



Government of South Australia

Primary Industries and Regions SA

**DRAFT
AQUACULTURE
(ZONES—LOWER EYRE PENINSULA)
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 – Lower Eyre Peninsula) Policy 2011.

These submissions are grouped into similar areas and defined by the Table of Contents.

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

- It is likely that the increase in nutrients that will result from the increased biomass will place further pressure on the ecosystem (including seagrass) within these regions, which may result in further significant impacts on ecosystem processes such as productivity, assimilative capacity, sand stabilisation, wave attenuation and fisheries production.
- The EPA strongly recommends that PIRSA facilitates additional monitoring that will provide feedback into the SARDI carrying capacity model to determine if the biomass limits apply in the zone for various species are accurate and provide adequate environmental protection to the ecosystem within the surrounding zone.
- Criteria as the performance of zones need to be set and evaluated before an increase in biomass for a zone can take place to ensure it does not adversely affect existing license holders.
- The Louth Bay aquaculture zone is landlocked as can be seen by your map. Prevailing summer winds are south and southeast and blow towards the mainland. There is little tidal movement here during this time, therefore minimal flow and flush out of the bay. This situation has the potential for the bay to become a sewer and is of great concern.
- As the prevailing summer winds blow toward the mainland, there will be the potential for the bay to be polluted with by-products from the aquaculture ventures with minimal opportunity for the pollution to be flushed out to sea.
- I am alarmed with the farming of bivalve molluscs and algae as this area is land-locked and does not experience frequent flow and flush.

All aquaculture generates waste material in some form and to some degree. Primary Industries and Regions South Australia (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 to explore different scenarios and assist in determining suitable carrying capacities of species for zone policies.

PIRSA has taken a precautionary approach in the development of the proposed Louth Bay aquaculture zone. This is explained further in the supporting Report. The draft Policy 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 zone policy level by upper biomass limits for each zone, i.e. the maximum biomass of organisms farmed under a particular class of aquaculture at any one time. In addition, the policy includes the farming of bivalve molluscs and algae which naturally utilise nutrients which may accumulate in the environment.

PIRSA has participated in and funded carrying capacity investigations for marine aquaculture since 2001 and continues in these endeavours. 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 applies the information gathered from these investigations and, where relevant, from other sources, to determine biomass capacities for aquaculture zones or sectors. For finfish aquaculture, the carrying capacity model provides a theoretical biomass that could be sustained within a given aquaculture zone volume without breaching a water quality “guideline” value. The Australian and New Zealand Environment Conservation Council’s (ANZECC) guidelines for fresh and marine water quality, published in 2000, are used as a benchmark within modelling scenarios (ANZECC, 2000). In the context of applying the model for biomass determination in an aquaculture zone, the guideline water quality values are a trigger, below which risk to the environment is low and above which there is a possible risk to the environment and a corresponding need for action to further investigate or fix the cause. The ANZECC guidelines are applied in order to ensure there is a conservative allocation of biomass to an aquaculture zone. In fact, PIRSA is even more conservative as only a proportion of the theoretical biomass determined by the carrying capacity model is allocated in a zone policy.

PIRSA 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 in addition to the site-specific scale. It should be noted that earlier environmental monitoring programs (mid-1990’s) for tuna farms did include water quality monitoring. However, given the spatial and temporal variability in water quality measurements across the scales required, it was not considered an effective management indicator for aquaculture.

The Policy allows for the Minister for Agriculture, Food and Fisheries to alter the maximum biomass limits of all classes of aquaculture through notice in the South Australian Government Gazette. This provides a mechanism to enable flexibility in setting biomass limits for aquaculture zones or sectors and enables future research and environmental monitoring results to be taken into consideration as they become available over time.

- **There is no understanding or evidence on the carrying capacity in Louth Bay or in any bay for mussels, and no modelling form of any other bay can be used as all bays are different. It is not practicable to use oyster production figures; 2 different animals. You cannot compare Coffin Bay to Smoky Bay. Louth Bay aquaculture zone needs to have performance criteria assessed year in year out before any increase in biomass otherwise it could/would crash the whole zone. I have seen this happen before.**

For shellfish or algae aquaculture, estimating carrying capacity is more complicated as potential production must be estimated from available nutrient and light resources. At present there are difficulties in confidently predicting potential production. There is limited data and or localised published literature available to ascertain the biological requirements of shellfish or algae within South Australian coastal conditions and compared to seasonally varying food concentrations and temperature (Parsons Brinkerhoff and SARDI Aquatic Sciences, 2003; Mount *et. al.*, 2007). PIRSA acknowledges that further research must be undertaken and that a conservative approach to the allocation of additional shellfish production will be taken. Nevertheless, algae aquaculture has been recommended as a means by which the negative effects of effluent may be minimised and the environmental impact of other aquaculture activities reduced (Chopin *et. al.*, 2001; Buschmann *et. al.*, 2007).

1.2 Escapes

- **What has happened to the escapee's register?**

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 maintains a public register of reported finfish escapes from June 2001. The Finfish Escape Register is located on the PIRSA website at:

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.
- **Worse still the abysmal record of Kingfish escapes and their effect on localised fish populations is a cause for concern.**

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.

1.3 Environmental Monitoring Programs

- Chains, anchors and discarded feed are wrecking the sea bottom. Farms need to be better monitored as they don't seem to get shifted, like they are supposed to.
- It is likely that the increase in nutrients that will result from the increased biomass will place further pressure on the ecosystem (including seagrass) within these regions, which may result in further significant impacts on ecosystem processes such as productivity, assimilative capacity, sand stabilisation, wave attenuation and fisheries production.
- With reference to Louth Bay aquaculture zone. My suggestion is to draw the line from point 3 to 9 to reduce environmental impact.
- I have grave concerns also with the suggested quantity of farm animals because of the build-up of sediment on the seafloor and lack of frequent tidal flow and flush in the area.
- There are no real bench marks in the act or performance indicators that are dated in such a way to track environmental degradation that force companies to remediate or reinstate the degraded sites or even surrender them. If they are there then we challenge the powers that are able to do so, show cause why so many areas have been left in various stages of decay.

The composition and sensitivity of Lower Eyre Peninsula's benthic environment has been considered prior to the development of the proposed zone and will again be considered before any occupation and operation of licensees. PIRSA 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 and considers potential impacts such as:

- 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; and
- The fragility and density of the benthic community in direct proximity to the site.

Given the depth of water of the proposed zone and local currents, dispersal of particulate and dilution of dissolved wastes will be effective and immediate. An environmental monitoring program (EMP) is required annually for each licence granted in the zone to measure any potential impacts occurring over time. EMPs are sector specific and may include ongoing benthic video monitoring for abalone, finfish and subtidal mollusc sectors. EMP information is used to manage sites once allocated in an adaptive manner within aquaculture zones. Further, section 52 of the *Aquaculture Act 2001* provides the Minister for Agriculture, Food and Fisheries with 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. Licensees within the zone must comply with this regulation 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, 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. Details of environmental monitoring reports are made available via PIRSA Aquaculture's Public Register http://www.pir.sa.gov.au/aquaculture/public_register. These EMP

reports have not shown build-up of particulate wastes directly under or adjacent to sea cages stocked with finfish.

1.4 Regional Monitoring

- To date there does not appear to be any investigations into the far field impacts of nutrient loads being discharged by finfish farms.
- Further investigations into the transport and fate of soluble nutrients radiating from individual and multiple farms is also needed to ensure that any early warning environmental signs are recognised to avoid widespread eutrophication and potential seagrass loss.
- The EPA suggests that regional scale ecosystem monitoring should be implemented to manage adaptively the balance between the expansion of mussel/algae aquaculture and the allocation of finfish aquaculture for the zone.
- The EPA therefore strongly recommends that suitable regional monitoring incorporating a BACI design be undertaken in the vicinity of the Sir Joseph Banks Group to ensure the ecosystems within this region are not impacted as a result of tuna farming being undertaken in this Sector.

The transport and dispersion of soluble nutrients produced by the presence of individual and cumulative aquaculture farms is an issue of complexity and concern for PIRSA. Over the last decade, considerable ongoing funding and research has been directed toward elucidating the impacts of nutrients, both soluble and insoluble, caused by finfish farming. Currently, the \$1.16 million “Carrying capacity of Spencer Gulf – Hydrodynamic and biochemical measurement, modelling and performance monitoring” project seeks to provide PIRSA with estimates of sustainable carrying capacity by region, season and species. The project will collect data from five areas in Spencer Gulf to build, calibrate and validate hydrodynamic, biochemical and wave models that describe the biophysical properties of the Gulf. These models will then be used to provide measures of nutrients connectivity from aquaculture (supplementary fed species) and non-aquaculture (natural and industry) sources. This project will couple hydrodynamic modelling of organic carbon transport and deposition from finfish sea-cages to further refine existing environmental monitoring program designs.

Relevant research outcomes have long driven and underpinned the development of PIRSA’s legislated environmental monitoring programs for the aquaculture industry. The goal for PIRSA is an integrated, regional-to-cage scale environmental monitoring program that facilitates the sustainable planning and management of aquaculture activities. The research project mentioned above will move PIRSA closer toward achieving that goal.

1.5 Sharks

- The increase of prevalence of sharks is also a worry for families.
- With regular fish feeding, sharks will be attracted, putting people at increased risk.
- I have concerns with the proposed aquatic animals being farmed in this area with regular feeding because of the threat of the attraction of sharks to the main swimming beaches at Louth Bay.

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; Huvneers *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.

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.

- The industry will have to accept the fact than an obscure report dating back to 2004 from a “workshop” (again composed of mainly vested interests) claiming that there will not be an increased shark risk has never had any credence locally and has even less now. The constant interaction on an almost daily basis between humans and Great White sharks with cage diving operations these days, and the burley streams associated with tuna feeding and harvesting operations means this risk has greatly increased. Nobody at both meetings disputed this. One official view put forward, that “there is a huge amount of money involved in Aquaculture and with the increase in numbers since protection, some leeway should be given” has been treated locally with the contempt it deserves.

In relation to the concern that there will be an increase in sharks due to the increased aquaculture activity from the proposed aquaculture zone policies, there is no evidence to suggest that aquaculture increases the risk of shark attacks on humans. Sharks are naturally present in Spencer Gulf and may visit aquaculture facilities in that area. Fish mortalities are routinely monitored and removed so that no reward is presented to sharks. Consequently, it is considered unlikely that sharks will continue to stay in the area.

