



**Government of South Australia**

Primary Industries and Regions SA

***AQUACULTURE  
(ZONES—TUMBY BAY)  
POLICY 2012***

**SUMMARY OF  
SUBMISSIONS AND  
RESPONSES**

This document responds to the submissions **in bold** received during the public consultation period for the draft Aquaculture (Zones—Tumby Bay) Policy 2011.

These submissions are grouped into similar areas and defined by the Table of Contents below. Responses to submissions may change as more information becomes available.

By providing balanced and objective information, PIRSA Fisheries and Aquaculture seeks to inform all stakeholders – government, industry and community – about aquaculture in South Australia.

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# 1 ENVIRONMENT

## 1.1 Biomass Limits/Carrying Capacity

- **Environmental Protection Authority monitoring undertaken in 2010 has indicated that Tumby Bay is exhibiting signs of nutrient enrichment and as such the EPA has concerns that nutrients from finfish farms will place further pressure on the ecosystem (including seagrass) within these regions.**
- **All aquaculture zone proposals, lease applications and approval systems should contain sufficient information for assessment of impacts upon the environment and wild fish stocks.**

All aquaculture generates waste material in some form and to some degree. PIRSA Fisheries and Aquaculture invests considerable time and effort to determine how much waste the environment can process without irreversible changes occurring. The South Australian Research and Development Institute (SARDI) has developed carrying capacity models which enable PIRSA Fisheries and Aquaculture to explore different stocking scenarios and assist in determining suitable carrying capacities of species for aquaculture zone policies.

PIRSA Fisheries and Aquaculture has taken a precautionary approach in the development of the proposed Tumby Bay Aquaculture Zone. The *Aquaculture (Zones – Tumby Bay) Policy 2012* sets a biomass limit for the farming of aquatic animals that involve regular feeding (supplementary fed animals). This class of aquaculture allows for any aquatic animal (subject to the approval of the Minister for Agriculture, Food and Fisheries) that can be farmed in a way that involves the input of feed in addition to what is naturally available in the marine environment. This includes (but is not limited to) finfish species such as yellowtail kingfish and mulloway and molluscs such as abalone. It can also include hatchery reared Southern bluefin tuna but not wild-caught tuna.

Organisms that are supplementary fed release nutrients into the environment. Control of the amount of nutrients released into the environment is achieved at the policy level by upper biomass limits for each aquaculture zone, i.e. the maximum biomass of organisms farmed under a particular class of aquaculture at any one time.

PIRSA Fisheries and Aquaculture has participated in and funded carrying capacity investigations for marine aquaculture since 2001 and is continuing this association. Studies have included the Innovative Solutions suite of projects initiated in 2003, with reports such as Tanner *et. al.* (2007) and Loo *et. al.* (2009), and those reports carried out by the Co-operative Research Centre (CRC) for Sustainable Aquaculture of Finfish initiated in 2001 (Fernandes *et. al.*, 2007; Tanner, 2007; Tanner and Volkman, 2009).

PIRSA Fisheries and Aquaculture applies the information gathered from these investigations to determine biomass capacities for aquaculture zones and uses a conservative approach. That is, biomass capacity estimates from the models are used to guide aquaculture zone policy decisions whereby the biomass stated in the aquaculture zone policy is less than that modelled for which no adverse environmental impacts are predicted. Model outcomes can be verified for the lower biomasses through ongoing environmental monitoring program data and the results can be used to support further increases/decreases in prescribed aquaculture zone policy biomass.

PIRSA Fisheries and Aquaculture and SARDI are developing a revised model to determine the broader movements of water flow associated with aquaculture zones and the connectivity of zones that builds on previous research. Outcomes from this research will better inform the need for further environmental

monitoring at the regional scale rather than site specific scale. It should be noted that earlier environmental monitoring programs (mid-1990's) for tuna farms did include water quality monitoring.

## 1.2 Disease

- **Kingfish are known to have parasites. We are now receiving more and more reports of other fish species such as garfish and King George whiting now having worms in their flesh. Only a few years ago these areas did not have any worms in species such as garfish and whiting. Are aquaculture kingfish the cause for this? If so, then what measures have been put in place to rectify this problem?**

Any perceived disease transmission or proliferation issues are assessed by PIRSA Fisheries and Aquaculture staff when licence assessments are undertaken through a semi-quantitative ecologically sustainable development risk assessment. These assessments are justified by relevant literature or factual evidence and must be approved by the Environment Protection Authority (EPA) prior to the approval of the aquaculture licence.

Farmed stocks are free of parasites and disease when transferred from hatcheries into the sea farms. Transfer of disease is more likely to occur from the surrounding marine environment than from farmed to wild fish (Hutson *et. al.*, 2006).

Increased stocking densities can lead to increased transmissions of pathogens. However, PIRSA Fisheries and Aquaculture take a conservative, science-based approach to stocking densities, which are managed through licence conditions. Additionally, PIRSA Fisheries and Aquaculture will be continuing to work with industry to develop refined bio-security programs to minimise the risk of pathogen (viral, bacterial or parasite) introduction or transfer. A component of these programs will be the use of farm- and industry-based surveillance of pathogens.

In addition, aquaculture industries prevent and treat against parasites through husbandry practices, since it is pivotal to their business to provide the market with good quality product, particularly flesh that is parasite free. All species harbor an array of parasites, including King George whiting. Any increase in parasite load (perceived or real) in wild populations may be the result of a number of environmental pressures, including pollution or adverse conditions that lead to immunosuppression in the fish and increased parasite load.

## 1.3 Escapes

- **What has happened to the escapee's register?**
- **We know that hundreds of kingfish have escaped.**

All aquaculture operators in South Australia are required to take all reasonable and practical measures to prevent the escape of farmed animals, and all licence holders must report escapes and have procedures in place to attempt the recapture of any escaped organisms.

Industry has generally taken a proactive approach in minimising the potential of stock escapes, and subsequent reporting when escapes do occur. Escaped fish are expensive for industry with each escape event resulting in a loss of potential income. Some of the measures employed by industry include more regular net maintenance, surveillance and monitoring.

The immediate reporting and prevention of escapes is stipulated in the *Aquaculture Regulations 2005*. PIRSA Fisheries and Aquaculture maintains a public register of reported escapes from June 2001. This register is located on the PIRSA Fisheries and Aquaculture website at:

[http://www.pir.sa.gov.au/aquaculture/monitoring\\_and\\_assessment](http://www.pir.sa.gov.au/aquaculture/monitoring_and_assessment)

Finfish licence holders are required to submit strategies relating to the escape of stock and interactions with seabirds and large marine vertebrates (Regulation 19, *Aquaculture Regulations 2005*). These strategies set out a minimum set of design, construction and operation standards against which activities on licensed sites will be evaluated in the event of an escape. Strategies must also state how often the site is visited and, how often maintenance is carried out on infrastructure to ensure its effectiveness in containing aquaculture stock. Licensees must ensure that activities under the licence conform to the strategy, which must be approved by the Minister for Agriculture, Food and Fisheries. Maximum penalties of \$5,000 may apply should licensed activities be found to not conform.

Escapes generally occur when:

1. Holes are bitten in cages by sharks and other predators: industry is addressing this issue through better net quality, and by removing dead fish quickly from the pens;
2. Net changeover malfunction: the industry has become more experienced in its procedures (ISO 140001) for the changing of nets on farm cages. As a result, there have been no escapes for a long time that can be attributed to net changes;
3. Netting fails due to manufacturing defects: industry is addressing this factor with manufacturers, but also by regularly inspecting the pens so that holes are identified and fixed promptly; and
4. The net is damaged as a result of marine vessels: strong attention is given to the markings of farming structures to avoid damage occurring to nets by marine vessels getting too close to aquaculture cages or accidentally colliding with cages.

Farmed kingfish are first generation offspring of wild-caught broodstock, so their genetic makeup is similar to that of wild kingfish already present in Spencer Gulf.

