009, at 310 tonnes. This TACC remained for the next two years, to 2012, when it was increased to 345 tonnes (a lot less than the 1200 tonnes in 1991).

In 2013, under the South Australian government's Commercial Fisheries Voluntary Catch/Effort Reduction Programme, four licences from the Northern Zone Rock Lobster Fishery were surrendered voluntarily.⁶⁷

In April 2015, the state's rock lobster fishery launched a temporal and spatial management study to try to maintain this industry in light of climate change impacts and the restrictions placed on it by the establishment of the sanctuary zones. The aim of this study is to increase profitability, while maintaining a strong focus on sustainable fishing practices. This results in fishing less but at a time when prices are at a premium, so as to maintain the profitability and sustainability of the fishery.⁶⁸ This is a positive outcome coming arguably from the establishment of the sanctuary zones, which made the industry look at coming to a win-win solution from what looked like a losing situation for the fishery and one of concern to the commercial fishers.

The importance of such a project is that it emphasises the need for a robust monitoring programme to ensure that the smaller catchment areas for rock lobsters do not strain these new areas, and to monitor the

Table 1.1 Mechanisms used in the commercial lobster industry to manage the sustainability of the industry

Year	Major management milestones
1978	First major review of fishery
1985	10% pot reduction Upper limits of pots increased from 60 to 65
1992	10% pot reduction Upper limits of pots decreased from 65 to 60 Second major review of fishery
1993	One week time closure
1994	Another one week time closure Size limit increased from 98.5 to 102 mm
1995	Another one week time closure
1997	First management plan for the fisheries published Flexible time closure system introduced
1999	Another 3 days of time closure
2000	Size limit increased from 102 to 105 mm
2001	7% effort reduction introduced (14 days of further time closures)
2002	8% effort reduction introduced (~16 days of further time closures) Review of management and scientific programme undertaken Upper limit of pots increased from 60 to 70
2003	Quota system introduced with a TACC (total allowable commercial catch) of 625 tonnes VMS (Vessel Monitoring System), sealed bins and prior reporting introduced Escape gaps introduced
2004	TACC reduced from 625 to 520 tonnes
2005	Upper limit of pots increased from 70 to 100 Lower pot limit decreased from 25 to 20 pots
2007	Second Management Plan published
2008	TACC reduced to 470 tonnes
2009	TACC reduced to 310 tonnes TACC fully taken for the first time since the introduction of quota in 2003
2010	Harvest strategy reviewed and implemented
2011	TACC maintained at 310 tonnes
2012	TACC increased to 345 tonnes consistent with the 2011 harvest strategy
2013	TACC maintained at 345 tonnes Introduction of sea lion exclusion devices for pots in water less than 100 m Four licences surrendered through a Marine Parks: Commercial Fisheries Voluntary Catch/Effort Reduction Programme

sanctuary zones. The rock lobster fishery is working closely on this project with PIRSA and SARDI,⁶⁹ and has attracted funding from Fisheries Research Development Corporation.⁷⁰

The spokesman for the abalone industry is also pleased that the voluntary buy-back was successful. As Abalone Industry Association of South Australia President, Jonas Woolford said, 'If the voluntary process hadn't worked, it would have triggered the Marine Parks Act legislation, and no-one wanted that'.⁷¹ The amounts that licences were bought back for were confidential but the Director of Fisheries said that abalone licences would be worth \$5–7 million.⁷²

All in all, the voluntary buy-backs were regarded as a successful method to deal with the displaced catch resulting from the establishment of the sanctuary zones. A total of 115 applications⁷³ were received and the total payout was around \$20 million. This included four lobster licences from the northern rock lobster fishery⁷⁴ and one licence from the southern rock lobster fishery.⁷⁵

6. CONCLUSION

The process of declaring South Australia's Marine Parks and determining their zoning took a period of more than 15 years and the consultation process received more than 10,000 submissions. As people's livelihoods were going to be impacted, there was always the expectation that there would be some conflict in the process.

However, it became clear that all affected stakeholder groups could live with the outcome. For example, the peak stakeholder group for recreational fishers, RecFish, told the Parliamentary inquiry into the Marine Parks that they had lost some access to fisheries but had gained some protection for nursery and spawning areas, and noted, 'We didn't get everything we wanted, but life is like that in the real world',⁷⁶ and that they believed the zones captured the most important breeding areas.⁷⁷

The Abalone Industry Association of SA were of the view that the government's conservation and ecological aims for the marine environment could be achieved 'without impacting on the sustainability of South Australia's most successful abalone fishery'⁷⁸ and the Conservation Council told the inquiry that they did not get all that they wanted, but 'in the end we got a great first step on marine parks, management plants and sanctuary zones'.⁷⁹

A number of tools were used to try to minimise the pain particularly to the commercial fishers whose livelihoods were going to be impacted by the declaration of no-fishing sanctuary zones. Taking away these areas of

fishing would increase the pressure on the areas remaining. To alleviate this pressure on the fish, there were four possible options—the least palatable was for the government to compulsorily acquire some of the fishing licences.

The preferred option was the voluntary market-based buy-back through the SA Marine Parks' voluntary catch/effort reduction programme for commercial fisheries.⁸⁰ The programme was conducted to mitigate the risk to fish stocks associated with displaced catch and effort on areas of the fishery that remain open to fishing,⁸¹ and as Jonas Woolford said, 'If the voluntary process hadn't worked, it would have triggered the Marine Parks Act legislation, and no-one wanted that'.⁸²

This research has identified two important elements needed to ensure the success of a market-based approach to dealing with the impacts of natural resource protection through the establishment of Marine Protected areas. The first of these is to ensure trust in the process. Two principles can help build trust. The first principle is to recognise the value of local knowledge, and capture this local knowledge. A tool such as SAMPIT can capture this knowledge. The second principle is to ensure a robust and long-term monitoring programme, such as the rock lobster fishery's temporal and spatial management study. The second element needed is to have detailed fishing data to be able to determine the economic impact of the displacement.