1.6 Seagulls

- Also regular feeding will exacerbate the seagull numbers to the Louth Bay community.
- Seagulls will also become a greater problem as I have witnessed on Louth Island when tuna farms were close by in the Rabbit Island Zone. You only have to visit to see what a disaster Rabbit Island is today with the strong stench, numbers and noise of seagulls who feed and breed on fish farms close to land. Louth Bay residents will be affected by an increase in already unnatural seagull numbers. They will have to put up with noise and stench as well as defecation on their roofs in a community where many collect rainwater for drinking. Should Louth Bay residents have to put p with an unnatural increase in seagulls around their houses?

Aquaculture zone policies are a planning tool and are not intended to address operational issues such as the attraction of other species. The management of abundant native animals falls under the jurisdiction of the Department for Environment Water and Natural Resources (DEWNR). The aquaculture industry is trialling different methods of reducing the attraction of seagulls to finfish farms, including feeding methods and the placement of netting over the sea-cages that hold juvenile stock.

1.7 Debris

- Make all rubbish and ropes identifiable.
- An increase in aquaculture in the area is likely to see an increase in the amounts of debris collecting on offshore islands and this needs to be managed. The policy report should consider these issues and suggest proposed management strategies, such as regular clean ups, labelling of gear, and litter reduction strategies.
- As well as having aquaculture industry initiate management practice changes to address the debris issues at the source and the regular defined coastline surveys and cleanups a clear process for reporting and retrieval of debris also needs to be addressed.
- Our coastline and beach will become even more littered with rubbish from finfish farming.
- The last time there was a mussel lease off Point Bolingbroke we continually picked up large black buoys which broke up in the extreme weather which occurs in the winter months.

- I run a successful Tourist Accommodation business on my property. Holiday makers have previously voiced their disgust about the marine debris on our stunning beaches, now they feel they will have no area to enjoy for fishing, skiing and other water activities.
- As yet no suitable formal plan of action has come forward from the Aquaculture Industry to address this issue despite a massive amount of publicity other than an annual clean up “after harvest” when it suits. This has not worked.
- Having old broken and unused leases left around along with the amount of rubbish turning up on beaches around where the aquaculture farms are present leaves a poor taste.

While not all marine debris is derived from fisheries and aquaculture related activities, these industries have a permanent and visible presence in local waters. Consequently the seafood industry and state government shares the responsibility for management of the issue.

The marking of individual ropes and aquaculture gear is not practical. Tags would only mark a small portion of the gear rather than the whole piece of aquaculture equipment – unless specific unique combinations of rope are developed to identify each particular licence holder which would create additional production and regulatory costs to implement and manage.

Current legislation within the *Aquaculture Regulations 2005* stipulates penalties and fines for licensees who fail to adequately contain waste (debris) and maintain farming structures.

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 a 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, when issued with of receiving an aquaculture lease, the lessee must either provide a guarantee from its bankers in the amount of a pre-determined amount 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 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 Class of Permitted Aquaculture

- **The Association (SGWCPFA) does not support an experimental and unproven algae aquaculture industry being granted access to the Lincoln (outer) sector.**

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 zone policy level by upper biomass limits being set for each zone, i.e. the maximum biomass of organisms farmed under a particular class of aquaculture at any one time.

Algae aquaculture is extensively practiced, world-wide, in both temperate and tropical environments. As for all species farmed in South Australia, a comprehensive environmental risk assessment is undertaken prior to granting a licence (Fletcher *et. al.*, 2004). These are considered independently and co-approved by the Environmental Protection Authority. Such a process ensures that risks from aquaculture to other marine resources users and considered and managed, mitigated or avoided where appropriate.

In addition, algal farms that are grown in close proximity to fish farms provide functional biological filters. It creates 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.

- **The South Australian Mussel Association is against the farming of bivalve molluscs other than mussels in the Murray Point aquaculture zone. The argument being over settlement.**
- **To have oysters farmed in the same area where mussel spat is caught is high risk for a number of reasons. Proper Bay is the heart and soul of mussel spat catching in SA. Without spat fall in Proper Bay there would be no mussel farming industry in SA in any form or manner.**
- **Should oysters be actively farmed in Proper Bay the oysters would over settle on the brood stock and possibly end the mussel industry in SA.**

The topic of adverse interactions between mussels and oysters are being raised more frequently by both industry sectors. Whether oyster spat would overrun mussel spat or vice versa is a site specific issue. It would depend on a range of variables including, but not limited to: water quality, available food type and density, presence of broodstock, density of either species, settling structures and hydrodynamics. Consequently, careful consideration of the issues raised would be given on a case-by-case basis to any applications for intertidal oysters in the Murray Point aquaculture zone.

Further, during individual licence assessments, the placement and appropriateness of licences are considered and assessed not only on a site level, but also on a regional or cumulative level. As such, interactions occurring among sites are considered during the assessment.

2.2 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 legislative, 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.

2.3 Prescribed Criteria

- The EPA recommends that Part 6 Clause 15, which outlines the prescribed criteria under which aquaculture is permitted within the Louth Bay aquaculture zone, clearly includes the expansion of finfish aquaculture within this zone will not be approved unless the Minister and the EPA are satisfied that additional nutrients resulting from additional fish farms can be adequately assimilated by the environment and will not result in environmental harm (including seagrass loss).

The Aquaculture Advisory Committee approved the following text on 18 October 2011, referring to the issue raised by the EPA above, to be included in the Report supporting the Policy:

The draft Policy proposes an increase in finfish biomass from 1020 tonnes to 4000 tonnes in the proposed Louth Bay Aquaculture Zone. Although the increase is a conservative proportion of the output supported by the latest carrying capacity model, it is recognised that the release of tenure to access sites in this zone will be incremental, and under the control of the Minister in addition to restricting the maximum biomass of aquatic organisms (other than prescribed wild caught tuna) farmed in a manner that involves regular feeding. This will limit the potential for environmental harm. In other words, the Minister will decide on how many hectares will be made available to industry, when, and for what species, considering potential risks for adverse environmental impact from farming activities. An independent board, the Aquaculture Tenure Allocation Board (see Division 3 of the Act) advises the Minister (on its own initiative or at the request of the Minister) on any matter relating to the allocation of tenure for aquaculture. Once tenure has been allocated within the proposed Louth Bay aquaculture zone, PIRSA Fisheries and Aquaculture will individually assess, monitor and regulate each licence application, including biomass limits that can be farmed at a site level, on an ongoing basis. Through adaptive management, site specific environmental monitoring programs will aim to identify and minimise the risk of significant environmental changes from aquaculture.

The Policy articulates a broad framework for aquaculture management within the defined aquaculture zones, including the prescribed criteria that apply to each aquaculture zone/sector. More detailed considerations such as the size of each lease, the farming structures permitted on each licence and the

stocking densities for different species is assessed and managed at the individual lease and licence level. Such management tools do not form part of the Policy or prescribed criteria.

Discussions continue between PIRSA and the EPA to ensure that the intent of the paragraph above is followed.

PIRSA considers there is sufficient control in the *Aquaculture Act 2001* (Act) with respect to the Objects of the Act (section 8), Grant of Licence (section 50) and Reference of Matters to EPA (section 59) to ensure that development in Louth Bay will be ecologically sustainable and that adverse effects on the environment are avoided, remedied or mitigated. Section 59(5) of the Act states that "The EPA is not subject to Ministerial direction in relation to the determination of its response to a matter referred to it under this section". In addition, including reference to other government agencies in aquaculture zone policies' prescribed criteria is not considered appropriate, particularly when that agency is already referred to in higher legislation. Consequently, given the Act's objects and the EPA's existing powers with respect to the approval of leases and licences, the inclusion of specific criteria in the Policy pertaining to the assimilation of and environmental harm from finfish farm nutrients in the Louth Bay aquaculture zone may not be necessary. It may be more appropriate to address this issue through a Memorandum of Administrative Agreement (MAA) between PIRSA and the EPA.

- There appears to be a discrepancy in s12 of the policy (prescribed criteria for the Lincoln aquaculture zone) – s12(a) implies that wild caught tuna can only be farmed for purposes of research, education and tourism, but the subsequent clauses (b and c) prescribe biomass and area limits which appear to be way beyond what would be required for the purposes of clause (a).
- In s12(b)(ii) the word 'tonnes' needs to be inserted after 10,500.

The two discrepancies noted in section 12 of the Policy will be corrected. The prescribed criteria in s12 will state:

12—Prescribed criteria

In the determination of applications for licences and in the making of other decisions under the Act in relation to the Lincoln aquaculture zone, the following prescribed criteria must be taken into account:

(a) in the Lincoln (inner) sector.

- (i) the leased area must not exceed 1 825 hectares; and*
- (ii) the biomass of prescribed wild caught tuna being farmed must not exceed 10 500 tonnes, or, if some other amount is specified by the Minister by notice in the Gazette, that other amount;*

(b) in the Lincoln (outer) sector.

- (i) the leased area must not exceed 5 000 hectares; and*
- (ii) the biomass of prescribed wild caught tuna being farmed must not exceed 14 000 tonnes or, if some other amount is specified by the Minister by notice in the Gazette, that other amount.*

2.4 Consultation

- We have no record of discussions with the commercial fishing industries or recreational and tourism industries and we would ask "why?"
- It seems that no scale fisheries were consulted about the Lower Eyre Peninsula Zoning.

Consultation undertaken in the development of the Policy is described in section 5.2 of the draft Report (available at: http://www.pir.sa.gov.au/aquaculture/management_policies/Draft_Policies).

Following preparation of the draft Policy and draft Report, the Minister is required to refer both documents to prescribed bodies and to any public authority whose area of responsibility is, in the opinion of the Minister, likely to be affected by the draft Policy (section 12(4)(a) of the Act). The following bodies are prescribed:

- South Australian Native Title Services Limited;
- Conservation Council of South Australia Incorporated;
- Local Government Association of South Australia;
- Seafood Council SA;
- Fisheries Council of South Australia;
- South Australian Aquaculture Council;
- South Australian Recreational Fishing Advisory Council;
- Any registered representatives of native title holders or claimants to native title in land comprising or forming part of an aquaculture zone or area to which the policy applies;
- Any person holding an aquaculture licence or aquaculture lease over an area comprising or forming part of a zone or area to which the policy applies;
- Any regional NRM Board (within the meaning of the *Natural Resources Management Act 2004*) responsible for a region comprising or forming part of an aquaculture zone or area to which the policy applies; and
- Environment Protection Authority (EPA).