An independent research program and report, "Discriminating between cultured and wild yellowtail kingfish in South Australia" (Fowler *et. al.*, 2003) indicated that many escaped fish had fed poorly and were malnourished, suggesting that they have poor survival skills in the wild and therefore pose little threat to wild fish stocks.

## 1.4 Finfish Equivalents

- **The Zone Policy Report for the Tumby Bay Aquaculture Zone should provide further information on how finfish biomass equivalents will be calculated for different species of aquatic organisms (e.g. yellowtail kingfish, abalone and propagated Southern bluefin tuna PSBT) and how this relates to the biomass allocation for the zone.**

The term "finfish equivalents" relates to the maximum level of nutrient that will be acceptable in the environment generated from the farming of aquatic animals in a manner that involves regular feeding. As previously mentioned, PIRSA Fisheries and Aquaculture has previously engaged the South Australian Research and Development Institute (SARDI) to look at carrying capacity models for finfish and how these relate to different species farmed in South Australia (i.e. tuna and kingfish). The next stage of this research will be to refine current models for abalone and develop models for other species. As PIRSA Fisheries and Aquaculture sources additional information and data from research

outcomes (such as that mentioned from FRDC 2009/046). For this reason aquaculture zone policies allow for the Minister for Agriculture, Food and Fisheries to increase or decrease biomass limits or to better define them among the species being farmed at any time by notice in the Government Gazette. The current biomass limits set in the *Aquaculture (Zones – Tumby Bay) Policy 2012* are conservative, in relation to the values indicated from the models, and PIRSA Fisheries and Aquaculture considers this conservative approach sensible.

## 1.5 Seagrass

- **It will have a detrimental effect on seagrasses. These aquaculture zones are bad over our pristine area.**

The shallower (less than 15 m), inshore areas adjacent to the proposed Tumby Bay Aquaculture Zone are characterised by seagrass whereas the technical investigation by the South Australian Research and Development Institute (SARDI) (Loo *et. al.*, 2010) indicates the proposed aquaculture zone's benthic environment consists predominantly of bare sandy substrate inhabited by ascidians (*Polycarpa* spp.), sponges and razorfish (*Pinna bicolor*) and avoids areas of seagrass. Although it is highly likely that the proposed Tumby Bay Aquaculture Zone will contain some level of seagrass, as it is common in SA coastal waters, it is PIRSA Fisheries and Aquaculture's preference to not locate aquaculture activity over seagrass. This is managed at the licence assessment stage and not at the aquaculture zone policy development stage. Where there are potential risks to seagrass, PIRSA Fisheries and Aquaculture have, in the past, refused applications, requested a change in location or required modified mooring systems to ensure the impact on the seagrass was minimal.

## 1.6 Sharks/Predator Species

- **Huge risk posed by kingfish farming and tuna in sea-cages to the attraction of Great White Sharks and holding them in the area.**
- **The aquaculture industry should only be expanded into water south and east of the Port Lincoln area well away from general public access and existing populated areas. Sharks and other predators are increasingly being attracted to these areas frequented by locals and tourists alike.**

A workshop discussing shark interactions with aquaculture was held in Adelaide in October 2003. Representatives from industry, aquaculture structure manufacturing companies, the South Australian Government and other State Governments (including environment protection, research, fisheries and aquaculture staff), met to discuss the issues associated with shark interactions in southern Australia and what methods are in place to reduce and deal with these interactions. A discussion paper "Workshop on Shark Interactions with Aquaculture" (Murray-Jones, 2004) recorded the details and outcomes of the discussions held.

Some of the key points from this workshop included:

1. Aquaculture sea cages do not appear to be attracting sharks to the region.
2. The main factor triggering attraction is the presence of freshly dead fish in sea cages – this is a farm husbandry issue.
3. Interactions with bronze whaler sharks are more frequent than with great white sharks. Interactions vary with site, season and operator.
4. More research into shark populations and behaviour (particularly interactions with aquaculture cages) is needed.

Points 1 to 3 are based solely on observations from the finfish aquaculture industry. While point 1 states that aquaculture sea cages do not appear to attract sharks, there is evidence to suggest that berley can have localised effects increasing the detections of white sharks (Bruce *et al.*, 2005). More recent studies have also shown that berleying has changed the behaviour of white sharks (Bruce and Bradford, 2011; Huveneers *et. al.*, unpublished data). The effect of finfish aquaculture and the associated feeds are, however, unknown, and should be investigated further as highlighted in point 4.

Since this workshop, the requirement for all marine based aquaculture licensees to submit and adhere to strategies regarding the interactions of farming operations with seabirds and large marine vertebrates (including sharks) has been introduced to the *Aquaculture Regulations 2005* (Regulations 19 and 20). However, the effects of such strategies and subsequent changes are addressed by PIRSA Fisheries and Aquaculture on a case-by-case basis following any reported interaction and by working with the companies involved to adaptively manage and improve their current practices.

Concurrently, husbandry practices of aquaculture operators have improved as the business of aquaculture has evolved and become more commercially focussed. Some of these husbandry practices include increased frequency of diver removal of dead fish from the sea cages, checking for holes in nets and introducing false bottoms to nets to increase the distance from the bottom of the sea cages to fish outside the sea cages. This decreases the opportunity for predators to get to dead fish in sea cages.

Marine Innovation South Australia (MISA) employs a shark and seal expert to explore South Australia's capacity to research shark and seal behaviour and population movements. This follows on from research work completed by South Australia on seal interactions with finfish farms (Goldsworthy *et. al.*, 2009). PIRSA Fisheries and Aquaculture considers the results of this research when zoning for aquaculture. While it is relevant with respect to reducing interactions between finfish farms and seals it is irrelevant with respect to the potential for interaction between these farms and sharks.

Scientists from SARDI Aquatic Sciences have also analysed the shark commercial catch and effort data in the Spencer Gulf on both an annual and monthly basis. There appears to be a seasonal (i.e. natural) trend in movement of whaler sharks into the gulf and west coast waters during the warmer months of the year. A report by Jones (2008) presents preliminary data on whaler shark abundance by season around a kingfish farm. Additionally, there are some areas where some sharks are already present, for example in Spencer Gulf.

Sharks, if present naturally, may visit aquaculture facilities in that area, however if fish mortalities are routinely removed and consequently no reward is presented to the sharks, it is considered unlikely that sharks will continue to stay in the area. Further investigation is required in order to verify this assertion.

## 1.7 Debris

- **Fishing industry debris on Port Lincoln beaches likely to come to Tumby Bay.**
- **Shore pollution has become a scandal both on the mainland and island coastline. Not every beach needs to be polluted and covered with Aquaculture!**
- **Who is going to control and enforce the regulations – fines for littering – make all rubbish and ropes identifiable – lighting and marking of zones?**
- **Litter, debris and associated rubbish from Aquaculture ventures will only be exacerbated by an Aquaculture Zone following that coastline.**
- **There is no doubt that the increase in aquaculture activity in the area will result in increasing amounts of debris along the adjacent coastline.**

- **Management actions are required to address the impact of increasing amounts of marine debris from aquaculture include formalizing the current industry cleanups so that cleanups are systematically and routinely undertaken with monitoring arrangements to ensure that these are carried out. Continued education and management practice changes to address the debris issues at the source need to be ramped up.**
- **Longer term actions to address the marine debris issues associated with fishing and aquaculture industry include moving toward industry colour coded ropes to identify the sources of debris.**
- **No new aquaculture zones should be approved by PIRSA until all other licensee's clean up their act totally. They are breaking the law and PIRSA are turning a blind eye to the rubbish.**

PIRSA acknowledges that waste and debris from aquaculture farms washing up onto beaches is an issue that occurs. Regulation 9 of the *Aquaculture Regulations 2005* makes it an offence to allow aquaculture waste to be washed off the licence site and not recovered in a timely manner.

