



Government of South Australia
Primary Industries and Resources SA

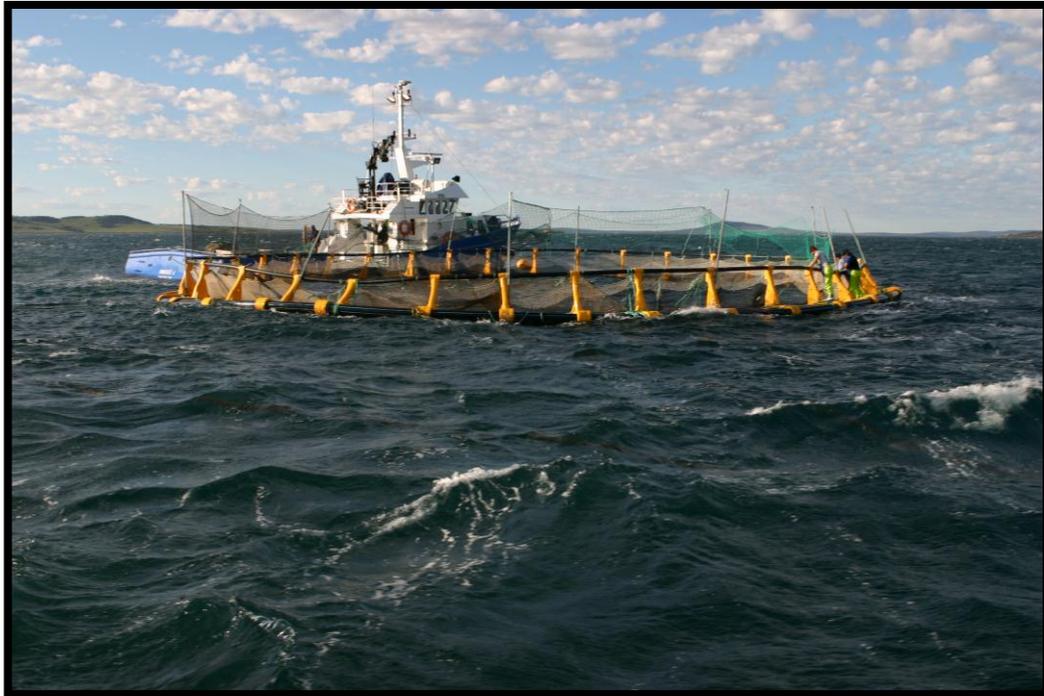


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REPORT
SUPPORTING THE
AQUACULTURE (ZONES—PORT NEILL) POLICY 2008

Gazetted on

4th December 2008



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1 INTRODUCTION

The Minister for Agriculture, Food and Fisheries (“the Minister”) may make aquaculture policies for any purpose directed towards securing the following objects of *Aquaculture Act 2001* (the Act)—

- (a) *to promote ecologically sustainable development of marine and inland aquaculture; and*
- (b) *to maximise benefits to the community from the State’s aquaculture resources; and*
- (c) *otherwise to ensure the efficient and effective regulation of the aquaculture industry.*

In accordance with the *Aquaculture Act 2001*, the Minister for Agriculture, Food and Fisheries (“the Minister”) must prepare a report in relation to a draft policy containing:-

- An explanation of the purpose and effect of the draft policy;
- A summary of any background and issues relevant to the draft policy and of the analysis and reasoning applied in formulating the policy; and
- An assessment of the consistency of the draft policy with the Planning Strategy and any relevant Development Plan under the *Development Act 1993*; and any relevant environment protection policy under the *Environment Protection Act 1993*; and any other relevant plans or policies.

The Port Neill Policy Report (“the Report”) supports the Aquaculture (Zones – Port Neill) Policy 2008 (“the Policy”). Table 1 summarises the zoning framework to be established under the Policy, the classes of permitted aquaculture, the leased area and biomass permitted in the Port Neill aquaculture zone and the aquaculture exclusion zone.

Zone policies are developed to ensure that they are both relevant to community and industry needs and, where possible, issues raised are dealt with during the zone planning phase rather than during the individual licence application process. Consequently, the Report has been developed to inform and involve all stakeholders in the decision making process for the allocation of marine resources to aquaculture.

In summary, the Port Neill aquaculture zone and the Port Neill aquaculture exclusion zone will promote the orderly and efficient development of the aquaculture industry and recognise the industry as a legitimate user of the State’s marine resources, providing clarity regarding the aquaculture industry’s access to marine resources.

The Policy and Report were developed to support the ecologically sustainable development of aquaculture in the Port Neill region. The Policy and Report were developed with input from other government agencies, regional stakeholders, local governments and industry. The Report and the Policy were referred to prescribed bodies and relevant public authorities as well as regional stakeholders, local and indigenous communities, native title claimant groups, local government and industry for comment once approval was given for release by the Aquaculture Advisory Committee (AAC) and the Minister. The Policy and Report were made available for a two-month public consultation period. The Minister subsequently considered the advice of the AAC on all matters raised as a result of the two-month public consultation.

As prescribed by the *Aquaculture Act 2001*, following approval of the Policy by the Minister, the Policy will be referred to the Environment, Resources and Developments Committee (ERDC) of Parliament. The ERDC may approve the Policy, seek amendments to the Policy or object to the Policy. In the event the ERDC objects to the Policy, the Policy will be presented to both Houses of Parliament where either House may disallow it.

ZONE	LEASED AREA		CLASS	BIOMASS			
	Maximum total lease area allowed in the Policy	Lease area already allocated (as at 01 September 2008)		Supplementally fed		Non-supplementally fed	
				(a) Farming of prescribed wild-caught tuna broodstock	(b) Farming of aquatic animals in a manner that involves regular feeding	(c) Farming of bivalve molluscs	(d) Farming of algae
Port Neill aquaculture zone	565 ha (includes 5 ha for research/educational purposes)	20 ha	a, b, c & d	30 tonnes	8,000 tonnes [^]	1,000 tonnes	Limited by licence condition
Port Neill aquaculture exclusion zone	Nil	Nil	Nil	Nil	Nil	Nil	Nil

[^] This is the equivalent to the environmental impact that 8,000 tonnes of finfish would have on the zone.

Table 1 – Summary of zoning framework established under the Aquaculture (Zones – Port Neill) Policy 2008.



2 AMENDMENTS TO DRAFT POLICY

The draft Aquaculture (Zones – Port Neill) Policy 2008 and Report were released for public consultation, in accordance with the *Aquaculture Act 2001*, from 22nd December 2007 to 29th February 2008. A public briefing was held on 7th February 2008 in Port Neill.

Furthermore, PIRSA Aquaculture staff met with industry representatives, the District Clerk of the District Council of Tumby Bay and the Department for Environment and Heritage.

PIRSA Aquaculture received 47 written submissions, providing comment on the draft Policy and draft Policy Report.

After consideration of stakeholder issues and concerns during the two-month consultation period, a number of changes to the draft Policy that underwent public consultation have been made. Most significantly, the exclusion zone has been extended both north and south along the coastline near Port Neill to protect recreational, commercial and conservation interests.



3 GENERAL

The Policy defines the broad framework for aquaculture management within the defined zones, including through the specifying the permitted classes of aquaculture and the prescribed criteria that apply to each zone. More detailed considerations such as the size of each lease; the farming structures permitted on each licence and the stocking densities for different species are managed at the individual licence level. Such management tools do not form part of the zoning policy.

Approval of leases and licences in aquaculture zones will be subject to the provisions of the *Aquaculture Act 2001* and the *Aquaculture Regulations 2005*, and relevant lease and licence conditions. An assessment of individual site suitability (including an Ecologically Sustainability Development Assessment) and criteria outlined in the Aquaculture Tenure Allocation Policy are considered during the assessment. Ongoing environmental monitoring provides information that is an important input to the adaptive management of aquaculture. Further information about licensing is provided in a stakeholder information paper available on the PIRSA Aquaculture web site¹ or by accessing the PIRSA Aquaculture Public Register².

Class of aquaculture

Classes of aquaculture relate to the feeding requirements of aquatic organisms, i.e. whether the organisms are supplementary fed or not supplementary fed. Grouping the classes of aquaculture around the feed inputs focuses the policy on the key determinant of environmental impact, namely, the amount of nutrient that is released into the environment (see section 8.9). This format provides flexibility to adaptively manage aquaculture activity through the conditions place on individual licences.

The classes of aquaculture that may be permitted under the Aquaculture (Zones-Port Neill) Policy 2008, are—

- (a) the farming of prescribed wild-caught tuna broodstock; and
- (b) the farming of aquatic animals (other than prescribed wild-caught tuna) in a manner that involves regular feeding; and
- (c) the farming of bivalve molluscs; and
- (d) the farming of algae.