In addition to prescribed bodies, PIRSA Fisheries and Aquaculture consults with the following parties:

- Industry leaders, Department for Planning, Transport and Infrastructure (DPTI), SA Tourism Commission (SATC), South Australian Research and Development Institute (SARDI), Department of Environment Water and Natural Resources (DEWNR), Department of Health and Aging (DHA), Department of Premier and Cabinet; Aboriginal Affairs and Reconciliation Division (AARD), South Australian Native Title Services (SANTS), Department of the Premier and Cabinet Office for State/Local Government Relations, Local Government Association of South Australia (LGA), PIRSA Legal Unit, PIRSA Fisheries and Aquaculture, Fisheries Compliance Services, Rural Solutions SA, District Council of Lower Eyre Peninsula, Eyre Regional Development Board, and relevant Lower Eyre Peninsula Community groups.
- **The EPNRM Board is concerned that consultation on the Aquaculture (Zones – Lower Eyre Peninsula) Policy 2011, and previous consultation for the Aquaculture (Zones – Tumby Bay) Policy 2011 are taking place whilst the Aquaculture (Miscellaneous) Amendment Bill 2010 (Bill) is yet to pass through Parliament.**

The purpose of the Minister for Agriculture, Food and Fisheries approving the draft Lower Eyre Peninsula aquaculture policy 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 policy. All submissions are then considered by the Aquaculture Advisory Committee (AAC) who can recommend modifications to the draft policy to the Minister such that it does promote ecologically sustainable development.

- The consultation process has been regarded by most as mere “window dressing” because the people who will be most affected by the proposed zoning were not consulted or informed during the design and setting up process. Then we find our input will be reviewed by a group of aquaculture people with vested interests and we have no right of appeal to any biased judgements.
- The Aquaculture Advisory Committee must also accept the fact that there will be only minimal economic advantages for the Tumby Bay district from aquaculture projects, if any; we will suffer all the adverse effects as we are right in the firing line. All the hazards from these ventures come our way – not toward Port Lincoln. We need representation (or at least an observer) when issues affecting our area are being decided for us.

Zone policies developed under the *Aquaculture Act 2001* (the Act) aim to provide certainty for industry stakeholders, improve community confidence and allow opportunities for the structured and orderly aquaculture industry development.

Community engagement for aquaculture zone policies is required under Section 12 of the Act. Notices of public briefings and invitations to make written submissions in relation to both the draft Aquaculture (Zones – Tumby Bay) Policy 2011 and draft Aquaculture (Zones – Lower Eyre Peninsula) Policy 2011 were advertised in local newspapers, including *The Advertiser*, *Koori Mail* and *Port Lincoln Times*, as well as on the PIRSA Aquaculture website.

Draft aquaculture policies are designed by PIRSA before being considered by the AAC and released for community engagement. It would be very difficult to seek feedback on a proposal without first having a draft policy upon which to comment.

Membership of the AAC is determined by the Minister for Agriculture, Food and Fisheries as per section 65 of the Act and consists of 10 persons appointed by the Governor covering a range of expertise including: the *Environment Protection Act 1993*, the aquaculture industry, research and development relevant to aquaculture, environmental conservation and advocacy on environmental matters on behalf of community organisations, and the Local Government Association of South Australia. Individual membership terms cannot exceed three years.

This year, four new members were appointed and five reappointed to the AAC, following a comprehensive recruitment process. Their new appointments were announced publicly via a media release on 7 February 2012. The existing and new members will ensure representation in all principal areas of expertise, as they are drawn from diverse professional backgrounds.

- Given the scope of the draft proposals and the potential effects on the Marine Scale Fishery, it seems logical that there should have been consultation with the MFA at the beginning of the process, prior to this draft being distributed for consultation. That would have enabled the opportunity for discussion of any broad concerns, and, if possible, compromise amendments. This would also have better engaged the MSF licence holders and moreover have allayed any concerns that their issues would not be adequately addressed.

PIRSA records indicate that the MFA was first contacted on 19 July 2011 and given a verbal summary of the Policies intent and then e-mailed a map showing the location of the proposed zones boundaries on the same day. A second e-mail was sent on 3 November 2011 giving advance warning of the public consultation period for the Policy that commenced on 5 November 2011 and concluded 14 January 2012. In addition, a letter was sent to the MFA inviting a submission from the Association. For this

Policy there was specific consultation with the Association well before the Policy was distributed for public consultation.

2.5 Performance Criteria

- **Louth Bay zone needs to have performance criteria assessed year in year out before any increase in [shellfish] biomass otherwise it could/would “crash” the whole zone. What needs to be looked also are lease holders who show no development on their sites, pay no water quality fee’s to PIRSA for a year.**

The issue of aquaculture lease performance is important to PIRSA for a number of reasons. Performance Criteria (PC) have been included as conditions in aquaculture leases and licences for several years. PIRSA has identified the need for a fair and consistent manner of establishing, monitoring, or applying PCs. Additionally, adherence to set PC is considered when assessing a lease to determine the lease and licence period length and licence terms. Taking this action provides greater certainty and clarity to industry and assist in maximising the use of the State’s resources.

The fulfilment of PC specified as a lease condition is important to ensure that aquaculture lessees and licensees are meeting their responsibilities, and utilising the State’s aquatic resources efficiently.

In general, PIRSA conducts annual cost recovery discussions with the aquaculture industry to establish fees for leases and/or licences. Licensees can speak to their relevant industry sector associations regarding specific concerns that relate to the establishment of these fees. However, different fees may be established by different Divisions with PIRSA, for example, water quality fees are established through Biosecurity SA and lease and licence fees through Fisheries and Aquaculture.

3 Shared Resource Use

3.1 Aquaculture Zones

- I am directly affected by the closeness of the western boundary from Point 3 to 4 to 5 [Figure 1]. Point 4 is far too close to coastline for any type of finfish farming.
- To improve the Louth Bay aquaculture zone, the Louth Bay Community Club Committee recommends a change to the western boundary by drawing a straight line from point 3 to point 9 [Figure 1]. This would reduce the impact on that particular stretch of very popular coastline.
- My objection is the boundary between points 3 and 5. I consider this line to be far too close to the coastline. My suggestion is to draw the line from point 3 to 9 [Figure 1] to reduce environmental impact.

The composition and sensitivity of the environment of specific aquaculture sites will again be considered before any occupation and operation of licensees. PIRSA 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 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.

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). Leases for finfish farms are generally granted in waters deeper than 15 metres and over bare sandy substrate. The inshore areas of the Louth Bay aquaculture zone are characterised by shallower water depths. Therefore a different form of aquaculture would be considered by PIRSA as more appropriate in these areas.

Environmental Monitoring Program (EMP) requirements are designed to inform PIRSA, 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's Public Register <https://info.pir.sa.gov.au/aquapr/page/gui3/map.html>.

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 Policy to allow 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.

- The Louth Bay aquaculture zone is adjacent to one of the few visually appealing, easily accessible and popular family beaches in the community, particularly during summer. Due to this fact, could PIRSA reconsider and relocate the Louth Bay aquaculture zone to an area not associated with high general public use. This zoning is similar to putting an industrial area adjacent to a town centre (easy access, less travel time and therefore

money savings to the industrial/aquaculture venture). This model gives little consideration to the use and enjoyment by the general public and/or long term implications. Is it possible to consider moving this zone to an area that is used less frequently by the public (perhaps the bay to the north or Peake Bay/Point Bolingbroke)?

It is proposed to allocate only 5.3% of the total area of Louth Bay aquaculture zone to aquaculture activities. This level of development is not consistent with an "industrial area". Consideration is given to the use and enjoyment by general public of Peake and Moonlight Bay beaches by the location of aquaculture exclusion zones (Figure 2).

- **Overall there is currently 155 ha for subtidal mollusc farming available [in the Louth Bay aquaculture zone] with only 40 ha actively farmed. My very strong opinion on increasing the area to 500 ha would be absolute craziness until such time the current 155 ha is developed and farmed for a reasonable period as to assess the productivity of all sites.**

The increase in area of subtidal shellfish proposed for the Louth Bay aquaculture zone coincides with the Division's understanding that the mussel industry was expanding and required additional farming locations in the area covered by the Policy. Projections for growth in mussel production contained in the Econsearch Report (2011) indicate a 36% increase by 2012/13. Additionally, the change in biomass is intended to offset the possible increase in farming supplementary fed species in the (north) sector of the Louth Bay aquaculture zone. The performance of existing mussel farms, among other factors, will always be considered prior to granting additional mussel licences.

3.2 Aquaculture Exclusion Zones

- DENR is appreciative of the fact that a buffer has been placed around both Buffalo Rock and Spilsby Island following discussions between our agencies. This is a good outcome, and reflects the increasing cooperation between our agencies.
- We want a 1500 metre barrier around all reefs/islands/shoals/upwellings/channels and other recognised fishing spots, refer charts/maps e.g. Boston Island.
- There seems to be no reason to have farms over upwelling/shoals, we would expect a clearance around these of 1.5 km in every direction to keep them in pristine condition, along with a video recording of the bottom condition.

Aquaculture exclusion zones do not permit aquaculture activities within a prescribed area. They are created for a variety of reasons, including: the protection of sensitive habitats, to facilitate movement of vessels, to minimise impacts to visual amenity and to provide for the managed development of aquaculture.

Around established National and Conservation Parks, PIRSA remains consistent with current SA government practice by creating a minimum 1 km wide aquaculture exclusion zone. Similarly, for subtidal aquaculture, an aquaculture exclusion zone is defined within 1 km of the mean spring high water mark of the main land. Waters in Boston Bay are deemed by the Department of Transport, Planning and Infrastructure to be a shipping lane and, accordingly, are to remain free of aquaculture.

- **We insist on a one kilometre aquaculture free boundary around the perimeter of Grantham Island as this area is prime recreational boating and fishing waters.**

Figure 3 shows the location of aquaculture leases adjacent to Grantham Island in the Proper Bay aquaculture zone. While there are three leases within 1 km of the island, an aquaculture exclusion zone

extends to the shore of the island's north western corner. Consequently PIRSA considers access to Grantham Island waters for recreational fishing and boating as sufficient.

- There should be no farm within 1.5 km of Davison Rock, Jane Shoal, Nicolette Shoal, Helen Shoal and Berlin Rock because these shoals are traditionally excellent fishing grounds which are now being destroyed by fish farming (sea floor degradation) and have become inaccessible to boating.

Figure 4 shows the position of aquaculture leases in the proposed Lincoln (inner) sector relative to Berlin and Davison Rocks, and Jane, Nicolette and Helen Shoals. Due to the shallow and rocky nature of the seafloor at these locations, it is not a preferred location for aquaculture infrastructure. As such they are generally avoided by the tuna farming industry when citing sea-cages and PIRSA does not consider it necessary to establish specific aquaculture exclusion zones around them. PIRSA considers access to these areas for recreational fishing and boating as sufficient.