Since August 2011 PIRSA has worked closely with the aquaculture industry and community to encourage the licensee's and industry associations to take a more pro-active approach to managing this issue. In February 2012 an industry led 'Adopt a Beach' program was formalised between thirteen aquaculture companies. It was agreed that beach clean ups will be undertaken a minimum of four times a year at thirteen sites covering 155 km of coastline around Port Lincoln in the Lower Spencer Gulf region. A stretch of beach behind Point Bolingbroke will be kept as a control site and monitored and cleared by representatives of the Board. Coastal Cleanup Completion (CCC) forms must be submitted following beach cleanups by the last day of: March, June, September and December. Failure to conduct a cleanup and submit paperwork within two weeks of these dates will result in contractors being employed to undertake the agreed activity, with the respective company being invoiced.

It should be noted that the tuna industry already contract a cleaner to collect rubbish around Port Lincoln, and the finfish industry at Arno Bay and Fitzgerald Bay similarly contract cleaners. In both cases, the types of rubbish collected include a large proportion of waste known not to be aquaculture waste, including: bottles, cans, plastic bags, rubber tyres and plastic containers.

The proposal to have uniquely marked ropes, etc is not considered viable because for any prosecution to be successful the material would need to be traceable to a licensed site (rather than an operator). This would require hundreds of unique combinations of rope to be developed and supplied in relatively small quantities to South Australia's aquaculture operators and significantly increase business costs.

It is a lease condition that a lessee may be required to rehabilitate the site to the Minister for Agriculture, Food and Fisheries' satisfaction, at the cost of the lessee. Therefore, in the event the lease is cancelled or expires, there is a need for lease holders to have access to sufficient resources to rehabilitate a site to its former condition. Consequently, within 5 days of receiving an aquaculture lease, the lessee must either provide a guarantee from its bankers in the amount of \$10,000.00 or contribute to an indemnity scheme established and or nominated by the Minister for Agriculture, Food and Fisheries for the Aquaculture industry. Enforcement of this requirement ensures that the likelihood of the applicant being unable to fund the rehabilitation of the aquaculture site is remote. Moreover, environmental monitoring program requirements set out in the *Aquaculture Regulations 2005* and the licence conditions as part of the granting of the licence are designed to prevent, identify and adaptively manage any adverse environmental degradation before rehabilitation is required.

PIRSA takes compliance issues seriously and undertakes random inspections of sites which include checking waste security and management. To bring particular issues to PIRSA's attention, you can



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report infringements through FISHWATCH, on 1800 065 522, which is a 24 hour telephone service, or through direct dialogue with PIRSA.

## 2 LEGISLATION

### 2.1 Biomass Limits/Carrying Capacity

- **Finfish (kingfish) and propagated tuna are not acceptable.**
- **Finfish, propagated tuna and algal farming totally un-acceptable.**

PIRSA Fisheries and Aquaculture considers that finfish (kingfish) and propagated tuna are acceptable within the proposed aquaculture zone. The *Aquaculture (Zones – Tumby Bay) Policy 2012* sets a biomass limit for the farming of aquatic animals that involves regular feeding (supplementary fed animals). This class of aquaculture allows for any aquatic animal (subject to the approval of the Minister for Agriculture, Food and Fisheries) that can be farmed in a way that involves the input in addition to what is naturally available in the marine environment. This includes (but is not limited to) finfish species such as yellowtail kingfish and mullet; molluscs such as abalone and propagated tuna but not wild-caught tuna.

Organisms that are supplementary fed will release nutrients into the environment. Control of the amount of nutrients released into the environment is achieved at the aquaculture zone policy level by upper biomass limits being set for each aquaculture zone, i.e. the maximum biomass of organisms farmed under a particular class of aquaculture at any one time.

In addition, algal farms that grown in close proximity to fish farms provide great biological filters. It's creating a balanced system for environmental sustainability: the by-products (wastes) from one species (finfish) are recycled to become inputs (fertilizers, food) for another (algae). This provides a cost-effective means of bioremediation to the fish farmer. Furthermore, there is a value-added product at the end of the process.

PIRSA Fisheries and Aquaculture has participated in and directly funded carrying capacity investigations for marine aquaculture since 2001 and is continuing this association. Studies have included the Innovative Solutions suite of projects initiated in 2003, with reports such as Tanner *et. al.* (2007) and Loo *et. al.* (2009), and those reports carried out by the Co-operative Research Centre for Sustainable Aquaculture of Finfish initiated in 2001.

PIRSA Fisheries and Aquaculture applies the information gathered from these investigations to determine biomass capacities for zones and uses a conservative approach. That is, biomass capacity estimates from the models are used to guide aquaculture zone policy decisions whereby the biomass stated in the aquaculture zone policy is less than that modelled for which no adverse environmental impacts are predicted. Model outcomes can be verified for the lower biomasses through ongoing environmental monitoring program data and the results can be used to support further increases/decreases in aquaculture zone biomass.

### 2.2 Legislation

- **Adequate provision of regulations and compliance to ensure Tumby Bay coastline is beautiful and unspoilt.**
- **Objectives and Principles are adequate – but policing is practically non-existent at present.**

PIRSA Fisheries and Aquaculture takes compliance issues seriously and undertakes random inspections of sites which include checking waste security and management. To bring particular issues

to PIRSA Fisheries and Aquaculture's attention, you can report infringements through FISHWATCH on 1800 065 522, which is a 24 hour telephone service, or through direct dialogue with PIRSA Fisheries and Aquaculture.

## 2.3 Zone Policies

- **10, 20 or 30 years for an Aquaculture zone – 5 years would be ample as with a business lease it should be reviewed, with a full review open to the public.**

Aquaculture zone policies are regularly reviewed (and amended where necessary) to address industry and community requirements. The Minister for Agriculture, Food and Fisheries may, by notice in the Gazette, amend an aquaculture zone policy in order to make a change of form but not involving a change in substance. A change in substance requires a formal period of 2 months public consultation in addition to 28 days of parliamentary consultation. This period of two months is commonly used in referring legislated instruments for public comment.

## 2.4 Marine Parks

- **If Marine Parks are used as a bench mark to define quality and pristine water, then Tumby Bay should be a no go zone for Aquaculture. It is already more pristine than Boston Island and surrounds. Any future settlement of Aquaculture zones needs to undergo a benthic performance survey before settlement. This needs to be resurveyed every 12 months as a performance indicator of zone and surrounds.**
- **Of key concern to Conservation Council SA is the overlap between the proposed Tumby Bay aquaculture zone and the boundaries of the Sir Joseph Banks Group Marine Park.**
- **I wish to object to this policy being approved at this time on the grounds that it pre-empts the final Management Plan for the Sir Joseph Banks Group Marine Park.**

Aquaculture operations and Marine Parks are not mutually exclusive. Marine Parks are designed to be 'multi-use', including many activities such as aquaculture, commercial and recreational fishing. Aquaculture activities are allowed to take place in General Managed Use Zones and Habitat Protection Zones or Special Purpose Areas. The government has made a commitment that no existing aquaculture activities will be displaced as a result of a marine park proclamation or future marine park zoning arrangements.

PIRSA Fisheries and Aquaculture continues to work closely with the Department for Environment Water and Natural Resources (DEWNR) when developing aquaculture zone policies and during the Marine Park and marine planning development process. The details of the whole-of-government policy commitments made in relation to the development of Marine Parks and aquaculture in the waters off Tumby Bay, are publicly available (see SA Gov - Appendix B at: <http://www.parliament.sa.gov.au/Committees/Pages/Committees.aspx?CId=263>).

The development of the *Aquaculture (Zones – Tumby Bay) Policy 2012* is consistent with these commitments. At the time the *Aquaculture (Zones – Tumby Bay) Policy 2012* was being drafted there were no Marine Park Management Plans in existence, however, given the whole-of-government policy commitments, the draft Management Plans will be consistent with allowing for an aquaculture zone within its boundaries.