The first two of these (a and b) involve the supplemental feeding of the farmed animals, whereas no supplemental feeding is associated with the latter two classes (b and c) – supplementally feeding is the giving of feed to aquatic organisms to supplement any naturally available food.

Biomass limits

Control of the amount of nutrients released into the environment is achieved at the zone policy level by setting upper biomass limits for each zone, i.e. the maximum biomass of organisms farmed under a particular class of aquaculture at any one time. Environmental impacts are also managed by monitoring impacts on an on-going basis, through the environmental monitoring and reporting requirements stipulated in

¹ PIRSA Aquaculture web site: <http://www.pir.sa.gov.au/sector118.shtml>

² PIRSA Aquaculture Public Register web site: <http://www.pir.sa.gov.au/dhtml/ss/section.php?sectID=2126&tempID=1>

the *Aquaculture Regulations 2005*. Adaptive management enables the modification of upper biomass limits for zones and changing aquaculture licence conditions.

The Policy sets biomass limits for the farming of aquatic animals in a manner that involves regularly feeding (supplementally fed animals) in terms of a tonnage of finfish biomass equivalents. The net amount of nutrient release by various types of supplementary fed organisms differs. For example, on a per unit biomass basis, the amount of nutrient released is greater for finfish than abalone; however, the details of this are yet to be determined. To accommodate appropriate use of this information in the future, the concept of finfish biomass equivalents has been adopted, where upper biomass limits are expressed and benchmarked in terms of an amount of biomass that would have an environmental impact equivalent to a stated biomass of finfish.

The impacts of overstocking systems with aquatic organisms that do not involve supplemental feeding are likely to be felt by industry (through decreased production) well before any potential environmental harm. For example, in the case of filter feeders like mussels, production is self-limiting since industry performance overall will be determined by the amount of suitable food available in the water. As a result, the focus of PIRSA Aquaculture's regulatory activity for aquatic organisms that does not involve supplemental feeding is to meet the Government's responsibility "to maximise benefits to the community from the State's aquaculture resources", i.e. to ensure that a zone is not overstocked to the general detriment of the aquaculturalists operating in the area.

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

In the case of bivalve molluscs, the Minister cannot increase the maximum biomass limit unless satisfied, after consultation with relevant aquaculture industry groups, that such an increase would not compromise the overall productivity of bivalve mollusc farming operations in the area.

4 AQUACULTURE ZONE AND AQUACULTURE EXCLUSION ZONE

The Policy covers an area comprising the State waters off the coast of Port Neill on the Eyre Peninsula as depicted in Figure 1. The Policy establishes two zones as follows—

4.1 Port Neill aquaculture zone

An aquaculture zone identifies a zone within State waters in which specified classes of aquaculture will be permitted (subject to this Act and other applicable Acts) (Section 11(2) of the *Aquaculture Act 2001*).

The Port Neill aquaculture zone incorporates an area of approximately 4,913 hectares and is located between 1.5 and nine kilometres from Mean High Water Springs (MHWS). The zone is depicted in Figure 1 and is described in the Aquaculture (Zones - Port Neill) Policy 2008.

The prescribed classes of aquaculture are:

- (a) the farming of prescribed wild-caught tuna broodstock; and
- (b) the farming of aquatic animals (other than prescribed wild-caught tuna) of in a manner that involves regular feeding; and
- (c) the farming of bivalve molluscs; and
- (d) the farming of algae.

The zone provides for a maximum of 565 hectares of lease area for aquaculture. This is approximately 11% of the total area of the zone. At least five hectares will be used or available for use for the purposes of research and/or education.

Twenty hectares is already allocated in the zone. The remaining farming area will need to be granted through an allocation process approved by the Aquaculture Tenure Allocation Board (ATAB) involving tendering or a similar competitive process (Section 33 of the *Aquaculture Act 2001*).

The maximum biomass of prescribed wild-caught tuna broodstock for the Port Neill aquaculture zone is 30 tonnes.

The biomass of aquatic animals (other than prescribed wild caught tuna) being farmed in a manner that involves regular feeding in the zone must not exceed an amount that would, in the opinion of the Minister, have an environmental impact on the zone equivalent to the environmental impact the 8,000 tonnes of finfish would have on the zone. This class includes, but is not limited to, finfish and abalone. This amount was calculated using a predictive model developed by SARDI (Tanner et al, 2007).

The maximum biomass of bivalve molluscs is 1,000 tonnes.

The Minister may increase the biomass of bivalve molluscs by notice in the Gazette if satisfied that such an increase would not compromise the overall productivity of bivalve mollusc aquaculture operations in the zone.

A biomass limit for algae is yet to be determined. No specific limits have been applied to the biomass for algae farming, given the industry is still in its infancy. PIRSA Aquaculture will monitor developments and consider the need for future regulation.

Ongoing environmental monitoring provides information that is an important input to the adaptive management arrangements used to manage and regulate the industry. Additional information on the monitoring requirements of licence holders can be found in sections 22 – 25 of the *Aquaculture Regulations 2005* and in section 9 of the Stakeholder Information Paper available on the PIRSA Aquaculture website.

4.2 Port Neill aquaculture exclusion zone

The Port Neill aquaculture exclusion zone provides a buffer between aquaculture development and other marine resource uses and areas of high conservation significance.

The Port Neill aquaculture exclusion zone encompasses an area of approximately 7,226 hectares. The zone is depicted in Figure 1 and is described in the Aquaculture (Zones - Port Neill) Policy 2008.

The exclusion zone also encompasses the two existing aquaculture development leases and corresponding finfish aquaculture licences just off the coast from Cape Hardy. The Policy is written in such a way that whilst these leases remain in their current location, they are part of the aquaculture zone and not part of the exclusion zone, however, once the leases have been moved into the outer section of the aquaculture zone, the area they currently cover will revert to exclusion zone.

The aquaculture exclusion zone includes:

- A four kilometre buffer around the Port Neill township. The buffer incorporates the navigation channel that exists off Port Neill as well as an artificial reef.
- A one kilometre buffer around Cowleys Beach, which is located on the Coast Road midway between Tumby Bay and Port Neill.
- A one kilometre buffer around Lipson Island Conservation Park. The conservation park is proclaimed under the *National Parks and Wildlife Act 1972*. The intent of having a buffer zone abutting the reserve is consistent with *The Land Not Within A Council Area (Coastal Waters)* development plan which states “Marine aquaculture and other offshore development should be located at least: ... (b) 1000 metres seaward from the boundary of any Reserve under the *National Parks and Wildlife Act*, unless a lesser distance is agreed with the Minister responsible for that Act”.
- A 500 metre buffer around two shipwrecks (one located off Cape Burr and the other near Lipson Island Conservation Park).





5 SUBSEQUENT DEVELOPMENT PLAN AMENDMENTS

The Aquaculture (Zones – Port Neill) Policy 2008 is consistent with the relevant provisions of the Land Not Within A Council Area (LNWCA) (Coastal Waters) development plan in that it seeks to ensure the ecologically sustainable development of the aquaculture industry and recognises and respects other users of the marine resource.

The area affected by the Policy falls within the Land Not Within A Council Area (Coastal Waters) development plan.

This development plan currently contains policies to guide aquaculture development (Objective 35 and Principles of Development Control 13, 17-19, 25, 26, 38 and 41). However, to provide more certainty in regard to appropriate locations for aquaculture development, specific aquaculture zones are to be identified within the Development Plan that give effect to the Aquaculture (Zones – Port Neill) Policy 2008.

An amendment to the Development Plan may be undertaken, pursuant to Section 29 of the *Development Act 1993*, to give effect to Aquaculture Policies gazetted under the *Aquaculture Act 2001*.

Section 29 of the *Development Act 1993* enables the Minister for Urban Development and Planning to amend a development plan in accordance with an approved aquaculture policy under the *Aquaculture Act 2001*. Accordingly, it is proposed that the Port Neill aquaculture zone, specified in the Policy be incorporated into the LNWCA (Coastal Waters) development plan.

Specific details are as follows—

Amend the Land Not Within A Council Area (Coastal Waters) Development Plan

Port Neill

Establish a new “Aquaculture (Port Neill) Zone” with the following Objective and Principle of Development (PDC):

OBJECTIVES

- 1 The ecologically sustainable development of (i) the farming of aquatic animals (other than prescribed wild-caught tuna) in a manner that involves regular feeding; and (ii) the farming of prescribed wild-caught tuna broodstock; and (iii) the farming of bivalve molluscs; and (iv) the farming of algae.

PRINCIPLES OF DEVELOPMENT CONTROL

Development should be primarily in the form of—

- (a) the farming of aquatic animals (other than prescribed wild-caught tuna) in a manner that involves regular feeding; and
- (b) the farming of prescribed wild-caught tuna broodstock; and
- (c) the farming of bivalve molluscs; and
- (d) the farming of algae;

and the structures associated with the farming of those organisms.