- We propose there be an 8 km “no aquaculture” zone around Buffalo Reef as these are traditionally rock lobster and general fishing grounds.
- It is stated in the [Lincoln] outer zone aquaculture application, that only 10% of the zone is required, if this is the case then we, the commercial marine scale, lobster fishers and recreational fishers demand to be granted an 8 km exclusion zone around Buffalo Reef and Rosalind Shoal as wild catch fishing zones to at least try and preserve some biodiversity that exists in these areas and supports so much valuable fishing ground that is rare in the area by contrast.
- We seek an amendment to the boundary around Buffalo Reef, to take in the reef structures to the south west of Buffalo, as well as the area to the north east and north, due to their value to the marine scale, amateur, charter boats and rock lobster fishers.

Figure 5 shows the location of the Buffalo Rock exclusion zone within the Lincoln (outer) sector. Submissions to the Policy have described the importance of Buffalo Rock and surrounding waters to both commercial and recreational fishers. PIRSA's response to these submissions is detailed in section 3.3 Commercial Fishing and section 3.6 Recreational Fishing, in particular for the Rock Lobster and Prawn fisheries. While there are concerns regarding the potential impact of aquaculture and the lack of documentation of its ecosystem, Buffalo Rock is not being considered for inclusion within the boundaries of the 19 gazetted Marine Parks being developed under the *Marine Parks Act 2007*. In any regular case, PIRSA would remain consistent with current buffering distances used by SA government around established National and Conservation Parks by establishing a minimum 1 km buffer. However in this instance, aquaculture licence holders interested in undertaking development within this zone have indicated that for infrastructure reasons they cannot consider any site within 2 km of Buffalo Rock. Therefore the creation of the 1,651 ha Buffalo Rock exclusion zone is proposed, offering a 2 km buffer zone around the Buffalo Rock ecosystem.

- The EPA is therefore still advocating the buffer distance between the north-west boundary of the proposed Lincoln (outer) sector and the shallow reefs surrounding Spilsby Island be extended to incorporate a distance of at least 2 km as originally proposed by the EPA.

Figure 5 also depicts the location of the Lincoln (outer) sector relative to Spilsby Island and the adjacent Bridget and Rosemary Shoals. The 1 km buffer chosen by PIRSA is consistent with previous policy positions and that provided for Conservation and National Park areas that interact with aquaculture zones. PIRSA prefers to site aquaculture over areas of bare seafloor. Consequently, site specific

observations and descriptions of the seafloor required for all aquaculture license applications are considered sufficient to protect areas of significant benthic biodiversity and value.

The Lincoln (outer) sector 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 of Transport, Planning and Infrastructure. As such, commercial and recreational fishing can still occur inside the aquaculture zone.

- **The exclusion zone around Point Bolingbroke needs to be extended out further. Why doesn't it include all of Peake Bay (from the tip of Point Bolingbroke across to the point at Moonlight Bay)?**
- **If the pink section [exclusion zone] on map C is implemented, this would help a lot of Peake Bay, Moonlight Bay and a large section of Louth Bay from Navigational hazards and over exploitation.**
- **Ideally the Louth Bay exclusion boundaries would be from Point Bolingbroke (point 19) to Point Boston. As this is unlikely, a compromise could be from Point Bolingbroke (point 19) to point 139 near Louth Island [see Figure 1]. Existing leases could be relocated.**

It is current government practice to extend an aquaculture exclusion zone within 1 km of the mean spring high water mark of the main land associated with subtidal aquaculture activities. Figure 2 shows the location of the Lincoln aquaculture exclusion zone around Peake Bay and Point Bolingbroke. Due to the shallow nature of Peake and Moonlight Bays, the aquaculture exclusion zone has already been extended.

- **Aquaculture should not be allowed anywhere near the Sir Joseph Banks group of islands. It is going to destroy them.**

As the proposed Lincoln aquaculture zone will encircle the Sir Joseph Banks Conservation Park, it was consistent with existing zone policy development to make the entire conservation park a single aquaculture exclusion zone with a 1 km buffer. The exclusion zone also partly includes the sea lion buffers established by the Marine Mammal-Marine Protected Areas Aquaculture Working Group. Furthermore, by the creation of this exclusion zone, the possibility of a pilot lease application being lodged in the area is removed, thereby eliminating any ambiguity.

- **Why does the "exclusion" zone at present stop opposite Redcliff Point? Why does it not include the stretch of coastline? Why does it not include the stretch of coastline all the way to Point Bolingbroke and especially Massena Bay and Thuruna? If the exclusion zone were extended to the western boundary of the proposed Tumby Bay aquaculture zone this would prevent further incursions towards the coast which everybody is expecting will happen eventually.**
- **As the owner of a small boat I am restricted to coastal fishing which to date has been sufficient to allow the odd catch of fish in areas from Louth Bay north to Tumby Bay on up to Sheep Hill. Attached to this submission is a chart that identifies my proposal to provide an "aquaculture exclusion zone" for the above area [see Figure 7].**
- **I would therefore suggest that the proposed aquaculture exclusion zone be extended from Louth Bay north through to Tumby Bay at a distance of around 5 nautical miles from coastline.**

Figure 2 shows the location of the Lincoln aquaculture exclusion zone adjacent to Point Bolingbroke and the proposed Tumby Bay aquaculture exclusion zone. It includes Massena Bay and Thuruna.

3.3 Commercial Fishing

- Buffalo Reef and surrounding reef structures up to 8 km are a vital part of the wild catch fisheries along with Rosalind Shoal as fishing areas and path ways to the gulf and we demand the same consideration as the applicants of the proposed aquaculture zoned. It should be noted that north/east of buffalo reef up to 8 km is some of the best area for the pilchard fishery with 20% of the catch often coming from there which in turns as a food bowl for other species migrating up and down the gulf.
- To avoid any impacts on lobster fishing grounds the Council requests an increase to the exclusion zones associated with the Lincoln (outer) sector, namely: directly south from the southernmost tip of Spilsby Island for a distance of four nautical miles and an equivalent increase in the radius of the proposed Buffalo Rock Aquaculture Exclusion Zone.

Commercial fishing including the Sardine, Prawn and Rock Lobster and Marine Scalefish fisheries are important to Port Lincoln. As such, PIRSA has taken into account the potential impacts of the proposed zone on these fisheries interests.

An extensive legislated consultation process to ensure the location of the proposed zones does not impact significantly on 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 a balance is achieved in relation to the economic, environmental and social objectives of the region and the state.

Pelagic species such as Sardines are an important part of the food chain and support a vast number of species in the area. The South Australian Sardine Fishery's area of jurisdiction includes all waters adjacent to the State of South Australia to the edge of the 200 nautical mile Australian Fishing Zone, and whilst the proposed policy overlaps with the Fishery, it is estimated that due to the high mobility of this species the impact to the fishery is minor.

Figure 6 shows the location of the Lincoln (outer) sector relative to the relevant Rock Lobster fishing blocks from which annual catch information can be determined in order to assist in the assessment of aquaculture and fishing interactions. Lobster fishing grounds are generally located over hard substrate (reef) which is not preferred for aquaculture activities. An assessment of the benthic environment is required prior to granting a licence and as such aquaculture sites are generally located over sandy substrate. Consequently any impact to rock lobster fishing grounds is considered to be low.

It should be noted that the proposed aquaculture zones themselves do not exclude other users from entering the area of the zones, however leaseholders are entitled to exclusive occupation of approved sites. Generally around 10% of the total area of an aquaculture zone is allocated for leaseholders. As such, commercial and recreational fishing can still occur inside the aquaculture zones.

- The Association is concerned over potential infrastructure used for farming and associated environmental and sustainability impacts on the fishery during and post aquaculture production. This includes reduced access through leases and safety of crew and vessels while trawling through areas with potential broken, lost or abandoned equipment. A major shift of tuna aquaculture to the Lincoln (outer) sector will also impact on trawling access to the stated area.

Figure 6 shows the location of the Lincoln (outer) sector relative to Prawn fishing blocks 89 and 92. Issues associated with navigation and aquaculture debris are described in sections 3.5 and 1.7 respectively.

Sandy substrate is the preferred fishing habitat for the Prawn fishery that operates in Spencer Gulf and adjacent waters. It should be noted that if fully allocated, the total lease area described by the Policy is 5,000 ha, approximately 13% of the 37,463 ha proposed for the proposed Lincoln (outer) sector. As such fishing can still occur inside the aquaculture zone. The Spencer Gulf and West Coast Prawn Fishermen's Association expressed concern that the Prawn fishery will be impacted by the proposed Lincoln (outer) sector due to displacement of fishing areas. Adjusted catch data for fishing block 92 (Figure 6) for the past 20 years (1990/91 to 2009/10) averaged 23.3 tonnes per year, decreasing to 13.5 tonnes per year for the last 10 years (Cameron Dixon, pers. comm., 27 July 2011). The total catch from the SA Prawn Fishery is on average 1,900t per year (Dixon *et. al.*, 2010).

Following conversations between the SGWCPFA and the Tuna industry the Aquaculture Advisory Council (AAC) recommended to the Minister for Agriculture Food and Fisheries that the Lincoln (outer) sector be reduced by 8% in the proposed Lincoln (outer) sector in an effort to address the issues and strike a compromise between the two industry positions.

3.4 Compliance

- **Who is going to control and enforce the regulations – fines for littering – make all rubbish and ropes identifiable – lighting and marking of zone?**

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

3.5 Marine Parks

- **The draft policy and report must seek to further the objects of the *Marine Parks Act 2007* as required by section 11(3a) of the *Aquaculture Act 2001*. As previously discussed, PIRSA intends to insert criteria into zone aquaculture policies to further the objects and objectives of the Marine Parks Act, once management plans are available (refer minute from Director, Coasts and marine Projects to Director, Fisheries and Aquaculture Policy dated 12 September 2011).**

PIRSA will consider the insertion of relevant prescribed criteria into the Policy when the management plans have been finalised.

- **Section 12(7a) of the *Aquaculture Act 2001* requires that the draft aquaculture policy must not be approved by the Minister responsible for aquaculture without the concurrence of the Minister responsible for marine parks. It is expected that a formal referral regarding the draft Policy will be forwarded to the Minister for Sustainability, Environment and Conservation before the policy is approved.**

A formal referral regarding the draft Policy that seeks concurrence will be forwarded to the Minister for Sustainability, Environment and Conservation before the policy is approved.