The purpose of zoning for aquaculture is to plan for the future expansion of the industry as well as accommodating existing requirements for area and biomass. Aquaculture provides employment opportunities which have subsequent economic benefits for communities such as provision of

infrastructure and services. To not continue the development of the *Aquaculture (Zones – Tumby Bay) Policy 2012* would decrease the ability for government to promote orderly development of aquaculture in this region and the associated economic benefits it could offer the region.

## 2.5 Prescribed Criteria

- **The Conservation Council questions how this policy intends to comply with the relevant acts and calls for the inclusion of prescribed criteria that will further the objects and objectives of the *Marine Parks Act 2007*.**

Section 11 of the *Aquaculture Act 2001* provides for the nature and content of aquaculture policies. In particular, ss11(3a) provides:

*Insofar as an aquaculture policy applies within a specially protected area or the Murray-Darling Basin, the policy must seek to further the object and objectives of the relevant Act and of any relevant policy or plan prepared under the relevant Act, and in particular, should contain prescribed criteria to this effect.*

The specially protected area in this case is a Marine Park. Given that at the time this document was released there were no regulations, management plans or inner boundaries to the Sir Joseph Banks Marine Park the *Aquaculture (Zones – Tumby Bay) Policy 2012* cannot therefore seek to further the objects and objectives of any policies or plans related to the marine park.

The objects of the *Marine Parks Act 2007* have however been taken into account in the development and design of the *Aquaculture (Zones – Tumby Bay) Policy 2012*. In particular the Policy report shows consideration for environmental, conservation of natural and cultural heritage, public amenity, and protection of marine mammals and is specifically about Ecologically Sustainable Development. PIRSA Fisheries and Aquaculture understands that the absence of prescribed criteria does not invalidate the *Aquaculture (Zones – Tumby Bay) Policy 2012*. In view of the absence of settled Department for Environment, Water and Natural Resources policy arrangements for this marine park, it is PIRSA Fisheries and Aquaculture's position that no prescribed criteria be inserted into the *Aquaculture (Zones – Tumby Bay) Policy 2012* at this time.

## 2.6 Consultation

- **Too large and too much poor management. PIRSA and other parties should listen to local people who have more accurate knowledge of what has gone on at Arno Bay and Whyalla.**

The purpose of the Minister for Agriculture, Food and Fisheries approving the draft *Aquaculture (Zones – Tumby Bay) Policy 2012* is to allow it to be released for two months of formal public consultation. It is during this period that the Minister has the opportunity to hear from the public regarding the suitability of the draft *Aquaculture (Zones – Tumby Bay) Policy 2012*. All submissions are then considered by the *Aquaculture Advisory Committee* who can recommend modifications to the draft *Aquaculture (Zones – Tumby Bay) Policy 2012* such that it does promote 'ecologically sustainable development'.

### 3 SHARED RESOURCE USE

#### 3.1 Aquaculture Zone

- **Whilst we understand the planning need for zones, Council is not convinced the zones are located in the appropriate area and is uncertain to the scientific or other reasons for these two sites being chosen.**

Not all areas of the coast are suitable for aquaculture (e.g. if the coast is inaccessible because of cliffs, if the depth of the water is inadequate etc). There are also areas that will not be zoned for aquaculture because of the presence of sensitive habitats, navigation paths, and defined areas within future Marine Parks.

The shallower (less than 15 m), inshore areas adjacent to the proposed Tumby Bay Aquaculture Zone are characterised by seagrass whereas the technical investigation by the South Australian Research and Development Institute (SARDI) (Loo *et. al.*, 2010) indicates the proposed aquaculture zone's benthic environment consists predominantly of bare sandy substrate inhabited by ascidians (*Polycarpa* spp.), sponges and razorfish (*Pinna bicolor*) and avoids areas of seagrass.

The forecast growth of the industry is likely to exceed current zone capacity, so PIRSA Fisheries and Aquaculture aims to promote strategic growth through the development of zones that are underpinned by scientific research and social and economic analysis.

The composition and sensitivity of the benthic environment of the Tumby Bay area has been considered prior to the development of the proposed zone using data from a technical investigation by the South Australian Research and Development Institute in their report "Zone Investigations Project Phase II: Technical Investigation of Lower Eyre Peninsula Region – Tumby Bay Zone". This information is included in the draft Aquaculture (Zones – Tumby Bay) Policy 2012 report that was made publicly available during the consultation process.

The composition and sensitivity of the environment of specific aquaculture sites will again be considered before any occupation and operation of licensees. PIRSA Fisheries and Aquaculture requires that all applications for new licences in a subtidal area are accompanied by a biogeographical report, including an underwater video transect, of the proposed site. This report is analysed by PIRSA Fisheries and Aquaculture and is considered as to:

- The proposed infrastructure placement and nutrient dispersion;
- The proposed nutrient and sediment input;
- The proposed rotation of sea cages (if required);
- Any operations that may hinder natural benthic processes;
- The fragility and density of the benthic community in direct proximity to the site.

Given the depth of water of the proposed zone (approximately 15 to 20 metres) and local currents, dispersal of particulate and dilution of dissolved wastes will be effective and immediate. An Environmental Monitoring Program (EMP) will be applied to each licence granted in the zone to measure any potential impacts. Section 52 of the *Aquaculture Act 2001* provides the Minister for Agriculture, Food and Fisheries the ability to immediately modify the licence conditions to prevent or mitigate significant environmental harm or the risk of significant environmental harm.

In addition, section 17 of the *Aquaculture Regulations 2005* requires that stocked sea cages are not located in the same place that stocked sea cages have been located within the preceding 12 months. This regulation must be complied with by all licensees within the proposed Tumby Bay zone to ensure time for the environment to assimilate waste material generated from the farming activities. Breach of this regulation can result in a maximum penalty of \$5000.

EMP requirements are designed to inform PIRSA Fisheries and Aquaculture, the Environment Protection Authority (EPA), other government departments and the general public about the farming activities of the companies and the condition of the seafloor each year. EMP reports have not shown build-up of particulate wastes directly under or adjacent to sea cages stocked with finfish. Details of environmental monitoring reports are made available via PIRSA Fisheries and Aquaculture's Public Register <https://info.pir.sa.gov.au/aquapr/page/gui3/map.html>.

The Tumby Bay aquaculture zone incorporates an area of approximately 10,344 hectares and commences approximately 6.8 km from the Tumby Bay Township and approximately 2.6 km from the nearest mainland (around Red Cliff). The aquaculture zone is depicted in Figure 1 and is described in the *Aquaculture (Zones – Tumby Bay) Policy 2012*.

It is proposed that the aquaculture zone will provide a maximum of 1,300 hectares of lease area for aquaculture. This is approximately 13% of the total area of the aquaculture zone. It is proposed that at least five hectares will be used or available for use for the purposes of research or education.

A variation is included in the *Aquaculture (Zones – Tumby Bay) Policy 2012* as: Schedule 2—Amendment of policy by Gazette notice, to facilitate an existing application to vary a lease (LA00080) and corresponding licence. Pending the outcome of the application, the aquaculture zone may be varied as per Schedule 2—Map of zones (Figure 2). This amendment will decrease the size of the aquaculture zone by 20 ha from 10,344 ha to 10,324 ha, however the size of the aquaculture exclusion zone will stay the same.

### 3.2 Commercial Fishing

- **Overall, the main implication to the Sardine fishery in the establishment of the Tumby Bay aquaculture zones is prospectivity and like MPA's will affect fisher's rights.**
- **With the proposed zone placed in this area along with the restricted access of the new fishing zones around Tumby Bay and the Sir Joseph Banks Group of Islands the general public, locals and visitors alike are going to be denied their rights to legal and moral access to the waters that have been fished openly for generations.**

Commercial fishing is an important economical activity for the area, and the Sardine fishery is particularly important to Port Lincoln and a key part of the aquaculture practices of the Eyre Peninsula. As such, information to substantiate impacts from the proposed activity should be provided to PIRSA Fisheries and Aquaculture to be included in the decision making process.