PROCEDURAL MATTERS

Public Notification

Categories of public notification are prescribed in schedule 9 of the *Development Regulations 2008*.

It is proposed to insert a new zoning map to delineate the extent of the Aquaculture (Port Neill) Zone (see Figure 6).

It is intended to revoke part of the *Development (Aquaculture Development No 2) Variation Regulations 2006* (The South Australian Government Gazette, 16 February 2006. p618) that amended the *Development Regulations 1993* when the above development plan amendment comes into operation.

6 CONSTRAINTS

The following matters were taken into account in creating this zone policy, in order to secure the objectives of the *Aquaculture Act 2001*—

- (a) The development and management of aquaculture resources in coastal waters adjacent to Port Lincoln within the framework of ecologically sustainable development;
- (b) The protection of proclaimed conservation areas and Australian Sea-lion (*Neophoca cinerea*) breeding colonies in the region;
- (c) The distribution and habitat of protected species;
- (d) The protection of historic shipwrecks;
- (e) The protection of sites of Aboriginal heritage value in the region;
- (f) The impact of aquaculture development on the tourism and residential qualities of the region;
- (g) The impact of aquaculture development on commercial and recreational fishing in the region; and
- (h) The impact of aquaculture on sensitive species and habitat in the region.

Zone development takes into consideration the following—

- National parks, conservation parks and conservation reserves proclaimed under the *National Parks and Wildlife Act 1972*. Aquaculture development should be located at least 1,000 metres seaward from these reserves;
- Marine parks and reserves;
- Aquatic reserves under the *Fisheries Management Act 2007*;
- Recreation reserves;
- Indigenous heritage sites recorded under the Register of the *Aboriginal Heritage Act 1988*;
- Non-indigenous and natural heritage sites. Heritage sites are recorded under the register of the *Heritage Act 1993*;
- Shipwrecks protected under the *Historic Shipwrecks Act 1981* or the Commonwealth *Historic Shipwrecks Act 1976*. Aquaculture development within the zone should be located at least 500 metres from a protected shipwreck;
- Sites of scientific importance including geological monuments;
- The health status of farmed and wild stock in the area, with particular emphasis on the occurrence of diseases listed as notifiable under the *Livestock Act 1997*;
- Mineral reserves;
- Areas valued for their outstanding beauty or amenity;
- Navigational channels and shipping lanes. Aquaculture development within the zone should be located not to obstruct nor interfere with navigation channels, access channels and shipping lanes;

- Ports. Flinders Port manages the port waters at Port Lincoln in accordance with the *Harbours and Navigation Act 1993*. The boundary of the port is described in schedule 3a of the *Harbours and Navigation Regulations 1994*;
- Recreational fishing sites. Aquaculture development within the zone should be located to take into account the requirements of traditional fishing grounds;
- Known Indigenous fishing sites;
- Known commercial fishing sites;
- Launching sites. Aquaculture development within the zone should avoid frequently used natural launching sites, safe and secure anchorage areas;
- Diving areas;
- Shipping. Aquaculture development within the zone should avoid commercial shipping movement patterns or activities associated with existing jetties and wharves; and
- Threatened species. Aquaculture development within the zone should avoid habitats of threatened species (under NPW Act or EPBC Act). A 15 kilometre buffer around major Sea-lion colonies and 5 kilometre buffer around minor colonies have been established to ensure no finfish aquaculture occurs in these areas.

Zone development also considers—

- Flushing currents – current rates have to be sufficiently high to allow appropriate dispersal of non-solid wastes from the site. Currents should not be strong enough to cause problems with securing of aquaculture facilities.
- Water depth – allow sufficient room between the bottom of farming infrastructure and the sea floor.

6.1 Physical Characteristics

The Dutton Biounit extends from Salt Creek Beach (near Tumby Bay) to Cape Driver (Arno Bay) on the western side of the Central Spencer Gulf (Edyvane, 1999).

It is an area of low wave energy with prevailing offshore winds (Edyvane, 1999). Water depths are up to 24 metres with currents at mid-gulf estimated at 30cm/sec peak flows (Parsons Brinckerhoff & SARDI, 2003). The area experiences surface water temperatures of 12.4°C during winter and 22.8°C during summer (Petruševics et al, 1998).

Seagrass meadows comprise 98% of the inshore subtidal habitats. On sandy substrates, subtidal communities are dominated by *Amphibolis antarctica* in waters below 6 metres and *Posidonia sinuosa* in deeper waters. Extensive meadows occur south of Port Neill and north of Lipson Island (Edyvane 1999).

The adjacent coastline is mainly low sediment cliffs, granite headlands, and low energy beaches backed by stable foredunes and fronted by narrow sandflats.

6.2 Marine Planning

The *Marine Planning Framework for South Australia* (Government of South Australia, 2006b) requires statutory policies to have regard to Marine Plans.

The draft Spencer Gulf Marine Plan (Government of South Australia, 2006a) identifies values of the Spencer Gulf based on ecosystem based management, including environmental, economic, social and Indigenous and non-indigenous cultural values, and identifies ecologically rated (ER) zones to accommodate a range of activities.

“The ER zones are graded as follows:

- *ER1 Zone - Containing the highest diversity of marine, coastal and estuarine habitats and species.*
- *ER2 Zone - Containing a high diversity of marine, coastal and estuarine habitats and species.*
- *ER3 Zone - Containing a moderate diversity of marine, coastal and estuarine habitats and species.*
- *ER4 Zone - Consisting of areas for which the available scientific data is inadequate to identify their importance to the maintenance of biodiversity, ecological health and productivity of the ecosystem.”* (Government of South Australia, 2006a)

The majority of the Port Neill aquaculture zone falls in the ER3 classification (approximately 60%), while the remainder falls in the ER2 and ER4 classifications.

The Marine Planning Framework (Government of South Australia, 2006a) requires that:

- Development and use of the marine, coastal and estuarine environment in the ER1 zone is managed such that it will cause negligible impacts on the biodiversity, habitats and ecological processes important to the health and productivity of the ecosystem
- Development and use in the ER2 zone is managed to ensure minor impacts on the marine, coastal and estuarine biodiversity, habitats and ecological processes of the ecosystem
- Development and use in the ER3 zone is managed to ensure that moderate environmental impacts to the biodiversity, habitats and ecological processes do not jeopardise the health and productivity of the ecosystem
- Development and use of the marine, coastal and estuarine environment in the ER4 zone is preceded by research to improve knowledge of the biodiversity, habitats and ecological processes.

The aquaculture zones are consistent with the principles of the Marine Planning Framework.

6.3 Technical summary

Two existing aquaculture sites (LA00071, LA00072) are located approximately 900 metres east of Cape Hardy (Aquaculture Public Register, 2007). A survey of the seafloor undertaken for these sites showed sparse biota. No seagrass populations or benthic community structure was observed within the leased area. The biota observed on the lease sites comprised very small clumps of Chlorophyta and Phaeophyta. The substrate was found to compose very coarse sand with 6% silt and clay. No reef or rock formations were observed (Development Application 010/0195/00).

Extensive seagrass meadows occur south of Port Neill and north of Lipson Island. Seagrass meadows comprise 98% of the inshore subtidal habitats (Edyvane 1999). Seagrass communities commence relatively close to shore. The dominant species are the tape weed (*Posidonia australis* and *P. sinuosa*) with *Heterozostrea tasmanica* and *Amphibolis antarctica* being the sub-dominant species in sheltered waters. These species are found in depths of up to ten metres, but become nonexistent after depths of 12-14 metres (Development Application 010/0195/00). The Port Neill aquaculture zone is sited in deeper waters so as to avoid *Posidonia* spp. communities.

The Port Neill area was subject to a technical investigation by Parsons Brinckerhoff & SARDI (2003). This investigation identified the spatial distribution of benthic assemblages (Figure 3). The area off Cape Hardy within the Arno Bay study site was found to comprise seagrass in shallow waters less than one kilometre from shore, with the area of deeper water (15-24 metres) consisting of diverse invertebrates (sparse) (Parsons Brinckerhoff & SARDI, 2003).

6.4 Indigenous Heritage

It is acknowledged that it is vital to the well being of Aboriginal community members that their traditional values and practices are respected and that their heritage and native title interests are taken into account when aquaculture developments are planned for a particular area. PIRSA Aquaculture facilitates the involvement of local Aboriginal representatives in its process for developing and amending aquaculture policy and zoning.

There is no Indigenous Land Use Agreement (ILUA) in this area (National Native Title Tribunal, Commonwealth of Australia 2006b). A move to create an ILUA with Naou-Barngarla and Barngarla commenced in 2006. Under the ILUA model, separate agreements can be formulated with the different groups involved, such as fishers or aquaculture operators, and local, State and Federal Government (Virginia Leek, pers. Comm., 14 September 2007).