3.6 Navigation and Access

- The Louth Bay aquaculture and exclusion zones are traditional fishing grounds for marine scale fishermen. The draft plan proposes too many aquaculture ventures in this area having a direct impact on our business; restricting access to fish stock, also creating hazards.
- 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.
- These waters have always been drifting grounds for fishing and no corridor has been allowed between Louth Bay and Point Bolingbroke.
- For example, there has been concern raised regarding impacts on access to areas such as Peake Bay and Louth Bay pending the level of or location(s) of aquaculture activity in the allocated zones outside of these areas.
- There is a safety issue involved as well, as the safe access to the inner [Louth] bay for any larger and deep draught vessels could be denied by mussel farms and kingfish rings as it is shown as an acceptable area for aquaculture.
- There is no corridor to Boston Island. There is no corridor to Point Boston. There is no corridor to the North Shields sand hills. Insufficient corridor to Axel Stenros boat ramp to Fanny Point. Present boundary around Fanny Point should be moved to the northeast to a line between points 91 and 93 [Figure 1].
- The designated area between points 106, 112, 111 [Figure 1] and the northern tip of Bickers Island (also covering sunken brother) hampers boating into Spalding Cove and this area is a long standing public fishing ground.

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.

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 lease holder will have exclusive occupation rights is within the boundaries of their lease. As such, commercial and recreational fishing can still occur inside the aquaculture zone.

- Fish farms in Peake Bay will be navigational hazards and also deny access to recreational and commercial fishers. These waters have always been drifting grounds for fishing and no corridor has been allowed between Louth Bay and Point Bolingbroke.
- We support an extension of the proposed Louth Bay exclusion zone as permitted aquaculture according to this draft plan will significantly obstruct and adversely affect this area of high public and commercial use.
- The leases are going to be a hazard to the boats which occupy Peake Bay by holiday makers and many locals. There will be no area for locals to enjoy soon with the amount of area aquaculture is consuming.
- Given the rock lobster sector also has access to marine scale species, the issue of potentially restricting access for marine scale fishing on inshore fishing grounds has also been raised. For example there has been concern raised regarding impacts on access to areas such as Peake Bay and Louth Bay pending the level of/location(s) of aquaculture activity in the allocated zones outside these areas.

Figure 2 shows the location of existing aquaculture leases within the Louth Bay aquaculture zone; defined by the Louth Bay (north) and Louth Bay (south) sectors. The Lincoln aquaculture exclusion zone extends over most of Peake Bay and inshore sections of Louth Bay. Existing aquaculture leases do not pose a navigational hazard in Peake Bay and there is sufficient space between aquaculture leases to permit access by recreational fishers to Point Bolingbroke from Louth Bay. Only 500 ha are allocated in the Policy for aquaculture lease area in the Louth Bay aquaculture zone. This is approximately 5.3% of the total area of the Louth Bay aquaculture zone and will permit sufficient access by commercial and recreational fishers.

It should be noted that the proposed aquaculture zones themselves do not exclude other users from entering the area of the zones, however leaseholders are entitled to exclusive occupation of approved sites. Generally around 10% of the total area of an aquaculture zone is allocated for leaseholders. As such, commercial and recreational fishing can still occur inside the aquaculture zones.

- **If you say that your farms don't create any adverse effects or minimal damage to the environment, why would you use only 10% of the area and have to move the farms so regularly?**

Part of the responsible environmental management of aquaculture sites is to allow them to move. Just as fields are left fallow on the land, so must the seafloor be given the opportunity to fallow. By allocating, for example, only 10% of a total aquaculture zone area as lease area, this acknowledges the environmental carrying capacity of the area and gives space for farms to move and allow sufficient access between farms by other users of the those waters.

3.7 Recreational Fishing

- The aquaculture zone "tongue" that projects around Bolingbroke Reef and enters right into Peake Bay would have a major impact on local fishermen and visiting tourists if implemented. These shallow and protected waters will be denied to those who have always used them if they are cluttered up with mussel farms and kingfish rings and will be

effectively become “no-take” zones due to lack of close access to the inner reef and sea grass beds.

Figure 2 shows the aquaculture zone “tongue” referred to extending into Peake Bay. The Policy for this section of the Louth Bay aquaculture zone within Peake Bay exists and has remained unchanged since March 2003 in the (former) Lower Eyre Peninsular Aquaculture Policy.

Recreational fishing can still occur inside the Louth Bay aquaculture zone (covering approximately 9,443 ha). The only area requiring permission from lessees to enter is the immediate lease area (a maximum proposed allocation of 500 ha or 5.3% of the Louth Bay aquaculture zone). PIRSA 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 in considering grant of licence) and consequently recreational fishing and aquaculture do not generally frequent the same waters.

PIRSA use public meetings during the consultation phase of policy development as well as written submissions to provide PIRSA with information about areas of high interest and importance to recreational fishing and therefore minimise resource conflict.

- **As a local recreational fisherman with 30+ years of recreation fishing in Tumby Bay area I have concerns that your proposed aquaculture exclusion zone doesn't allow enough fishing area between the proposed aquaculture zone and the coastline. I would therefore suggest that the proposed aquaculture exclusion zone be extended from Louth Bay north through to Tumby Bay at a distance of around 5 nautical miles from the coastline.**

See section 3.2 Aquaculture Exclusion Zones for an explanation of why the buffer distances have been chosen. Also, note that the Tumby Bay aquaculture exclusion zone is being considered by PIRSA for extension as per Figure 2, as a result of the public consultation process.

It should be noted that the proposed aquaculture zones themselves do not exclude other users from entering the area of the zones, however leaseholders are entitled to exclusive occupation of approved sites. Generally around 10% of the total area of an aquaculture zone is allocated for leaseholders. As such, commercial and recreational fishing can still occur inside the aquaculture zones.

3.8 Aquaculture Zone Development

- **When will this Aquaculture Zone be used and by who?**
- **Once an area is an Aquaculture Zone; even if it is not used, it is never given up. Therefore we want in writing access to fish in the zones and around farms while workers are there without hindrance to workers.**
- **Aquaculture Zones are not cleaned up and restored to original condition. It is cheaper to lose bond money. 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 by and (sic) independent body and made open to the public.**

The development of aquaculture zones is the first step in delivering 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 zone will be.

When the leasable area within the aquaculture zone is allocated 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. The ATAB meet 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.

It is necessary for information purporting conflict of resource issues to be specific and evidence provided where available. In many cases aquaculture is a new user of the resource and processes including negotiation are undertaken to accommodate all users, whilst achieving economic, environmental and social objectives of the region and the State.

It should be noted that the proposed aquaculture zones themselves do not exclude other users from entering the area of the zones, however leaseholders are entitled to exclusive occupation of approved sites. Generally around 10% of the total area of an aquaculture zone is allocated for leaseholders. As such, commercial and recreational fishing can still occur inside the aquaculture zones.

Ongoing environmental monitoring requirements are required for any licensed aquaculture activity on a per licence basis. This is not considered separate to the aquaculture zone. Please refer to section 1.3 Environmental Monitoring Program for details of how sites within zones are monitored for environmental changes.

- **Is there ever going to be a cap on the amount of Aquaculture, especially in the open sea?**
- **There will be no area for locals to enjoy soon with the amount of area the Aquaculture is consuming.**
- **Aquaculture is expanding at an alarming rate in South Australia, with areas provided for aquaculture zones being excessively large.**

Given the many users of State waters, aquaculture development takes place in a spatially 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 (see section 2.4 Consultation). Likewise, other major developments that are occurring around the state that may impact on the aquaculture industry are referred to PIRSA 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 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.

Not all areas of the coast are suitable for aquaculture (e.g. if the coast is inaccessible because of cliffs or if the depth of the water is inadequate). 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.

Across all aquaculture industry sectors, whole weight of production increased from 1,628 tonnes in 1995/96 to 20,247 tonnes in 2010/11. This information is from EconSearch Pty Ltd report (2012), publically available on PIRSA's website. Thus the average annual growth rate of aquaculture in South Australia for the last 14 years was approximately 7%. This growth rate is moderate and consistent.

Table 1 below shows the current area of aquaculture zones, available for lease and excluded for aquaculture, proportionate to the area covered by state waters. At 3.0%, the area defined as aquaculture zones by the *Aquaculture Act 2001* (the Act) is relatively small. If the proposed draft Policy for Lower Eyre Peninsula and the draft Aquaculture (Zones – Tumby Bay) Policy 2011 are approved, then the area will increase to 4.8%. Concomitantly, the areas where aquaculture is not permitted by the Act, known as aquaculture exclusion zones, are proposed to increase to 3.6%. It is important to note that the area of an aquaculture zone is larger than the area available for lease. This allows (1) leases to be moved within an aquaculture zone and 'fallow' where required and (2) adequate space between leases for access by other users.

Table 1. Summary of all aquaculture zones, lease and exclusion zone areas proportionate to state waters, both now and in the future (as at January 2012).

Area	Current		Proposed	
	ha	%	ha	%
State waters	6,094,800	100.0	6,094,800	100.0
Aquaculture zones	182,379	3.0	294,122	4.8
For lease	6,074	0.1	12,374	0.2
Exclusion zones	108,073	1.8	219,816	3.6

The forecast growth of the industry is likely to exceed the amounts already zoned for, so PIRSA 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 to ensure the sustainable growth of the industry 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 fallowing 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 SA's 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 (see section 2.4 Consultation). Likewise, other major developments that are occurring around the state that may impact on the aquaculture industry are referred to PIRSA 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.

4 Social Issues

4.1 Aboriginal Heritage

- On the western side of Point Bolingbroke there are Aboriginal Fish Traps which PIRSA have not marked in any documentation. Any more aquaculture in this sensitive area of coastline is going to impact on the fish traps.

The fish traps are located in the intertidal zone, within the Lincoln aquaculture exclusion zone adjacent to the Louth Bay (north) sector. These are indicated in Figure 15 (page 66) of the draft Report supporting the Policy and determined from the Register of Aboriginal Sites and Objects administered by the Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation Division. As a line of stones at an angle to the shore line, PIRSA does not expect there to be any impact that may be caused by potential aquaculture activities.

4.2 Infrastructure

- What are the rules for storage of unused nets/rings/buoys, why aren't these cleaned up?
- Of particular note in the Aquaculture (Miscellaneous) Amendment Bill 2010 is the potential for clarification of "aquaculture-related activities" particularly as it relates to ancillary activities currently routinely undertaken by the aquaculture industry in aquaculture "exclusion zones". Current practices of constructing, dismantling and long term storage of aquaculture related infrastructure in exclusion zones are at odds with the term "exclusion" zone.

The issue of maintenance and repair of aquaculture infrastructure in State waters currently falls outside the scope of the legislative framework for aquaculture. The activity of storing, cleaning and maintenance do not of themselves constitute aquaculture; which is the farming of aquatic organisms under the definition of the *Aquaculture Act 2001*. Other activities such as safety of boats and towing vehicles to boat ramps, although being part of the aquaculture farming process, are not legislated activities under the *Aquaculture Act 2001* (Act). At this time PIRSA is working to resolve the issue by completing the review of the Act and initiating the review of the *Aquaculture Regulations 2005* and through discussions with the Department of Planning, Transport and Infrastructure.