When developing aquaculture zone policies, the views and concerns of the commercial and recreational fishers are included in the decision making process. An extensive legislated consultation process to ensure the location of the proposed zones does not impact important fishing areas is undertaken prior to finalising new zones. Where impacts can be foreseen, processes including negotiation are undertaken to ensure the sharing of the resource in an equitable way that achieves the economic, environmental and social objectives of the region and the state.

It should be noted that aquaculture zones do not exclude other users from the area, other than the immediate lease area occupied by an aquaculture licence holder. In the Tumby Bay Aquaculture Zone approximately 13% of the whole area will be occupied, which means that 87% of the area will remain available for fishing.

### 3.3 Exclusion Zone

- **The corridor of boat traffic between the Sir Joseph Banks Group and Tumby Bay as proposed with the new zone does not suit local boaties in southerly and SE winds and yachties in variable winds.**
- **We understand other Aquaculture Zones are being planned for Spilsby Island and Buffalo Reef?**
- **Exclusion zone should be at least tripled out from shore and extend to Point Bolingbroke. Why is Massena Bay not included? Is it for beach access to aquaculture leases?**
- **To ensure protection of the conservation values of this area the exclusion zone should be extended southward to Pt Bolingbroke to join with the Lincoln Exclusion zone and seaward to join the proposed Tumby Bay aquaculture zone.**
- **The exclusion zone for the boats to access the islands is not the path that boats take to return to Tumby Bay due to prevailing winds.**
- **Extra travel caused by the corridor will be forced upon us.**

While the predominant summer winds are from a south-south easterly direction, winter winds are more variable, ranging from westerly to northerlies. The location of the proposed aquaculture exclusion zone “transport corridor” represents a compromise for navigational utility over the full range of wind conditions experienced.

Following consideration and recommendation by the Aquaculture Advisory Committee, the Minister for Agriculture, Food and Fisheries has changed the position of the aquaculture exclusion zone to better align with vessel traffic to Marum and Partney Islands. In addition, the AAC have endorsed an increase to the size of the aquaculture exclusion zone southward to Point Bolingbroke and extended its boundaries seaward to share a common boundary with the aquaculture zone (Figure 1). Consequently, the aquaculture exclusion zone has increased by 7,237 ha, from 6,528 ha prior to public consultation, to 13,765 ha after consideration by the Aquaculture Advisory Committee and the Minister for Agriculture, Food and Fisheries.

The aquaculture zone itself does not exclude any users from entering the area of the aquaculture zone and practicing their activities. The only area that an aquaculture licence holder will have exclusive occupation rights is on their lease. The lease is marked off using the appropriate navigational markings as required by the Department for Transport, Energy and Infrastructure. As such, commercial and recreational fishing can still occur inside the aquaculture zone.

An aquaculture zone is proposed for waters south of Spilsby Island. Created as an amendment within the draft Aquaculture (Zones – Lower Eyre Peninsula) Policy 2012, the proposed Lincoln (outer) aquaculture zone will cover approximately 35,023 ha and make 5,000 ha available for aquaculture activities. The draft Aquaculture (Zones – Lower Eyre Peninsula) Policy 2012 has been approved by the Aquaculture Advisory Committee subject to some amendments and will require approval by the Minister for Agriculture, Food and Fisheries before it is finalised. An aquaculture exclusion zone of 2 km radius is proposed for Buffalo Reef.

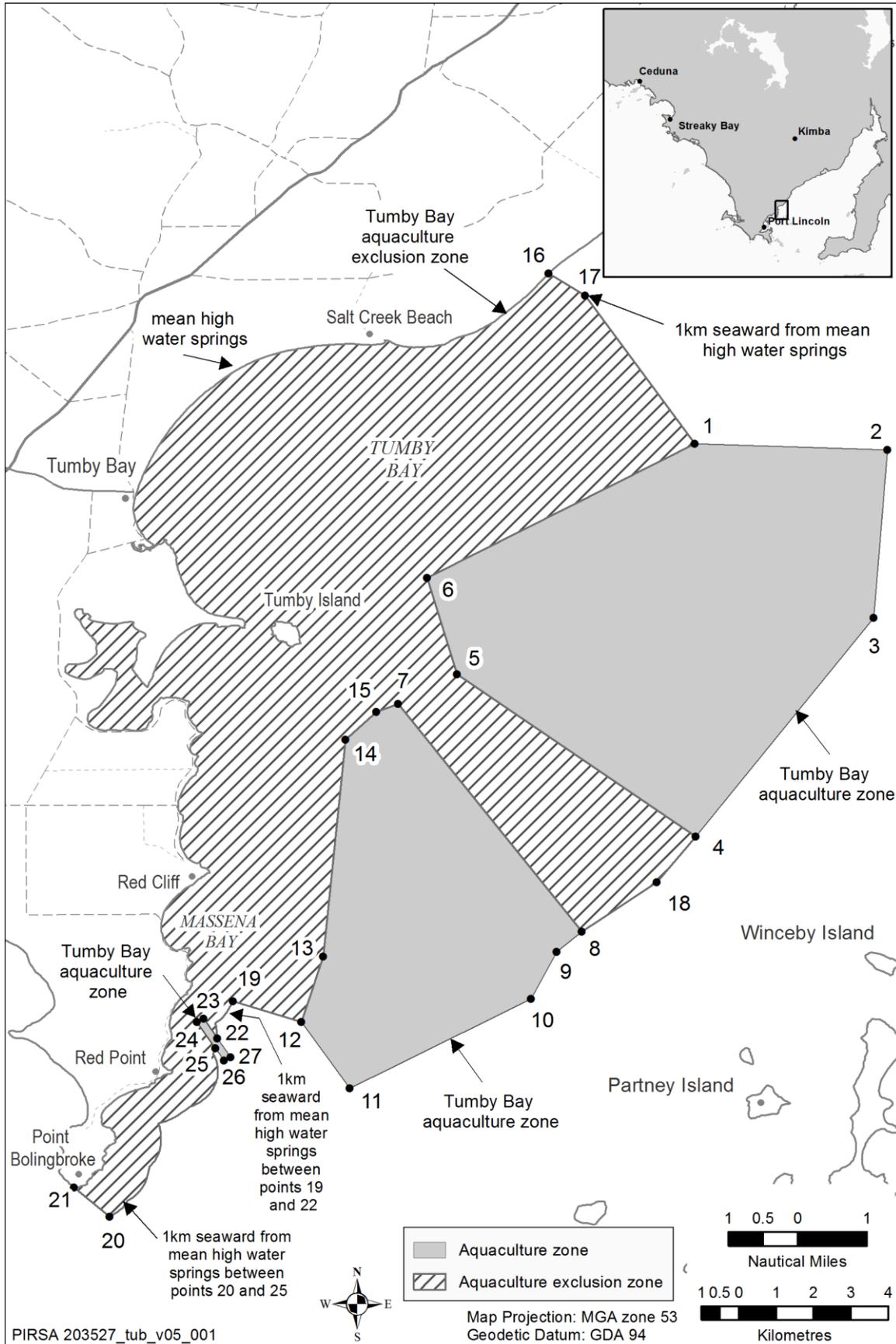


Figure 1. Overview of Tumby Bay aquaculture zone and aquaculture exclusion zone.