The Barngarla Native Title Claim (SC96/4) extends into coastal waters. (National Native Title Tribunal, Commonwealth of Australia 2006a).

A search of the Register of aboriginal sites and objects administered by the Department for Aboriginal Affairs and Reconciliation indicates that it currently has no entries for Aboriginal sites, objects or remains in the Port Neill area. However, the archive does not purport to be a comprehensive record of all Aboriginal sites, objects and remains in South Australia. Sites or objects may exist in the area even though they are not recorded (Beverly Nicks, pers. comm., 22 May 2007).

An Aboriginal fishtrap complex is located at Salt Creek (Edyvane 1999).

6.5 Reserves And Conservation Areas

Lipson Island Conservation Park is a 7.55 hectare island park about 500 metres offshore from the coast at Lipson Cove. It is a small sand and granite islet, semi-submerged intertidal reef and tidal sand bar. The reserve is a breeding, roosting and feeding habitat for sea birds and shore birds.

Lipson Island Conservation Park is listed on the Register of the National Estate. The Policy contains a 1 kilometre buffer around the conservation park.

The intent of having an exclusion zone abutting reserves proclaimed under the *National Parks and Wildlife Act 1972* is consistent with *The Land Not Within A Council Area (Coastal Waters)* development plan which states “Marine aquaculture and other offshore development should be located at least: ... (b) 1000 metres seaward from the boundary of any Reserve under the National Parks and Wildlife Act, unless a lesser distance is agreed with the Minister responsible for that Act”.

6.6 Sensitive Habitats

Coastal wetlands of national importance in the region include Tumby Bay on the Eyre Peninsula (Baker, 2004).

Some tidal flats occur at the mouth of the Dutton River, while a small tidal creek/saltmarsh system occurs just to the north of Port Neill. Coral communities are known to occur in the Port Neill-Arno Bay area.

6.7 Protected Species

The *National Parks and Wildlife Act 1972* provides the legislative framework dealing with native fauna in this State. Most native mammals, reptiles and birds are protected in South Australia. Rare, vulnerable and endangered species are listed in Schedules 7, 8 and 9 of the Act.

The Lipson Island Conservation Park contains seabird breeding areas (Edyvane, 1996).

The nearest breeding and habitat areas for the New Zealand Fur-seal (*Arctocephalus forsteri*) and the Australian Sea-lion is Sir Joseph Banks conservation park some 45 kilometres to the south. A major Australian Sea-lion colony exists at Dangerous Reef located approximately 64 kilometres to the south.

The *Fisheries Management Act 2007* provides the provisions, under Section 71 for interactions with marine mammals, in particular killing or injuring of the same. Under the provisions of Section 71(1)(a) of the Act, a person must not kill, injure or molest, or cause or permit the killing, injuring or molestation of, a marine mammal. Under the same Section of the Act it, is an offence to take protected species, which include white shark (*Carcharodon carcharias*), also known as great white shark. A statutory defence exists in cases where the defendant proves that the alleged offence was not committed intentionally and did not result from any failure on the part of the defendant to take reasonable care to avoid the commission of the offence.

Syngnathid fishes are protected under the provisions of section 71 of the *Fisheries Management Act 2007*. Syngnathid fishes are likely to be present, especially in the seagrass, algal and reef assemblages. It is known that at least some seahorses are abundant around finfish cages, using them as an alternative habitat to seagrass beds and algal assemblages.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) addresses the protection of matters of national environmental significance.

A search of the Protected Matters Database was conducted on the Australian Government Department of the Environment and Water Resources web site (2007) to obtain a list of the threatened species that are considered to potentially occur in the region. This data is derived primarily from general distribution maps, and thus it is likely that at least some of the species listed will not occur.

Threatened species listed on the data base include—

- Australian Sea-lion (*Neophoca cinerea*) (listed as vulnerable) – species or species habitat may occur within area.
- Blue whale (*Balaenoptera musculus*) (listed as endangered) – species or species habitat may occur within area.
- Southern right whale (*Eubalaena australis*) (listed as endangered) – species or species habitat known to occur within area.
- Humpback whale (*Megaptera novaeangliae*) (listed as vulnerable) – species or species habitat likely to occur within area.
- Great white shark (*Carcharodon carcharias*) (listed as vulnerable) – species or species habitat may occur within area.
- Albatross – two species are listed as endangered & six species are listed as vulnerable; species or species habitat may occur within area.
- Petrels – one species listed as endangered & three species listed as vulnerable; species or species habitat may occur within area.
- Many migratory species – consisting of bird, marine mammals and shark which may migrate in and out of this area, occur within this region.

All marine mammals, and sharks have the potential to become entangled in nets or mooring lines. Seabirds may be adversely affected by activity around any feeding, roosting or nesting sites in the area. However, section 19 of the *Aquaculture Regulations 2005* specifies that each licence holder must have a written strategy approved by the Minister to minimise adverse interactions with seabirds and large marine vertebrates. In addition, risks posed by the aquaculture activity are assessed at the time of application through the ESD Assessment process consistent with the National ESD Framework.

In November 2002 Cabinet approved the establishment of a Marine Mammal-Marine Protected Areas Working Group (MM-MPA AWG) to develop management arrangements to address the proximity of aquaculture developments to core areas of proposed marine protected areas and significant marine wildlife habitats such as seal colonies and whale breeding areas.

The MM-MPA AWG concluded that the only aquaculture activity to pose a risk to seal/sea lion colonies is finfish aquaculture, and the only seal/sea lion colonies at risk from finfish aquaculture are breeding colonies of Australian Sea-lions. The New Zealand Fur-seal also interacts with aquaculture operations, is not considered to be at risk from finfish aquaculture, and as such it is proposed that no restrictions will apply in relation to the New Zealand Fur-seals.

Cabinet considered the MM-MPA AWG report and in 2005 Cabinet noted the following recommendation in order to reduce the potential risk to Australian Sea-lion breeding colonies from finfish aquaculture—

- Finfish aquaculture located within 5 km of any Australian sea lion breeding sites will not be approved;
- Finfish aquaculture will not be approved within 15 km of the eight major Australian sea lions breeding colonies (namely The Pages, Dangerous Reef, Seal Bay, West

Waldegrave Island, Olive Island, Franklin Islands, Purdie Island and Nicolas Baudin Island);

- Finfish aquaculture to be located between 5-15 km of minor Australian sea lion breeding colonies will have a risk assessment applied to the during the licence assessment process specifically related to seals; and
- Over 15 km, there will be no restrictions in relation to finfish aquaculture.

There are no core proposed marine protected areas, nor significant marine wildlife habitats (such as sea-lion or seal colonies and whale breeding areas) in proximity of the Port Neill aquaculture zone.

6.8 Fisheries Nursery and Juvenile Habitats

The waters off Port Neill support a number of fisheries. Bryars (2003) indicates that the Salt Creek Beach to Cape Driver habitat unit is directly used by southern calamari, giant cuttlefish, King George whiting, snapper, western Australian salmon, tommy ruff, southern sea garfish, yelloweye mullet, trevally, yellowtail kingfish, leatherjacket, wrasse, snook, sea sweep, silver drummer, gummy shark and whaler shark.

Net fishing is prohibited in the waters within a line from Cape Burr to a point on the mainland 1.5 kilometres north of the jetty (Baker, 2004).

6.9 Carrying Capacity and Assimilative Capacity

The concepts of 'carrying capacity' and 'assimilative capacity' are important and interrelated tools for natural resource management. Carrying capacity equates to the biomass (tonnage) of culture product that can be added to the environment without deleterious effects. Assimilative capacity refers to the extent to which the environment can cope with a particular activity without unacceptable change (O'Bryen and Lee, 2003).

Estimating carrying and assimilative capacities for finfish aquaculture is a relatively simpler task than for shellfish. This is largely due to the additive versus extractive nature of finfish and shellfish production respectively. For finfish aquaculture, it is possible to determine, using mass balance equations of the type described by Beveridge (1987), the changes in concentration of nitrate and ammonia in the water column. The level of confidence in these estimations reflects the empirical understanding of sources and sinks for these waste products and their interaction.

For shellfish aquaculture, estimating carrying capacity is more complicated as potential production must be estimated from available food resources. At present there are difficulties in confidently predicting potential production. Firstly, there is limited data to ascertain the availability of food for shellfish, namely phytoplankton and non-phytoplanktonic sources such as detritus and re-suspended material. Secondly, processes such as shellfish filtration rate, excretion and respiration rates, and assimilation efficiencies need to be investigated within South Australian coastal conditions and compared to seasonally varying food concentrations and temperature (Parsons Brinkerhoff and SARDI Aquatic Sciences, 2003).

6.10 Commercial and Recreational Fishing

New zone policies are sited in a manner that minimises unnecessary impact on commercial and recreational fishing activities.