The deposition of listed pollutants (including waste generated from high pressure water blasting of farming structures) is a breach of the *Environment Protection (Water Quality) Policy 2003*. Therefore, cleaning of farming structures is only permitted to be carried out on land, and the accumulated waste lawfully disposed of to a business permitted to receive such waste material. At present, these land based activities are controlled by the local government body, in this case, the District Council of Lower Eyre Peninsula. If the aquaculture operator wishes to conduct these activities on-shore, approval for the activity is to be sought from the District Council.

To bring particular issues or infringements to PIRSA's attention, you can report them through FISHWATCH, on 1800 065 522, which is a 24 hour telephone service, or through direct dialogue with PIRSA.

4.3 Tourism

- What are these activities and how do they enhance the recreational activities of our own Port Lincoln community?

Across Eyre Peninsula, it has become evident that there is a close affiliation between the tourism industry and aquaculture. For example, 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.

- The tourism figures quoted in the Policy report document are sourced from the SATC's *2010 Eyre Peninsula Regional Profile*. Updated figures for this region are now available and can be quoted as follows:

In the year to September 2011 there were an estimated 321,000 overnight visitors to the Eyre Peninsula region, staying approximately 1.7 million nights. Of this number 74% were intrastate visitors, 22% interstate visitors and 4% were international visitors. On average overnight visitors stayed 5.3 nights, with international visitors averaging 8.2 nights, interstate visitors 6.1 nights and intrastate visitors 5.0 nights. The most popular activities included going to the beach, fishing, visiting national parks and bushwalking (Gary Haines, pers. comm., 6 January 2012)¹.

Policy report updated accordingly.

4.4 Amenity & Visual Impacts

- Environmental charm to our coastline is our major concern.
- As owner of Louth Island and a permanent resident of Louth Bay I do not consider the local community should have their views impaired by the appearance of objects or structures that will impose on their visual amenity or lifestyle or impede their enjoyment of the sea in an area which is greatly utilised by locals, tourists, boaties, fishers and others. It is an area of outstanding beauty and can be viewed from the surrounding hills. Any leases in this area will not enhance or sustain the natural coastal enjoyment of Louth Bay. The draft Policy should be amended to widen the exclusion zones for the within stated reasons but mainly because the North Zone sector is land-locked with little tidal movement flow or flush.
- I strongly believe that the rule under the Principles of Development Control No. 17 should apply here:
(17) Marine aquaculture and other offshore development should:

¹ SATC analysis of IVS and NVS data – Eyre Peninsula, January 2012

(a) minimize adverse impacts on the visual amenity or natural character of the coast and foreshore, particularly in areas of outstanding beauty or areas of high public use.

Aquaculture zones are generally located at least 1 to 4 km from the coast to reduce the visual impact of aquaculture farms to the community and minimise the costs to industry. Through the “Land Not Within A Council Area (Coastal Waters) Development Plan” the State Government controls development on coastal waters. The issue of visual amenity is addressed specifically through the following Principles of Development Control as quoted in the Development Plan:

17: *Marine aquaculture and other offshore development should:*
(a) *minimise adverse impacts on the visual amenity or natural character of the coast and foreshore, particularly in areas of outstanding beauty or areas of high public use;*

There are two key variables that affect the ability of the marine environment to visually absorb aquaculture farming activities. These include the scale of the receiving coastal environment and the degree of visual interest in the view, and the elevation and distance viewed.

As explained in Hill *et. al.* (2001), understanding scale and distance is particularly difficult in marine environments if there are no reference points against which size and distance can be judged. This is most likely to occur where views look out over a vast expanse of sea, where no landfall or structure of known dimensions is visible. There is therefore nothing against which size and distance can be measured.

In these scenarios, where large scale is a dominant characteristic, aquaculture is unlikely to affect this perception. It is likely that if a planned, large new aquaculture development is going to establish a site in the area it will move well offshore, where faster moving water results in easier flushing of nutrients from the farms. These newer finfish farm designs have very little surface structure, and are therefore likely to be difficult to see, but the infrastructure of lighting, if used, and feed barges may be discernable. The size of the feed barges is likely to be relatively small in relation to the expanse of open sea, and will probably be read as a small, but static, boat (Nimmo *et. al.*, 2009).

In calm open sea conditions at 1.5 metre elevation above sea level the horizon exists at an approximate distance of 4.5 km (Bernard Brown Associates Ltd, 2008).

4.5 Economic Impact

- **There is no social or economical benefit to the local community or Louth Bay Township by this new proposed Louth Bay North Aquaculture Zone or other recreational users, but one of a real nuisance value and infringement on their enjoyment of this beautiful area.**

South Australia's natural geography positions the State well to maximise the opportunities aquaculture presents. One attraction for the aquaculture industry is the excellent water quality that stems from low levels of runoff because of the low rainfall and sparse regional population. The State's aquaculture products have a sound reputation in export markets, where a consistent supply and good quality product is able to attract premium prices.

Aquaculture allows producers to plan their harvest to utilise the market variability in demand and to manage processing capacity, storage and transport availability. To improve, maintain and protect this

reputation, aquaculture must be appropriately managed to prevent potential risks to the environment and to minimise conflict with other users of the waters and adjacent coast.

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.

These factors will have a direct impact on the region's wealth and capacity for business, which will ultimately determine the number and size of businesses that can be sustained within a zone. PIRSA uses the information contained in the reports to assist in determining the economic capacity of each zone. The South Australian Food Plan 2007-2010, [South Australian](#) Seafood Industry [Food Plan 2010-2015](#) and the SA Government's development policy *Directions for Regional South Australia* also play a role in PIRSA Fisheries and Aquaculture's assessment of economic impacts.



5 Policy Report

5.1 Appendix D1

- Page 70 – Table – Marine Parks – Objectives – second paragraph should be changed.

Relevant table cell in Appendix D1 on page 70 of draft policy report will be amended to:

South Australia's marine parks will be zoned for multiple-use to protect coastal, estuarine and marine ecosystems, while also providing for continued ecologically sustainable use of suitable areas. This means that most activities, including aquaculture operations, will still be allowed within a marine park. However, some activities will not be permitted in either Restricted Access Zones or Sanctuary Zones in order to provide the necessary level of protection for marine biodiversity and habitats. Both of these zones preclude commercial fishing, recreational fishing and aquaculture operations.

The second paragraph on page 70 will be amended to:

In accordance with section 11(3a) of the Aquaculture Act 2001 the Policy seeks to further the objects of the Marine Parks Act 2007 and has been prepared with regard to the agreement between DEWNR and PIRSA.

- Page 76 – Reference to Aquaculture Tenure Allocation Policy – this was gazetted and commenced in March 2004. However it was revoked on 1 July 2010 by the *Aquaculture Revocation Policy 2010*. There does not appear to be an equivalent replacement for this policy.

Reference on page 76 of the Report to the Aquaculture Tenure Allocation Policy has been removed.

6 Figures

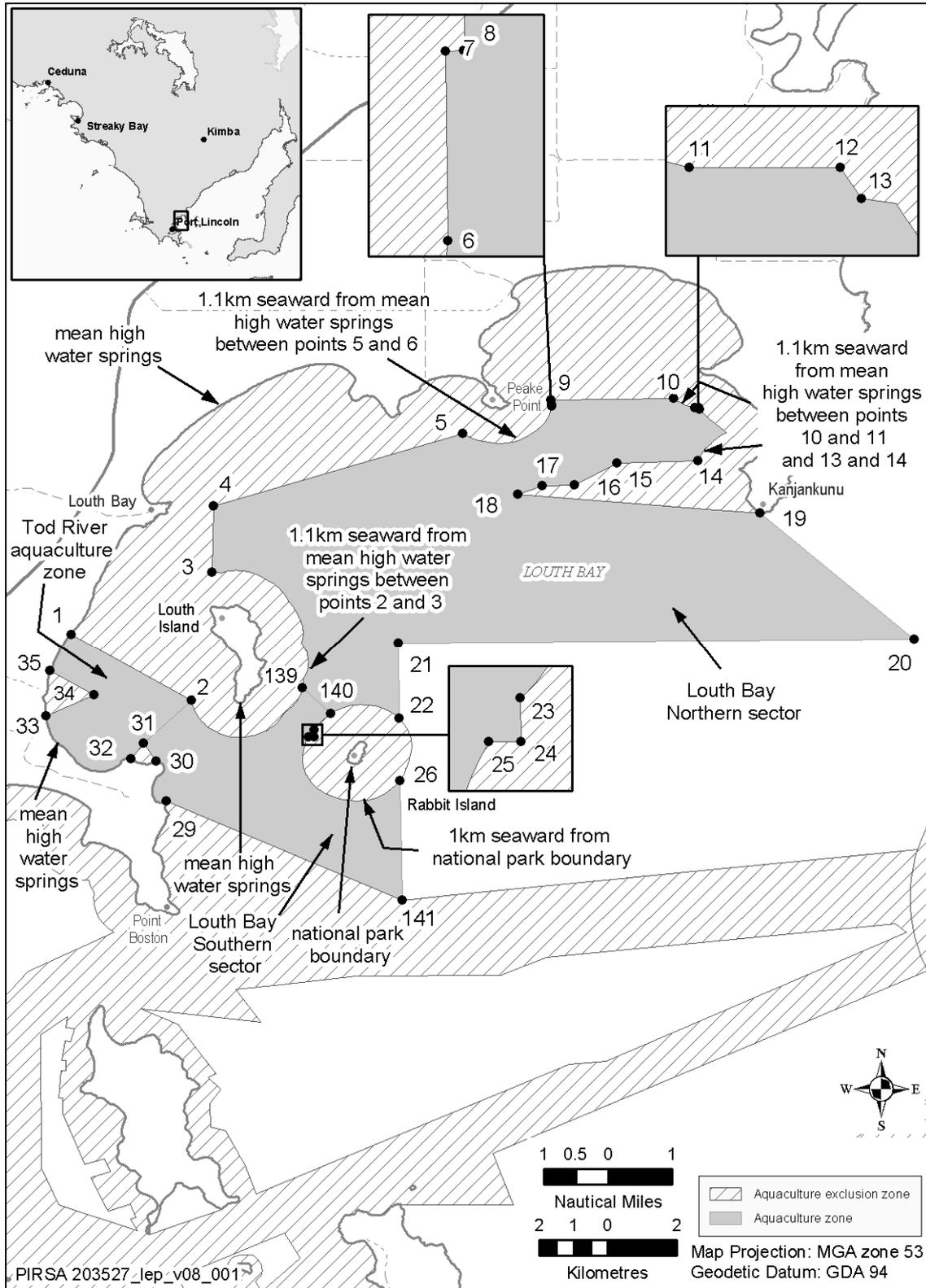


Figure 1. Louth Bay aquaculture zone.