The impact of this voluntary market-based buy-back programme will be closely monitored by PIRSA. At the present time, the state's rock lobster fishery's temporal and spatial management study⁸³ is examining the impact of climate change, and the restrictions following the establishment of the sanctuary zones, including the buy-backs. This is a crucial first step in the monitoring process and is most likely to be the model used for all the other fisheries impacted by the buy-back.

NOTES

1. Karen Bubna-Litic, Emma Goreham, Taylor Pope, Kvitka Becker and Alex Craig (2015) 'The effectiveness of the participation principle in protecting Marine Diversity in South Australia', in IUCN Law For Sustainability, p.6, <http://www.lawforsustainability.org/case-studies/effectiveness-participation-principle-protecting-marine-diversity-south-australia>.
2. National Parks SA, <http://www.environment.sa.gov.au/marineparks/About/zones>.
3. These include general managed use zones and habitat protection zones, *ibid*.
4. Karen Bubna-Litic et al., as above, note 1.
5. Geoscience Australia (2010) 'Coastline lengths, Geoscience Australia, Canberra', <http://www.ga.gov.au/scientific-topics/national-location-information/dimensions/border-lengths#heading-1>.

6. SA Department of Environment, Water and Natural Resources, 'South Australia's Marine Park Network, Explanatory Document', November 2012, p. 4. See also K. Edyvane (1999) 'Conserving Marine Biodiversity in South Australia—Part 2—Identification of areas of high conservation value in South Australia, SARDI and PIRSA, Adelaide, Australia', http://www.ffc.org.au/FFC_files/MPA%20refs/SARDI%20reports%20and%20maps/marine_biodiversity_part2_full_version.pdf.
7. Department for Environment and Heritage (2009) *A Technical Report on the Outer Boundaries of South Australia's Marine Parks Network*. Department for Environment and Heritage, South Australia, p. 25.
8. Ibid.
9. South Australia Government, Department of Marine Parks (2010) 'The Natural Values of South Australia's Marine Environment'.
10. National Climate Change Adaptation Research Facility (2011) 'Climate Change and the Marine Environment: South Australia'. University of Tasmania, Fact Sheet no. 4, http://arnmbr.org/content/images/uploads/Information_Sheet_4.pdf.
11. Department for Environment and Heritage (2009) *A Technical Report on the Outer Boundaries of South Australia's Marine Parks Network*. Department for Environment and Heritage, South Australia, p. 21.
12. Ibid., p. 34.
13. Commonwealth Department of Environment and Heritage (2003) 'The Benefits of Marine Protected Areas', <https://www.environment.gov.au/system/files/resources/5eaad4f9-e8e0-45d1-b889-83648c7b2ceb/files/benefits-mpas.pdf>.
14. Ibid.
15. K.S. Edyvane, *Conserving Marine Biodiversity in South Australia—Part 1—Background, Status and Review of Approach to Marine Biodiversity Conservation in South Australia* (May 1999), SARDI Aquatic Environment, http://www.sardi.sa.gov.au/_data/assets/pdf_file/0004/94594/marine_biodiversity_part1_full_version.pdf.
16. J.L. Baker (2004) *Towards a System of Ecologically Representative Marine Protected Areas in South Australian Marine Bioregions—Technical Report*. Prepared for Coast and Marine Conservation Branch, Department for Environment and Heritage, South Australia.
17. Intergovernmental Agreement on the Environment (IGAE), <https://www.environment.gov.au/about-us/esd/publications/intergovernmental-agreement>.
18. Karen Bubna-Litic et al., as above, note 1, p. 7.
19. Sections 8, 10, 22 and 29.
20. Karen Bubna-Litic et al., as above, note 1, p. 11.
21. Ibid., p. 7.
22. For a full evaluation of the consultation process, see Karen Bubna-Litic, Emma Goreham, Taylor Pope, Kvitka Becker and Alex Craig (2015) 'The effectiveness of the participation principle in protecting Marine Diversity in South Australia', in IUCN Law For Sustainability, <http://www.lawforsustainability.org/case-studies/effectiveness-participation-principle-protecting-marine-diversity-south-australia>.
23. Parliament of South Australia, Final Report of the Select Committee on Marine Parks in South Australia, tabled in the Legislative Council on 13 November 2013, p. 8.
24. The final SAMPIT charts for each of the Marine Park Areas can be found at the Marine Parks website, http://www.environment.sa.gov.au/marineparks/About/history/Local_Advisory_Groups/LAG_meetings_and_reports.
25. Parliament of South Australia, Final Report of the Select Committee on Marine Parks in South Australia, tabled in the Legislative Council on 13 November 2013, p. 8.
26. See Karen Bubna-Litic et al., above, note 1.
27. For a full discussion of the effectiveness of the principle of participation in the management and zoning of SA's Marine Parks process, see Bubna-Litic et al., above, note 1.
28. It was in response to this document that more than 8000 public submissions were received. In response, 50 changes were made to the zonings.

29. Parliament of South Australia, Final Report of the Select Committee on Marine Parks in South Australia, tabled in the Legislative Council on 13 November 2013, p. 11.
30. Ibid.
31. Karen Bubna-Litic et al., as above, note 1.
32. Rob Lewis, 'Convergence of Conflict' letters to the editor, SA Life, February 2014.
33. Parliament of South Australia, Final Report of the Select Committee on Marine Parks in South Australia, tabled in the Legislative Council on 13 November 2013.
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