Commercial fishing in the Port Neill area concentrates on trawling for prawns, net and line fishing for King George whiting, yellowfin whiting, flathead, yelloweye mullet, Australian salmon, snapper, snook, southern sea garfish, tommy ruff, southern calamari, yellowtail kingfish and trap/pot fishing for blue swimmer crabs. No rock lobster fishing occurs in this area. Limited commercial abalone fishing is conducted in the Port Neill area (Edyvane, 1996).

Port Neill is a popular recreational fishing location, with King George whiting, snapper and squid being targeted. These fish are targeted in areas of weed, rock and sand in close proximity to Port Neill township. An artificial reef located close to the shore at Port Neill (34° 06' 36.94"S, 136° 22' 41.09"E (GDA94)) is utilised by recreational fishers (PIRSA Fisheries, 2007). This reef is located within the Port Neill aquaculture exclusion zone.

The Spencer Gulf prawn fishery is based exclusively on the Western king prawn (*Melicertus latisulcatus*). Fishing is permitted in all waters deeper than 10 metres within Spencer Gulf (Carrick, 2003).

A stock assessment of prawn populations is carried out based on surveys conducted on several occasions throughout the year and assessments are carried out during the season for the development of spatially and temporally explicit harvest strategies. According to logbook data from fishers, there has been no catch (kg) or effort (h) reported for the Spencer Gulf Prawn fishery blocks 107 or 108 (located off Port Neill) between 1996/97 and 2005/06 (Angelo Tsolos, pers. comm., 16 May 2007).

Although prawns are broadly distributed throughout the gulf, commercial effort tends to be concentrated in areas consisting of large prawns at high density. It is estimated that less than 10% of the area of Spencer Gulf is trawled annually (Carrick, 2003). In recent years around 50% of the commercial catch has been harvested from the Wallaroo region (Dixon *et. al.* 2006a).

6.11 Historic Shipwrecks

Shipwrecks occur off Cape Burr and off Lipson Island Conservation Park. The ship *Lady Kinnaird* is located off Cape Burr (State Library, South Australia, 2007).

6.12 Shipping and Navigation

There are no major ports on the western side of central Spencer Gulf. There is marine traffic associated with recreational and commercial fishing vessels and leisure craft in the Port Neill area. There is a boat ramp and breakwater located on the southern side of the Dutton Bay that leads into deep water, providing an all-weather launching site.

Aquaculture infrastructure may present a navigational hazard to vessels. However, aquaculture leases and/or licences stipulate that navigation marks be installed, whenever structures are located in the leased area and should not therefore pose a hazard.

6.13 Tourism

Port Neill is a popular beachside holiday destination where visitors enjoy activities such as diving, fishing and boating (Tourism Eyre Peninsula, South Australian Tourism Commission n.d.). The Port Neill aquaculture zone has been situated so that visual and recreational amenity is maintained.

7 REGIONAL IMPACT ASSESSMENT

This section contains an assessment of the impact of the zone policy on the Eyre Peninsula Region. A regional assessment is appropriate, as the matters raised in the Policy will:

- Directly impact on a region or regions;
- Indirectly impact on a region or regions;
- Affect or relate to regional issues; or
- Treat or affect regional and metropolitan areas differently.

7.1 Stakeholders

The following groups may be affected by the zoning and policy:-

- The Aquaculture industry, local community, native title claimants and other indigenous groups, local government, recreational and professional fishers, Government agencies, conservation groups and other NGOs, research organisations, boards and other relevant planning and natural resource management bodies, recreational users, tourists and the tourism industry.
- The recreational boating sector and commercial shipping.

These parties will be affected in different ways.

7.2 Consultation undertaken in relation to regional issues

Section 12(4)(a) of the *Aquaculture Act 2001* states that the Minister must, after preparation of the draft policy and related report, refer the policy and report to any body prescribed and to any public authority whose area of responsibility is, in the opinion of the Minister, likely to be affected by the policy.

The following bodies are prescribed:-

- Aboriginal Legal Rights Movement Incorporated;
- Conservation Council of South Australia Incorporated;
- Local Government Association of South Australia;
- Seafood Council SA;
- SA Fishing Industry Council Incorporated;
- 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 a 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; and
- Any regional NRM Board (within the meaning of the Natural Resources Management Act 2004) responsible for a region comprising or forming part of a zone or area to which the policy applies.

In addition to prescribed bodies, PIRSA Aquaculture consulted with the following parties: -

- Industry leaders, Department for Transport, Energy and Infrastructure, SA Tourism Commission, SARDI, Department for Environment and Heritage, Department of Water, Land & Biodiversity Conservation, Department of the Premier and Cabinet, Coast Protection Board, Department of Health, Aboriginal Affairs and Reconciliation Division, Native Title Unit, Aboriginal Legal Rights Movement, Environment Protection Authority, Community and Local Government Relations, Office of Regional Affairs, PIRSA Legal Unit, PIRSA Fisheries, Fishwatch, Spencer Gulf and West Coast Prawn Fishermen's Association, Rural Solutions SA, Regional Local Government Association, Regional Development Board, appropriate Local Council/s, appropriate progress association/s and Community groups within the District Council.

PIRSA Aquaculture takes a lead role to coordinate consultation and seek formal comment and advice on the policy proposal from an industry and regional perspective. The Policy, the Report and the Stakeholder paper describing the zoning proposal is distributed to key stakeholders as the basis for consultation. These documents were available on the PIRSA Aquaculture website for 2 months. Public notices are placed in *The Advertiser*, the *Port Lincoln Times* and the *Koori Mail* seeking comment from members of the public. In addition, public briefings in the region are organised to take place during the 2 month consultation period to give stakeholders the opportunity to speak directly with PIRSA Aquaculture officers.

All existing lease and licence holders in the zone area were advised during the 2 month consultation period of the policy proposal by letter.

The following stakeholder group meetings were held:

14 May 2007 - Department for Environment and Heritage (DEH)

18 May 2007 - Government stakeholders were invited from the following agencies and departments – Department for Transport, Energy and Infrastructure (DTEI), SA Tourism Commission, Aboriginal Affairs and Reconciliation Division, Native Title Unit, Department of Water, Land & Biodiversity Conservation, Environment Protection Authority (EPA), PIRSA Fisheries, Planning SA and Attorney General's Department.

On 30 October 2007, the drafting instructions were provided to DEH, EPA and DTEI for a 4 week comment period, prior to the Aquaculture Advisory Committee meeting on 7 December 2007.

7 February 2008 – A public briefing was held in Port Neill.

7.3 Potential Impacts

The Policy stipulates zones where aquaculture is permitted and where aquaculture is not permitted for the waters off Port Neill.

The following considerations have been taken into account during the preparation of the policy:-

- Zone planning to ensure that coastal resources are managed in a fair and equitable manner to allow for both recreational use and for development opportunities that contribute to community development and employment.
- Zoned areas are carefully located. In determining the suitability of areas for marine aquaculture zoning, a balance will need to be achieved in ensuring areas are commercially attractive and minimizing social and environmental

impacts. Zones should be optimally located for commercially viable marine aquaculture production in balance with these other competing requirements. Zones will preferentially be located in close proximity to services, transport and other infrastructure and with optimal environmental conditions for safe operation and maximum productivity (e.g. wave height, currents).

- Strategic planning for industry development.
- Zoned areas will be consistent with future planning directions.

The benefits of zoning include:

- Zoning offers predictability and equity in opportunity to investors and developers.
- Zoning avoids confusion by both the industry and the community as to where marine aquaculture can be accommodated. Appropriate areas for development are identified and clearly described through the planning process. Without zoning, aquaculture development may occur in an ad-hoc manner and the full economic potential of the industry is unlikely to be achieved.
- Zoning provides appropriate management controls that are specified in the Policy then applied through the licence e.g. prescribed classes of aquaculture, maximum area to be leased and biomass limits.
- Consultation during the zoning process provides the opportunity for stakeholders and local communities to be engaged in the aquaculture that occurs in their locality. A regional community engagement strategy enables local social, economic and environmental knowledge to be considered during the planning process. Policies take into account the impact that change will have on regional communities.

7.3.1 Economic Factors

Most evidence of the economic benefits of aquaculture zoning is qualitative rather than quantitative.

Aquaculture zoning has a range of potential economic benefits, including:-

- Facilitating industry growth – zoning provides a framework that facilitates the sustainable development of aquaculture activities, therefore helping to promote significant investment and to enhance employment opportunities to rural and regional economies.
- Optimising the use of the sea – zoning helps to ensure that maximum benefits are derived from the use of the sea by encouraging activities to take place where they bring most value, and do not devalue other activities.
- Reduces costs – zoning can reduce the cost of regulation, planning and decision making, and can eliminate duplication in approval process.

These benefits arise through strategic planning, conflict resolution, sustainable resource use, promoting appropriate use, provision of development space, improving stakeholder involvement and regulatory efficiencies.