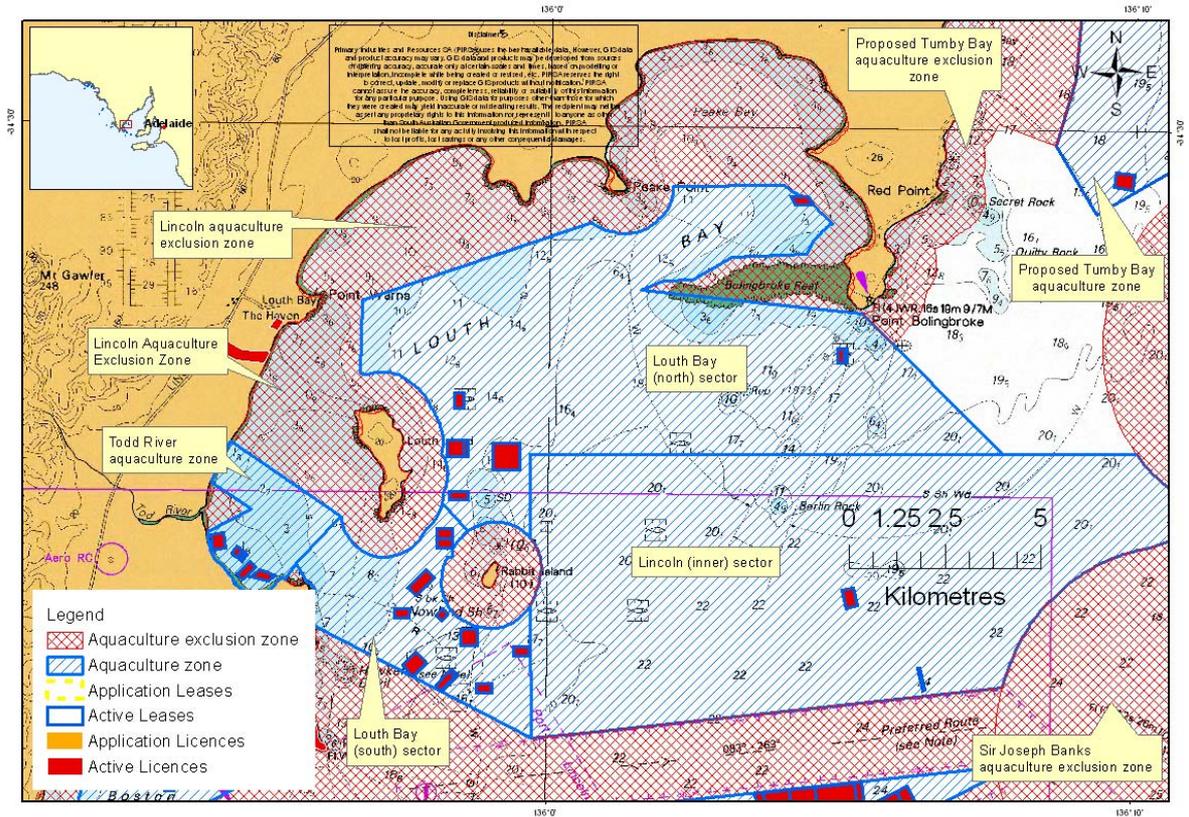


Figure 2. Louth Bay aquaculture zone and proposed Tumbly Bay aquaculture and exclusion zones showing location of existing aquaculture leases.

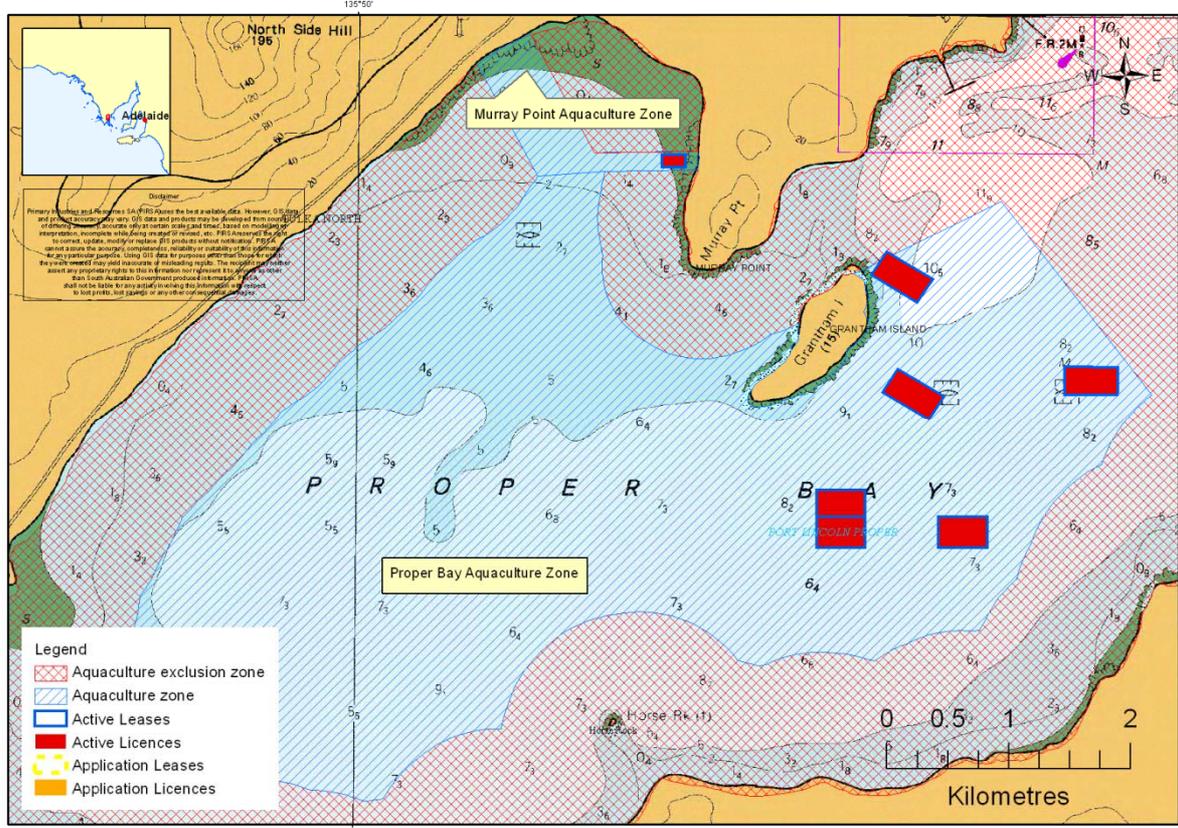


Figure 3. Proper Bay and Murray Point Aquaculture Zones showing location of Grantham Island and proximity to active aquaculture leases.

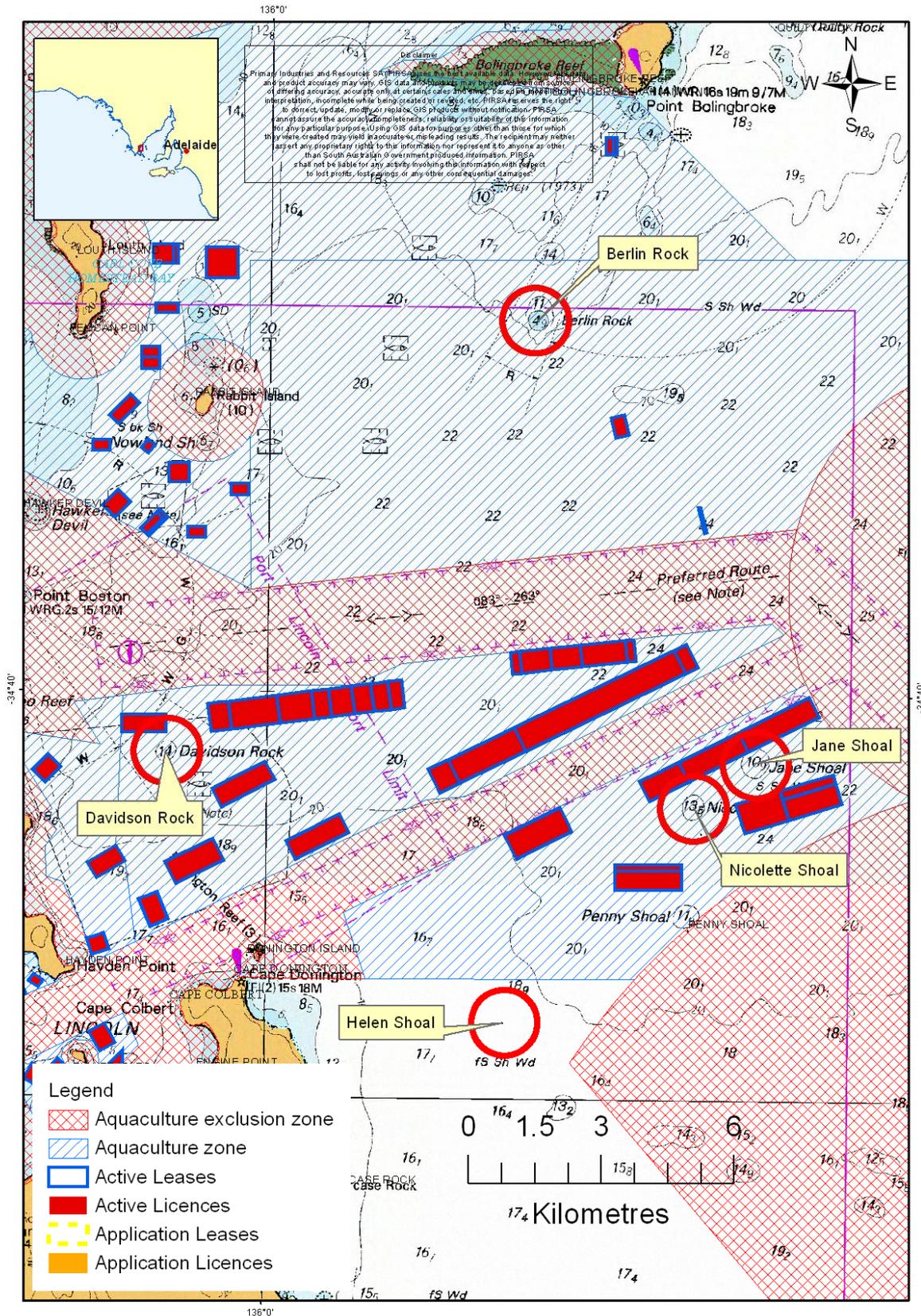


Figure 4. Location of Helen, Nicolette and Jane Shoals and Davidson and Berlin Rocks relative to proposed Lincoln (inner) sector.