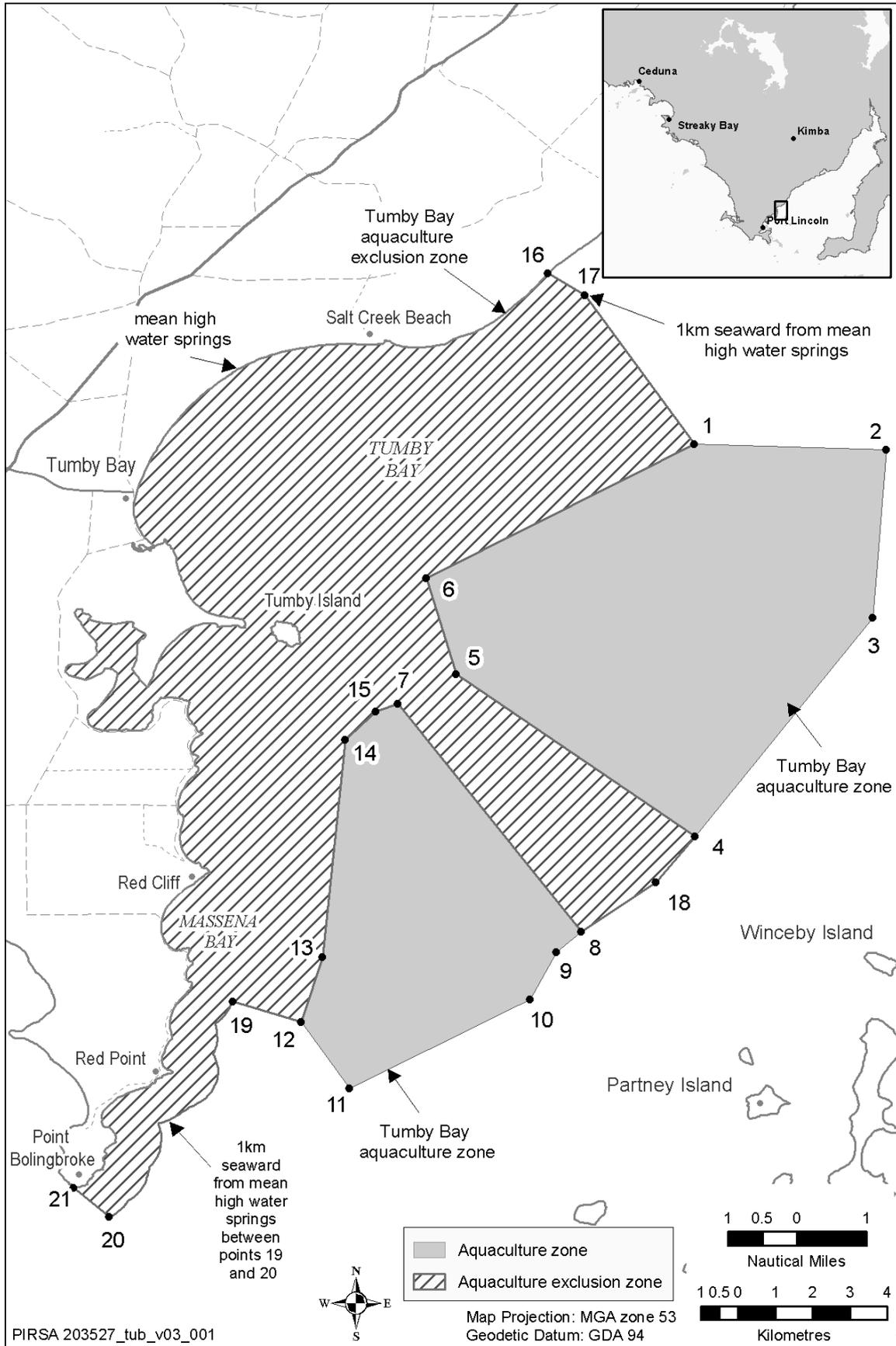


Figure 2. Schedule 2—Amendment of maps; Overview of Tumby Bay aquaculture zone and Tumby Bay aquaculture exclusion zone.

### 3.4 Navigation and Access

- **Offshore aquaculture leases also present a navigational hazard.**
- **Aquaculture Zones deny safe rights of access to fishing spots. Boats have to skirt around ropes, buoys and rings – often don't have lights. Some ropes and buoys are semi-submerged and hard to see. There have been a number of collisions and broken props.**

All aquaculture leases in a subtidal location are required (by condition on the lease as included below) to have lights and radar reflectors on spar buoys. Navigational Marks must be installed if any structures are present on the lease site. Where the lease is not immediately joined by another lease, or where the lease is the end lease of two or more, or where the lease is the end lease of two or more immediately joining leases, the outer boundary (i.e. that part of the lease boundary not immediately joined to another lease) must be marked with navigational marks in the following way:

(a) Subtidal –

1. At each corner of the lease site, yellow spar buoys.
2. Yellow spar buoys marked with a yellow St Andrew's cross as a top mark attached to a post at least 900 mm above the buoy, each cross arm 900 mm long and 75 mm wide.
3. Yellow spar buoys marked with lights being yellow in colour and flashing once every 4 seconds and visible over an arc of 360° for a distance of one nautical mile.
4. The ends of the arms of the St Andrew's cross marked with 200 mm yellow retro-reflective tape or 75 mm yellow retro-reflective discs.
5. Yellow spar-buoys marked with radar reflectors.
6. Yellow spar-buoys marked with the licence number of the lease holder.
7. Where the total length of any individual or combined lease boundary exceeds 500 m the lease must have navigational marks at intervals not exceeding 500 m.
8. Where an intermediate spar-buoy navigation mark is required they are to be yellow in colour with a yellow light flashing once every 2 seconds.

It is proposed to change the position of the aquaculture exclusion zone to better align with vessel traffic to Marum and Partney Islands.

Note that the aquaculture zone itself does not exclude any users from entering the area of the zone and practicing their activities. The only area that an aquaculture licence holder will have exclusive occupation rights is on their lease. The lease is marked off using the appropriate navigational markings as required by the Department for Transport, Energy and Infrastructure. As such, commercial and recreational fishing can still occur inside the aquaculture zone.

### 3.5 Recreational Fishing

- **With the proposed zone placed in this area along with the restricted access of the new fishing zones around Tumby Bay and the Sir Joseph Banks Group of Islands the general public, locals and visitors alike are going to be denied their rights to legal and moral access to the waters that have been fished openly for generations.**
- **The huge area proposed will have a big impact on local recreational fishermen.**
- **This huge proposed area will impede my recreational activities, plus those of hundreds of others.**

Recreational fishing can still occur inside the aquaculture zone (covering approximately 10,327 hectares). The only area requiring permission from lessees to enter is the immediate lease area (a

maximum proposed allocation of 1,300 hectares or 10% of the aquaculture zone). Generally speaking, areas targeted for recreational fishing are reef areas or sea grass areas (i.e. areas of high biodiversity) and not bare sandy areas. PIRSA Fisheries and Aquaculture endeavour to avoid areas of high biodiversity (through the technical investigations undertaken by the South Australian Research and Development Institute prior to an aquaculture zone being established) and consequently recreational fishing and aquaculture do not generally frequent the same waters.

PIRSA Fisheries and Aquaculture use public meetings during the consultation phase of aquaculture zone policy development as well as written submissions to provide information about areas of high interest and importance to recreational fishing.

All lease and licence applications are referred to the South Australian Recreational Fishing Advisory Council for comment prior to their approval.

### 3.6 Aquaculture Zone Development

- **When will this Aquaculture Zone be used and by who?**

The development of an aquaculture zone policy is the first step in assessing the economic and social benefits that an aquaculture industry could bring to the region. The second step is the competitive allocation process for releasing the tenure within the zone as required by section 33 of the *Aquaculture Act 2001*. Due to the competitive nature of the tenure release, there is no guarantee as to who the likely leaseholders in the aquaculture zone will be.

When the aquaculture zone is used, is at the discretion of the Minister for Agriculture, Food and Fisheries following advice from the Aquaculture Tenure Allocation Board (ATAB). The ATAB is an independent advisory body, established under the *Aquaculture Act 2001*, to provide the Minister for Agriculture, Food and Fisheries with advice on tenure allocation. Following a public call for applications the ATAB meets at the discretion of the Minister and assess applications for tenure against the following criteria:

1. The nature of the proposal;
2. The technical and environmental capacity of the applicant;
3. The business capacity of the applicant; and
4. The social and economic benefits of the proposal to the region and to the State.