Aquaculture can provide significant investment and employment opportunities to rural and regional economies. A report completed by EconSearch (2007a) concluded the total economic impact (direct and flow-on) of aquaculture in South Australia in 2005/06 was \$AUD550 million. Direct employment was estimated to be in excess of

1,800 full time equivalent positions (FTE) in 2005/06 with 1,540 flow-on jobs, giving total employment of 3,348 FTE, with around 64% of these jobs generated in regional Eyre Peninsula. The tuna and oyster sectors accounted for the majority of employment on Eyre Peninsula (87%) while 281 FTE positions were engaged in abalone, mussel, yellowtail kingfish and other aquaculture enterprises.

The Port Neill aquaculture zone sets a limit of 8,000 tonnes of finfish that can be farmed. The benefits that an industry of the size allowed under this policy could have for South Australia include directly generating \$67 million annually into the state economy. An additional \$32 million could potentially be generated through flow on effects, mostly in the transport, processing and food services industries, resulting in an annual boost to the state between \$149million to \$207 million. It is also estimated that an industry of this size would create 700FTE in the aquaculture industry leading to a further 270 to 600flow on jobs to other occupations, particularly in the trade sector, resulting in a total of 1,200 to 1,500FTE within the state (EconSearch, 2007b).

The expansion of aquaculture development in the Port Neill area that results from development of the zone policy will have “downstream” implications for existing businesses in terms of maintenance and expansion, including the first level of processing, marketing and handling of aquaculture production. EconSearch (2007b) states that the extent of this type of economic impact can be measured through input-output modelling.

As a result of industry expansion, it is expected that:-

- Additional business and capital may be attracted to the region.
- The population size/demographics of Port Neill will be affected.
- Investment will be required to improve infrastructure such as boat ramps and roads.

7.3.2 The implication if no action is taken

There are two existing aquaculture leases located within the Port Neill aquaculture zone. These leases are a total of 20 hectares in size and are licensed for the farming of finfish including yellowtail kingfish (*Seriola lalandi*), snapper (*Pagrus auratus*) and mullet (*Argyrosomus japonicus*). The two leases will remain active. Any further development in the area would require a pilot lease application to be submitted.

Without zoning, aquaculture development may occur in an ad-hoc manner and the full economic potential of the industry is unlikely to be achieved. If zoning does not occur in the Port Neill area, future aquaculture development would rely on the pilot lease application process. This process is not a strategic planning process and can lead to an unplanned approach to resource use, is less streamlined, less efficient, and may lead to costly planning disputes.

7.3.3 Social Factors

The majority of the small communities on Eyre Peninsula, including Port Neill, were established to service the agricultural industry. The impact of the rural downturn and employment opportunities provided by the mining boom has led to a drain of its youth to the metropolitan areas and to mining centres. This has impacted on small businesses, and resulted in an ageing population.

The social structure of the Port Neill community has seen change over the last 15 years with a growing proportion of retirees and increased tourist activity (Jeffries & Munn, n.d.).

One of the challenges for the local community is to manage the economic and social changes that will result from an expansion in aquaculture development. Social impacts resulting from zoning may include loss of resource access and amenity, noise and visual impacts, and concerns about the loss of identity, remoteness, naturalness and aesthetic values of a region.

The regional impact of the amendments will, on balance, be positive – a minor impact to recreational fishers may result from a small decrease in area access for fishing.

7.3.4 Environmental Factors

The technical investigations found that the physical characteristics of the Port Neill aquaculture zone are favourable for both finfish and subtidal shellfish aquaculture and identified the most appropriate areas to promote sustainable development. The locations closer to shore have a higher likelihood of being located over environmentally sensitive areas.

Areas found with the more diverse benthic assemblages or of higher conservation value have been avoided in the development of the Port Neill aquaculture zone.

7.3.5 Advantages of the Region for zoning

Port Neill has a number of advantages over potential alternative locations where developers might seek to expand or initiate operations.

Specific favourable attributes of the Port Neill Aquaculture Zone include:

- The waters off Port Neill where the aquaculture zone is to be located are comprised of benthic fauna and flora categorised as sparse. It is in relatively deep water and is suitable for finfish and subtidal shellfish aquaculture.
- Local industry support services including boat launching, including access from nearby Arno Bay and Tumby Bay.
- Basic infrastructure (roads, electricity, telecommunications).

For existing aquaculturalists in the Port Neill/Arno Bay/Tumby Bay area, favourable factors include:

- Familiarity with local waters, infrastructure, institutional conditions, and commercial networks.
- Proximity to existing operations, reducing travel and communications costs.
- Established relationships with service and input providers.

7.3.6 Conclusion

The preferred option is the implementation of the Port Neill aquaculture zone and exclusion zone in accordance with the Policy.

The major benefit is an increase in regional employment opportunities and economic and social flow-on effects to coastal communities. However, the expansion of the aquaculture industry will result in social changes to the community. Potential changes may have impacts on individuals, families, businesses and communities. Given the natural resilience of most rural communities in exploring new opportunities, experience suggests that the actual effects of adjustment on communities are often

less than may initially have been expected by those most likely to be affected. Risks are minimized when there is effective community engagement and community or industry involvement in the policy formulation (Mazur et al, 2005).

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9 APPENDIX A – GLOSSARY OF TERMS

Adaptive Management	Management involving active response to new information of the deliberate manipulation of fishing intensity or other aspects in order to learn something of their effects. Within a stock, several sub-stocks can be regarded as experimental units in which alternative strategies are applied.
Aquatic Reserve	An area of water, or land and water, established as an aquatic reserve by proclamation under the <i>Fisheries Management Act 2007</i> .
Assimilative capacity	The capacity of a natural body of water to receive wastewaters without deleterious effects to aquatic life.
Benthic	Of or relating to or happening on the bottom under a body of water.
Biodiversity	The variability among living organisms from all sources (including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part) and includes: (a) diversity within species; and (b) diversity of ecosystems.
Biomass	The total live weight of a group (or stock) of living organisms (e.g. fish, plankton) or of some defined fraction of it (e.g. spawners), in an area, at a particular time. Any quantitative estimate of the total mass of organisms comprising all or part of a population or any other specified unit, or within a given area at a given time; measured as volume, mass (live, dead, dry or ash-free weight) or energy (joules, calories).
Biota	Collective flora and fauna of a given region, a specific habitat or a biotope.
Broodstock	Aquatic organisms from which subsequent generations are intended to be produced for the purpose of aquaculture.
Carrying capacity	The maximum population of a given organism that a particular environment can sustain.
Ecologically sustainable development (ESD)	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.
Ecosystem	A dynamic complex of plant, animal, fungal, and microorganism communities and the associated non-living environment interacting as an ecological unit.
Habitat	The place or type of site in which an organism naturally occurs.
Harvest	A productivity measuring technique.
Marine protected area (MPA)	An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and cultural resources, and managed through legal or other effective means.
Mean High Water Springs	The line representing the average of all high water observations at the time of spring tide over a period of 19 years.
Population	A group of individuals of the same species, forming a breeding unit and sharing a habitat.
Spatial	Of or relating to space.
Stakeholder	An individual or a group with an interest in the conservation, management and use of a resource.
Stock	A group of individuals of a species occupying a well defined spatial range independent of other groups of the same species, which can be regarded as an entity for management or assessment purposes.



10 APPENDIX B – LIST OF ACRONYMS

AAC	Aquaculture Advisory Council
DAC	Development Assessment Commission
DEH	South Australian Department for Environment and Heritage
DTEI	Department for Transport, Energy and Infrastructure
EMP	Environmental Monitoring Program
EPA	Environment Protection Authority
EPBC Act	The Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERDC	Environment, Resources and Development Committee
ESD	Ecological Sustainable Development
ILUA	Indigenous Land Use Agreement
MHWS	Mean High Water Springs
MPA	Marine Protected Area
NPW Act	<i>National Parks and Wildlife Act 1972</i>
NRM	Natural Resource Management
PIRSA	Department of Primary Industries and Resources, South Australia
SARDI	South Australian Research and Development Institute
The Minister	Minister for Agriculture, Food and Fisheries



11 APPENDIX C – MAPS AND COORDINATES

A written description of the Port Neill aquaculture zone and the Port Neill aquaculture exclusion zone is provided in the Aquaculture (Zones – Port Neill) Policy 2008.