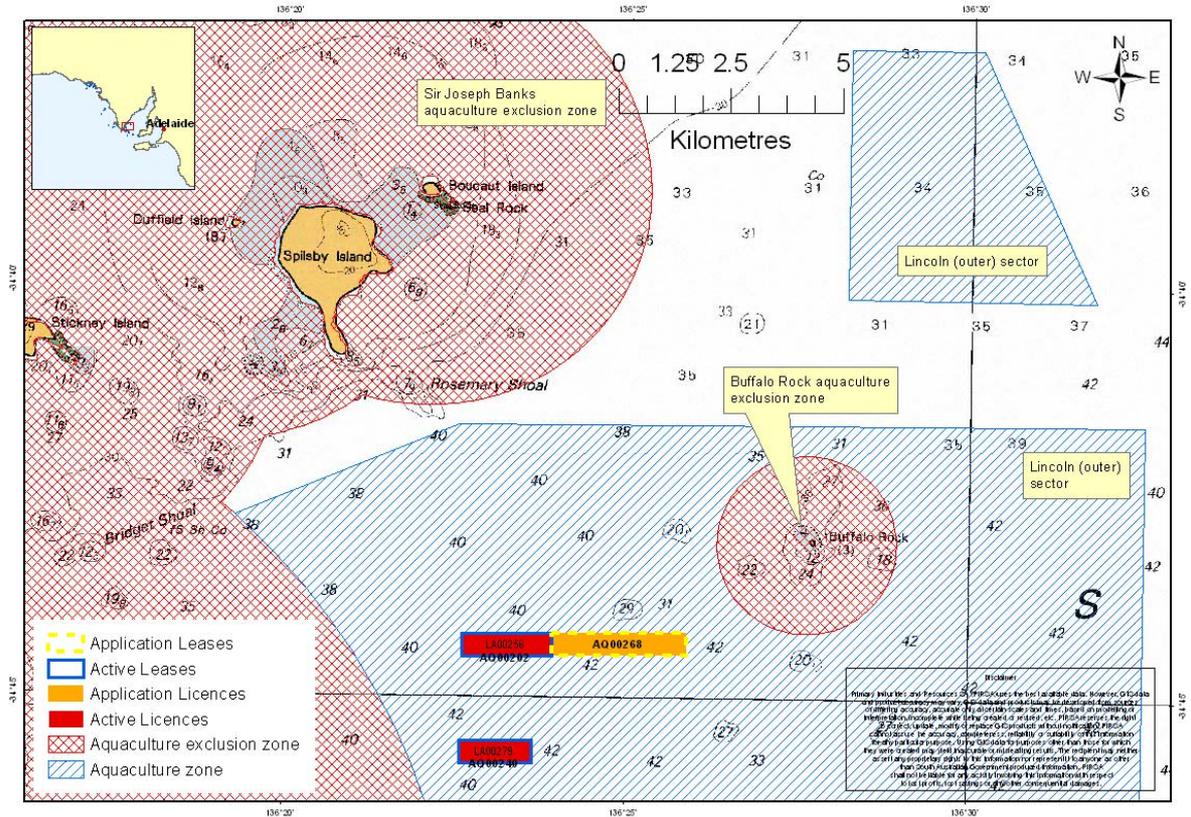


Figure 5. Location of Buffalo Rock aquaculture exclusion zone showing proximity of aquaculture leases to Spilsby Island.

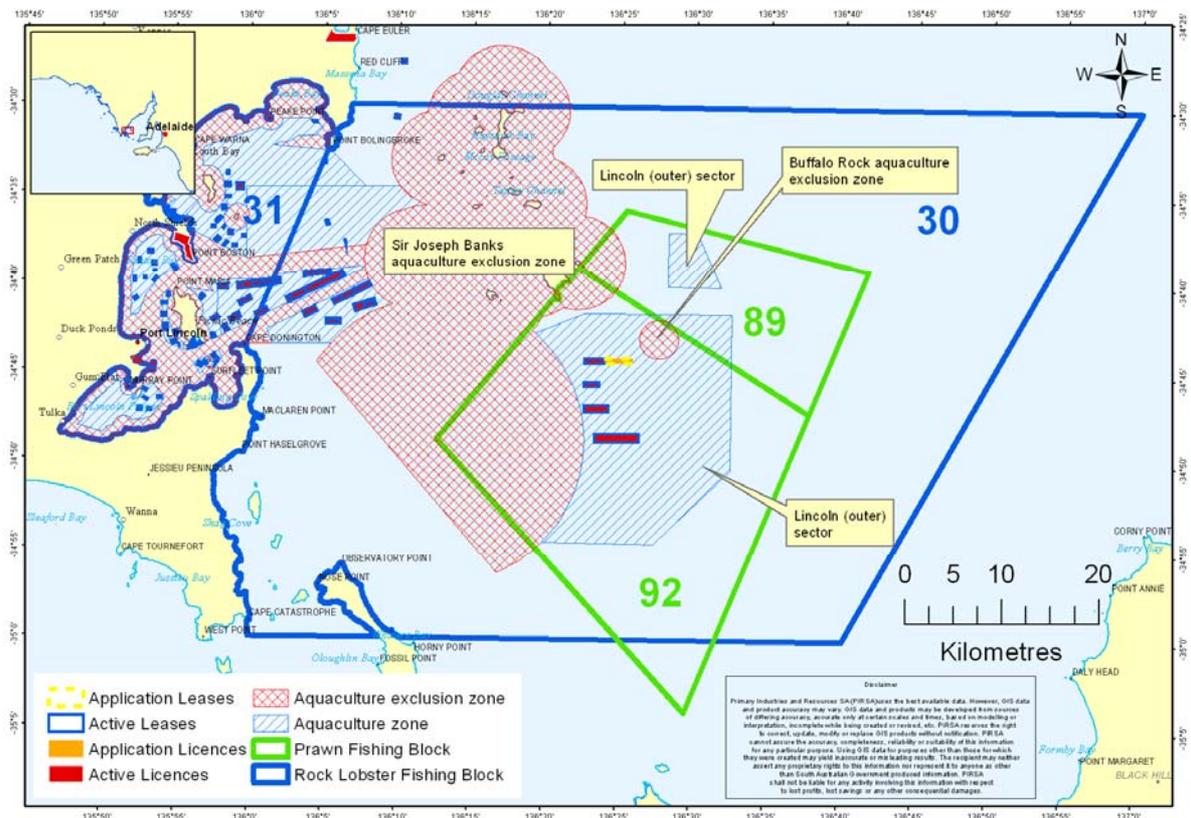


Figure 6 Location of Prawn (89 and 92) and Rock Lobster (30 and 31) fishing blocks relative to proposed Policy and Lincoln (outer) sector in particular.

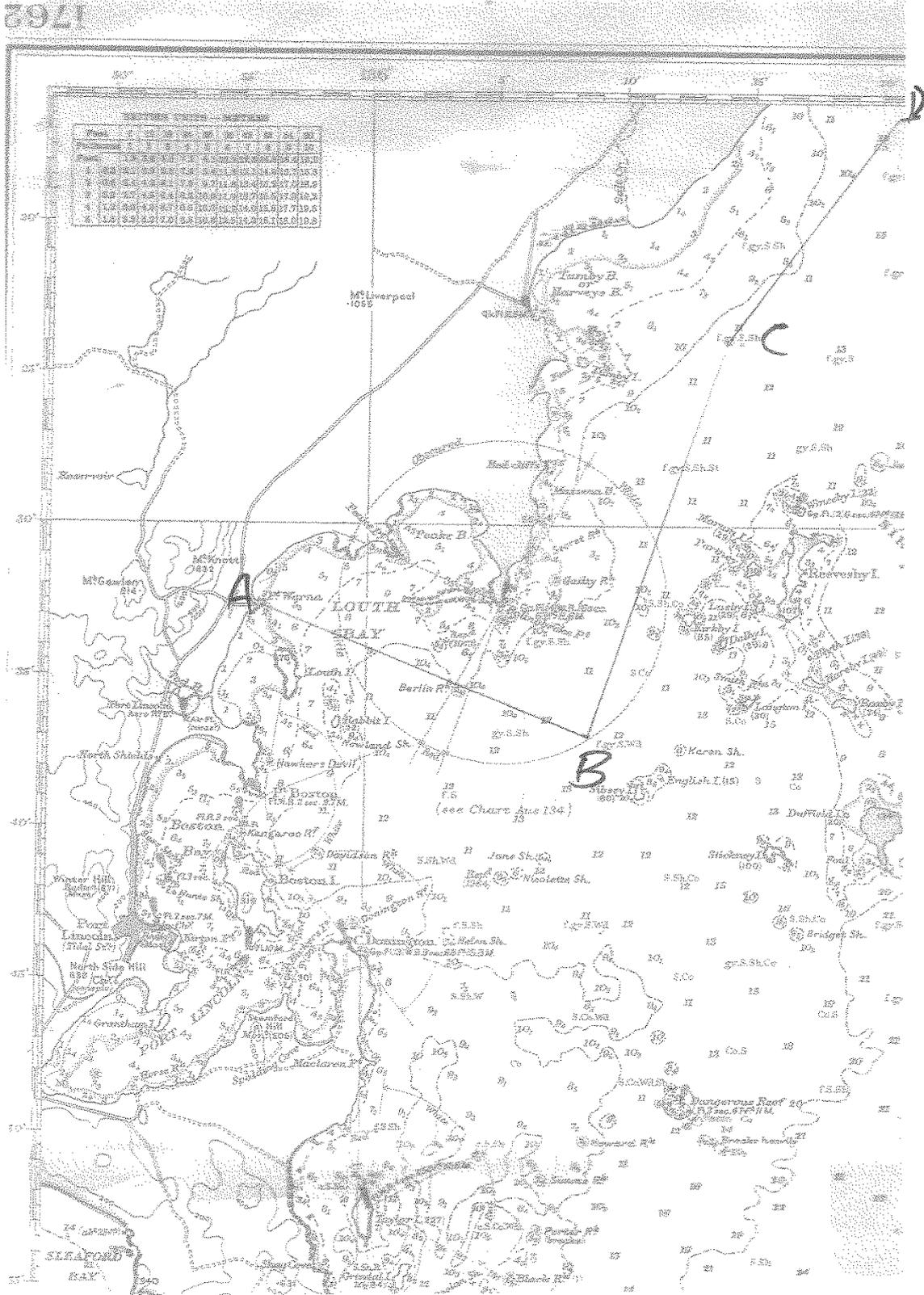


Figure 7. Scan of suggested aquaculture exclusion zone from template submission.

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