- **Is there ever going to be a cap on the amount of Aquaculture, especially in the open sea?**
- **This aquaculture zone can be identified as similar to existing sites that have caused multiple problems for the general community. And any class of aquaculture should not be permitted in what the industry considers any available space, with rights above all others. The general public should not be ridden roughshod over to appease all and any industry.**

Given the many users of State waters, aquaculture development takes place in a highly space competitive environment. As part of the development of aquaculture policies, certain government bodies are included in the referral and consultation processes prior to and during the public consultation period. Likewise, other major developments that are occurring around the state that may impact on the aquaculture industry are referred to PIRSA Fisheries and Aquaculture for comment. This process allows the government to have a more complete picture of what is occurring as far as developments and possible impacts to the Spencer Gulf and other areas of the state.

The South Australian Government is committed to the protection of the marine environment as is reflected in the State Strategic Plan which sets a target of establishing 19 Marine Parks by 2011. Spencer Gulf is approximately 7,500 km<sup>2</sup> or 750,000 ha in size. Of this, there is approximately 57,730 hectares or 7.7% covered by aquaculture zones. Of this amount, the maximum area permitted for aquaculture within those zones is approximately 4,916 hectares or 0.7% of the Gulf.

Not all areas of the coast are suitable for aquaculture (e.g. if the coast is inaccessible because of cliffs, if the depth of the water is inadequate etc). There are also areas that will not be zoned for aquaculture because of the presence of sensitive habitats, navigation paths, and defined areas within future Marine Parks.

The forecast growth of the industry is likely to exceed the amounts already zoned for, so PIRSA Fisheries and Aquaculture aims to promote orderly growth through the development of zones that are underpinned by scientific research and social and economic analysis.

The aquaculture industry in South Australia has a number of environmental controls including:

1. Initial site assessments;
2. Application of licence conditions in conjunction with the Environment Protection Authority;
3. Application of the *Aquaculture Regulations 2005*;
4. Ongoing environmental monitoring; and
5. Ongoing research.

To date, environmental monitoring has not indicated irreversible change to benthic flora and fauna. In the few cases where there has been an effect, the sites begin to recover within weeks to months, largely due to the following programs that are required by regulation that permit natural processes to assimilate any accumulated material.

Aquaculture zone policies are created to maximise benefits to the community from the State's resources and to promote the ecologically sustainable development of marine aquaculture. Extensive consultation with industry and community prior to their approval by the Minister for Agriculture, Food and Fisheries and the Environment, Resources and Development Committee of the Parliament ensures their relevance and suitability.

As part of the development of aquaculture zone policies, certain government bodies are included in the referral and consultation processes prior to and during the public consultation period. Likewise, other major developments that are occurring around the state that may impact on the aquaculture industry are referred to PIRSA Fisheries and Aquaculture for comment. This process allows the government to have a more complete picture of what is occurring as far as developments and possible impacts to the Spencer Gulf and other areas of the state.

- **Proposed zone boundaries are far too excessive.**

Not all areas of the coast are suitable for aquaculture. Aquaculture encompasses a small proportion of Spencer Gulf waters. Spencer Gulf is approximately 7,500 km<sup>2</sup> or 750,000 ha in size. Of this, there is approximately 57,730 hectares or 7.7% covered by aquaculture zones. Of this amount, the maximum area currently permitted for aquaculture within those zones is approximately 4,916 hectares or 0.7% of the Gulf.

The proposed Tumby Bay aquaculture zone is 10,324 ha in size with approximately 1,300 ha proposed for aquaculture development. The proposed zone boundaries have been developed using technical

information supplied by the South Australian Research and Development Institute that indicate environmentally suitable areas for aquaculture.

### 3.7 Other Zones

- **We understand other Aquaculture Zones are being planned for Spilsby Island and Buffalo Reef?**

An aquaculture zone is proposed for waters south of Spilsby Island. Known as the Lincoln (outer) aquaculture zone it will cover approximately 35,023 ha and make 5,000 ha available for aquaculture activities. The aquaculture zone policy is still under development and a draft has been approved by the Minister for Agriculture, Food and Fisheries for the mandatory period 2 months public consultation.

A 2 km radius aquaculture exclusion zone is proposed for Buffalo Reef.

## 4 SOCIAL ISSUES

### 4.1 Ancillary Land based Activities

- **Community is frustrated with disused rings and maintenance of rings being stored in back waters e.g. Rotten Bay, Proper Bay, BHP wharf etc. Will the same thing happen – Ski Beach, Tumby Bay Beach and Peak Bay?**

PIRSA Fisheries and Aquaculture acknowledge that waste and debris from aquaculture farms washing up onto beaches is an issue that may occur. Regulation 9 of the *Aquaculture Regulations 2005* makes it an offence to allow aquaculture waste to be washed off the licence site and not recovered in a timely manner.

PIRSA Fisheries and Aquaculture takes compliance issues seriously and undertakes random inspections of sites which include checking waste security and management. To bring particular issues to PIRSA Fisheries and Aquaculture's attention, you can report to PIRSA Fisheries and Aquaculture through FISHWATCH on 1800 065 522, which is a 24 hour telephone service, or through direct dialogue with PIRSA Fisheries and Aquaculture.

Since the time of the public meeting for this zone proposal (25 August 2011) PIRSA Fisheries and Aquaculture has worked closely with the aquaculture industry and community to encourage the licensee's and industry associations to take a more pro-active approach to managing this issue. For example, an industry led 'adopt a beach' campaign is being organised to ensure that debris clean up occurs in a coordinated fashion, as well as meetings with farm managers to identify better practices and PIRSA Fisheries and Aquaculture participating in selected beach surveys that currently occur.

### 4.2 Economic Impact

- **I believe the effect on my business and other businesses in Tumby Bay will be negative. Port Lincoln businesses will derive all income and we as rate payers will cop the costs and problems of the inevitable mess made of our coastline by these operations. This is already happening as they creep northward.**
- **How is there going to be a financial benefit to Tumby Bay when the marina is only accessed by small boats? It cannot accommodate larger vessels.**

The South Australian Government's planning strategy for Regional SA details directions for various regional planning areas of the state, including specific directions for: Outback, Eyre Peninsula, Mid North, Upper Spencer Gulf, Riverland, Murraylands, South East and Kangaroo Island. The Planning Strategy identifies a number of goals and associated priorities to guide the pursuit of economic activity, environment and resources, infrastructure, people, towns and housing and water resources for each of these regional areas. Where possible, aquaculture policies are aligned with these goals and priorities. Further information on the Planning Strategy can be obtained from the Department of Planning and Local Government's website: [www.planning.sa.gov.au](http://www.planning.sa.gov.au).

According to the most recent Econsearch report (2012), the state's total value of seafood production in 2010/11 was almost \$426 million, of which aquaculture contributed almost 54 per cent (\$229m) and wild-catch fisheries (excludes catch from the commonwealth managed fisheries and charter boat fishery), the balance (\$197m). In aggregate, Tuna is the largest single sector in the state's aquaculture industry, accounting for almost 55 per cent of the state's gross value of aquaculture production in 2010/11. The other two main sectors are Oysters (16 per cent) and Marine Finfish (12 per cent).

Direct employment was estimated to be 1,113 full time equivalent (fte) positions (727 on-farm and 386 in downstream activities) in 2010/11 with 1,536 flow-on jobs, giving total employment of 2,649 fte. Approximately 65 per cent of these jobs were generated in regional South Australia.