Figure 1 Map of the Port Neill aquaculture zone and the Port Neill aquaculture exclusion zone

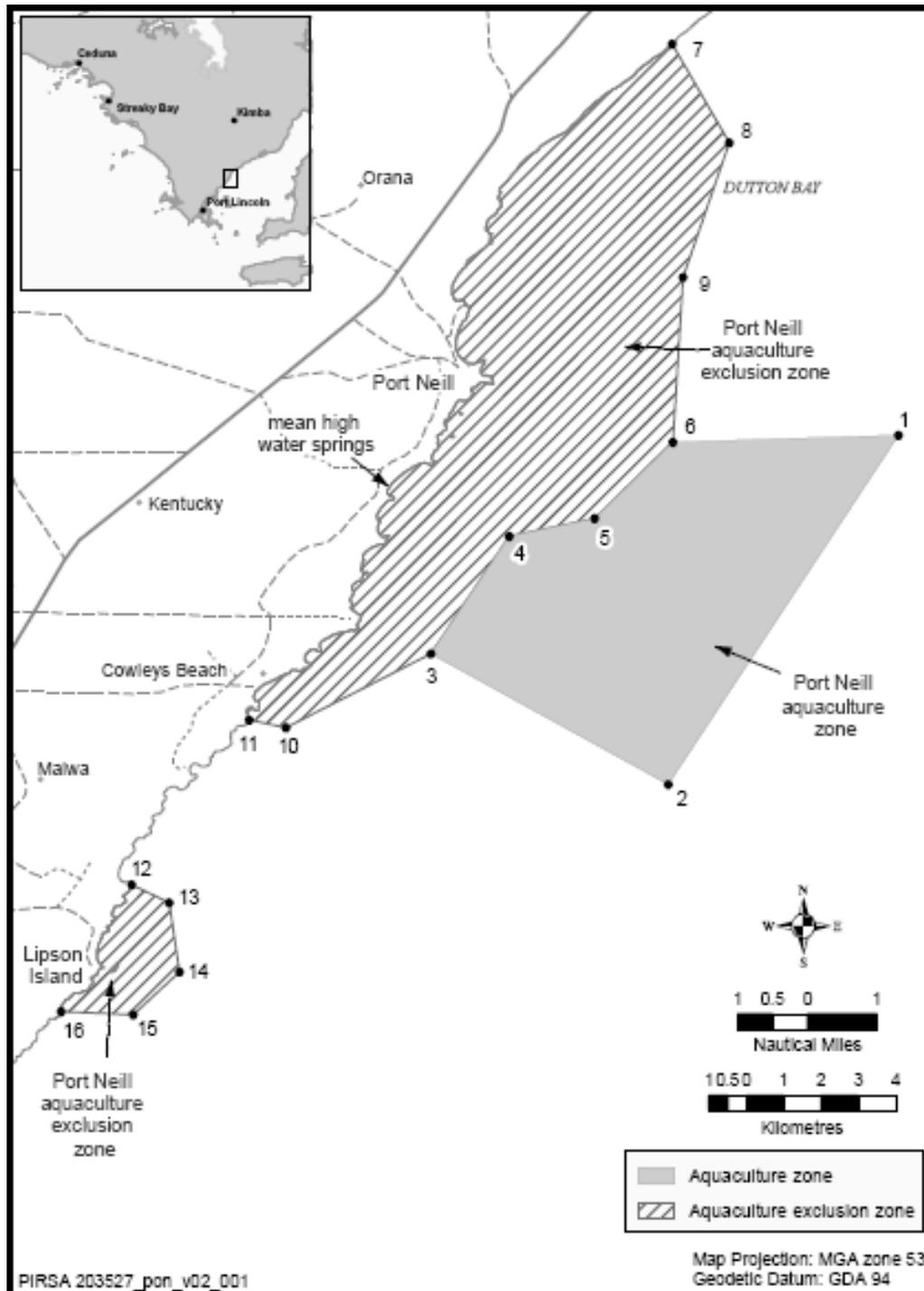


Figure 2 Overlay of the Port Neill aquaculture zone and exclusion zone showing existing leases and depth analysis (lease information correct as at 13/11/07)

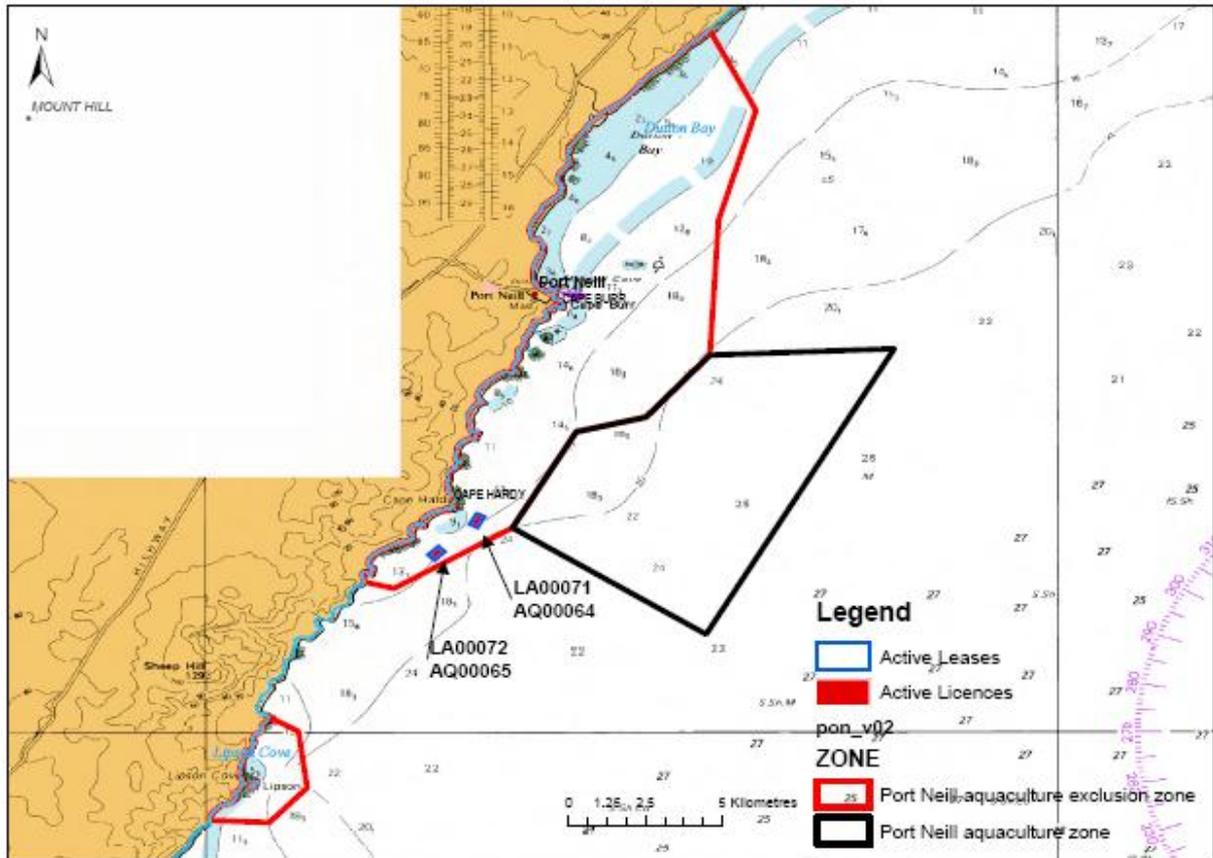


Figure 3 Overlay of the Port Neill aquaculture zone and exclusion showing the Arno Bay study site and the spatial distribution of benthic assemblages (Parsons Brinkerhoff & SARDI, 2003)