### 4.3 Infrastructure

- Existing boat ramp has been designed and built for recreational use – not for commercial activity.
- Access to boat ramp is through the township which will result in increased traffic and noise throughout the town and at the boat ramp.
- Concerned for safety of residents & visitors – especially children – as a result of increased traffic.
- If a new boat ramp or marina is to be built, it should be at the cost of the Government or the lessees – not by the residents via increased council rates.
- Cannot see any financial benefit to Tumby Bay when large vessels cannot get into the Marina there. Who is going to pay for the additional infrastructure in the town if it is needed, the District Council or the Licensee?
- Creation of an offshore aquaculture zone may require associated infrastructure and services onshore – mechanism is required to identify any necessary amendments for the DC of Tumby Bay development plan to ensure appropriate & planned development.
- Arno, Tumby & Cowell already have infrastructure in place, are more industrialised and more suited to this type of activity.
- Arno Bay is underutilised – why not use this area where infrastructure already exists.

Whilst PIRSA Fisheries and Aquaculture acknowledges the existing boat ramp in Tumby Bay is not adequate for large service boats, the aquaculture zone policy framework does not extend to onshore planning arrangements that would support the activity to be carried on in the aquaculture zone. This coastal and land based planning falls within local government jurisdiction, and PIRSA Fisheries and Aquaculture will discuss this matter with the District Council of Tumby Bay, who have also been consulted during the development of the *Aquaculture (Zones – Tumby Bay) Policy 2012*.

In other areas around the state, where infrastructure of the towns adjacent to aquaculture activity has been inadequate, private funding or private/public partnerships have been created with aquaculture operators to fund improvements and/or maintenance of infrastructure, an example of this partnership is the boat ramp at Anxious Bay and the marina at Arno Bay. Alternatively, aquaculture activities may be serviced from other ports.

PIRSA Fisheries and Aquaculture has recently released tenure in the outer Arno Bay aquaculture zone. The purpose of zoning for aquaculture is to plan for the future expansion of the industry as well as accommodating existing requirements for area and biomass. Until the existing zones are being used to the full capacity permitted, it is not envisaged that the Minister for Agriculture, Food and Fisheries will increase the biomass for these zones.

### 4.4 Tourism

- The development of Port Spencer, Aquaculture, Fishing Zones, enough is enough. Leave Tumby Bay and Port Neill for tourism and the people.

Across the Eyre Peninsula, it has become evident that there is a close affiliation between the tourism industry and aquaculture. Towns which support the aquaculture industry are benefiting from the tourism associated with the Eyre Peninsula Seafood and Aquaculture Trail. The trail brings together seafood, dining and aquaculture experiences to help visitors chart the journey of the Eyre Peninsula's delicious seafood from the sea to restaurant plates.

The popularity of aquaculture for tourists is further reflected in charter operations that provide tourists with the opportunity to visit the sea-cages and swim with the tuna in Port Lincoln.

Aquaculture also provides employment opportunities which have subsequent economic benefits for communities such as provision of infrastructure and services.

## 5 POLICY REPORT

### 5.1 Figures

- **It would be useful to have a map of the Marine Park included in the policy report.**

A map of the Marine Park will be included in the Policy report and Figure 2 will be changed to a chart with bathymetry marked in metres rather than fathoms (see Figure 3 this report).

### 5.2 Appendix D1

- **In Appendix D1 of the draft policy report, the consistency of the draft policy with relevant acts and policies are listed. On page 44, the *Marine Parks Act 2007* is discussed.**

Relevant table cell in Appendix D1 on page 44 of Policy report will be amended to:

*It is widely recognised that Aquaculture is an important and growing industry in this State that provides significant benefits to South Australia. The needs of the industry have been considered with commitments to accommodate, as far as possible, existing aquaculture operations. This has resulted in whole-of-government policy commitments and a draft Memorandum of Administrative Agreement between PIRSA and the Department of Environment Water and Natural Resources. Together these support the relationship and likely interactions between proposed marine parks and aquaculture developments in South Australian waters and enable DEWNR and PIRSA to work together to address key targets from South Australia's Strategic Plan. These include increasing the value of South Australia's export income by \$25 billion by 2020 (Target 37) and maintaining the health and diversity of South Australia's unique marine environments (Target 71) and such that each is given optimal effect without detriment to the other.*

*The Policy has been prepared having regard to Marine Park objects and boundaries and in accordance with the agreement between DENR and PIRSA.*

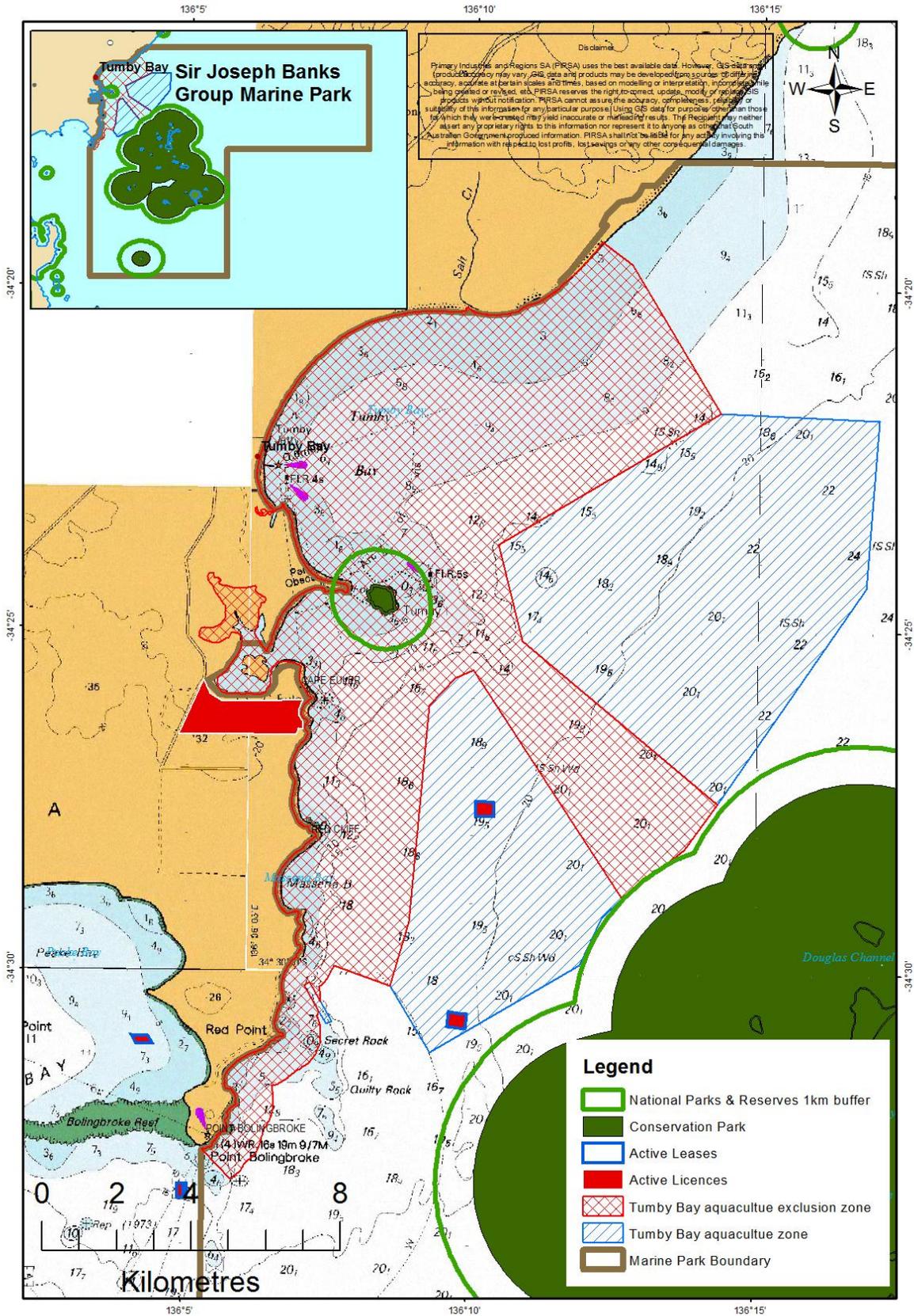


Figure 3. Modified Figure 2 for Policy report.

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