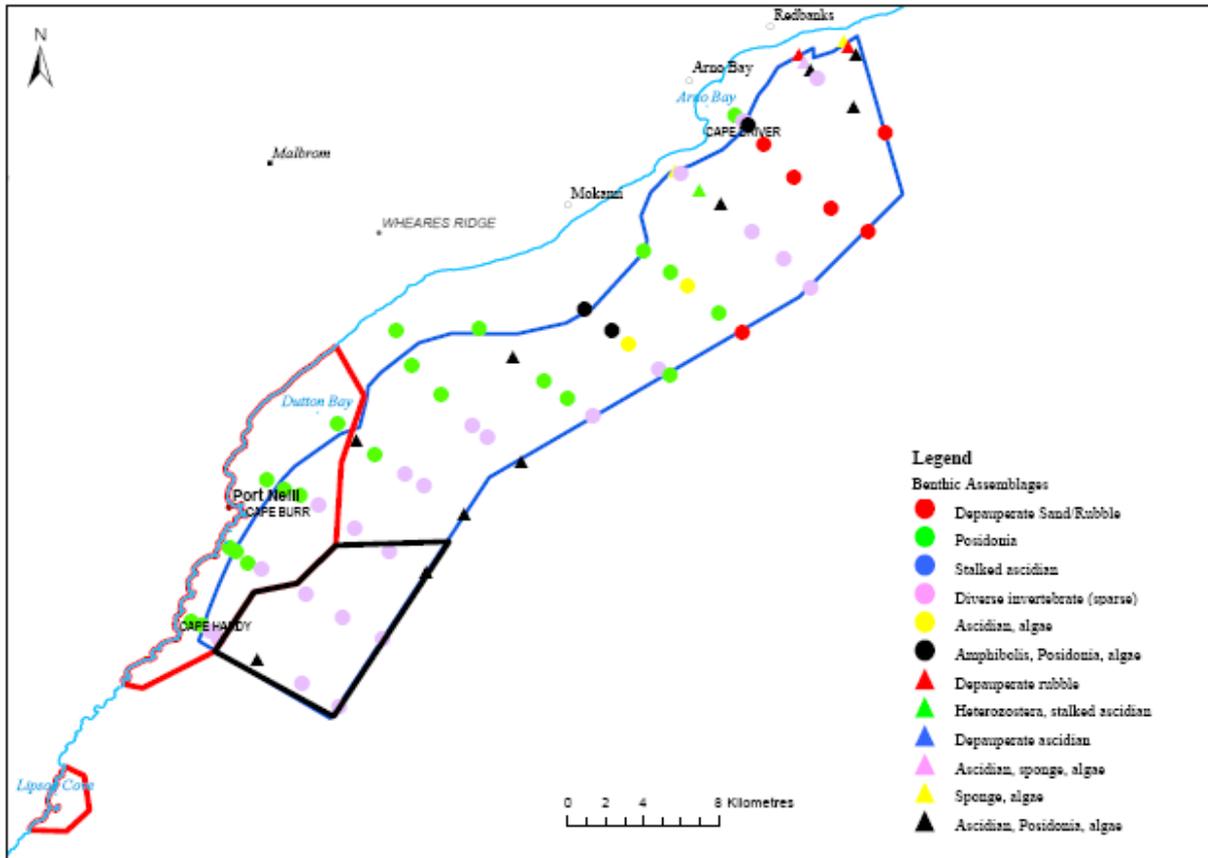


Figure 4 Overlay of the Port Neill aquaculture zone and exclusion zone with seagrass mapping (Edyvane, 1999)

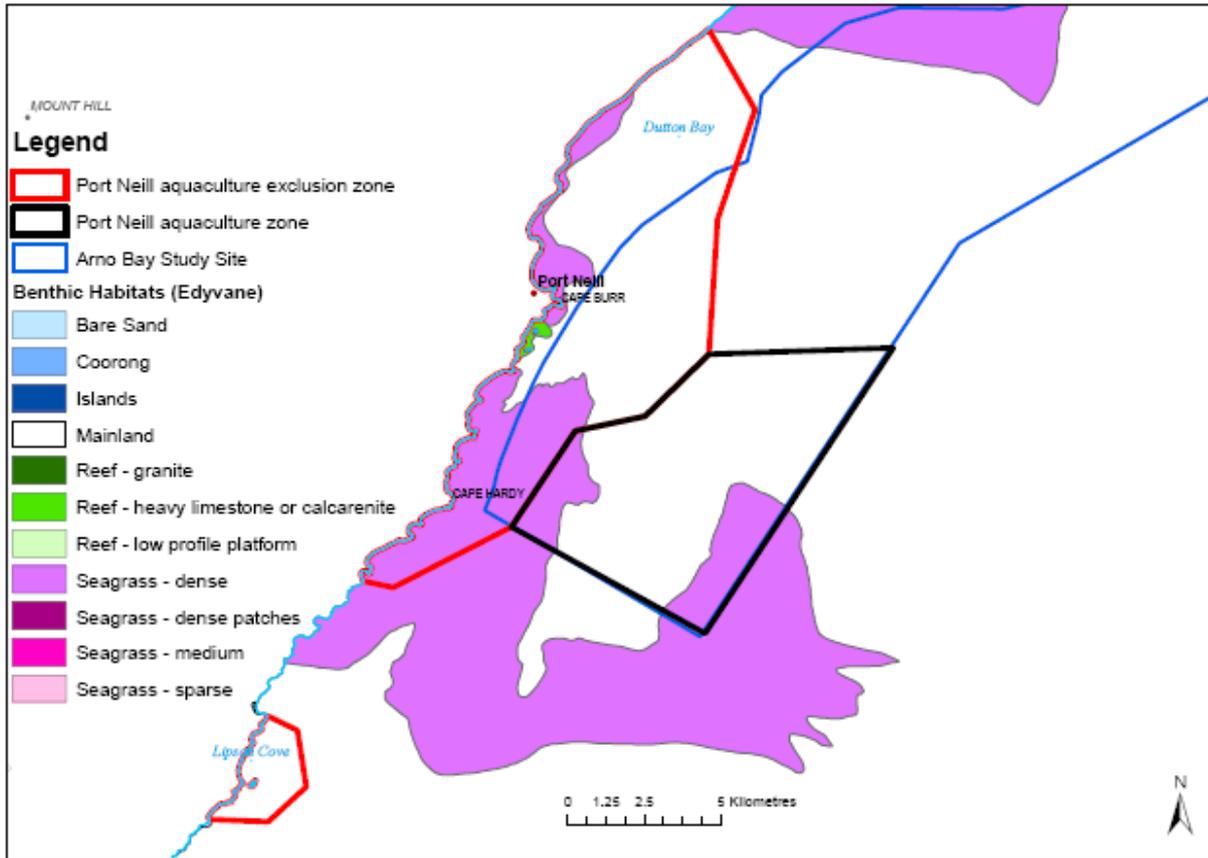


Figure 5 Overlay of the Port Neill aquaculture zone and exclusion zone with the Destiny Queen operating zone.

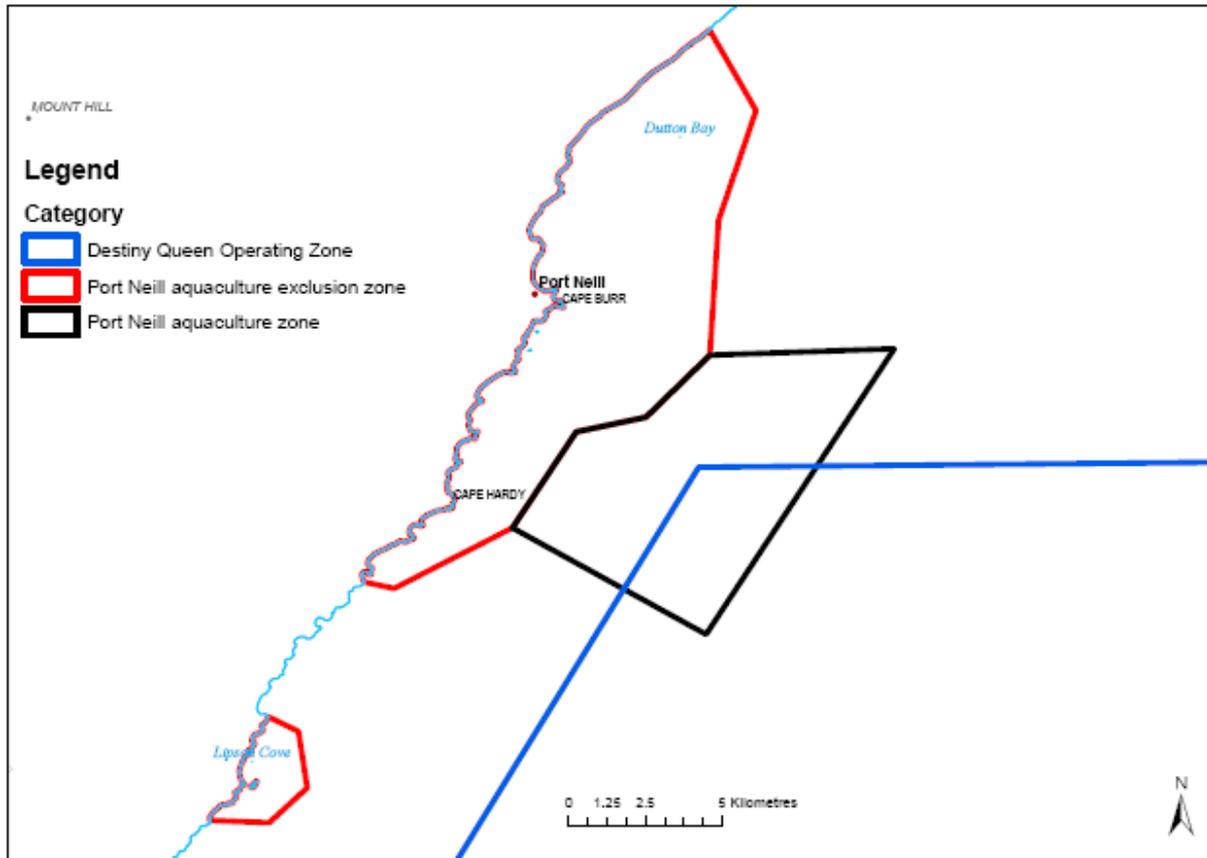
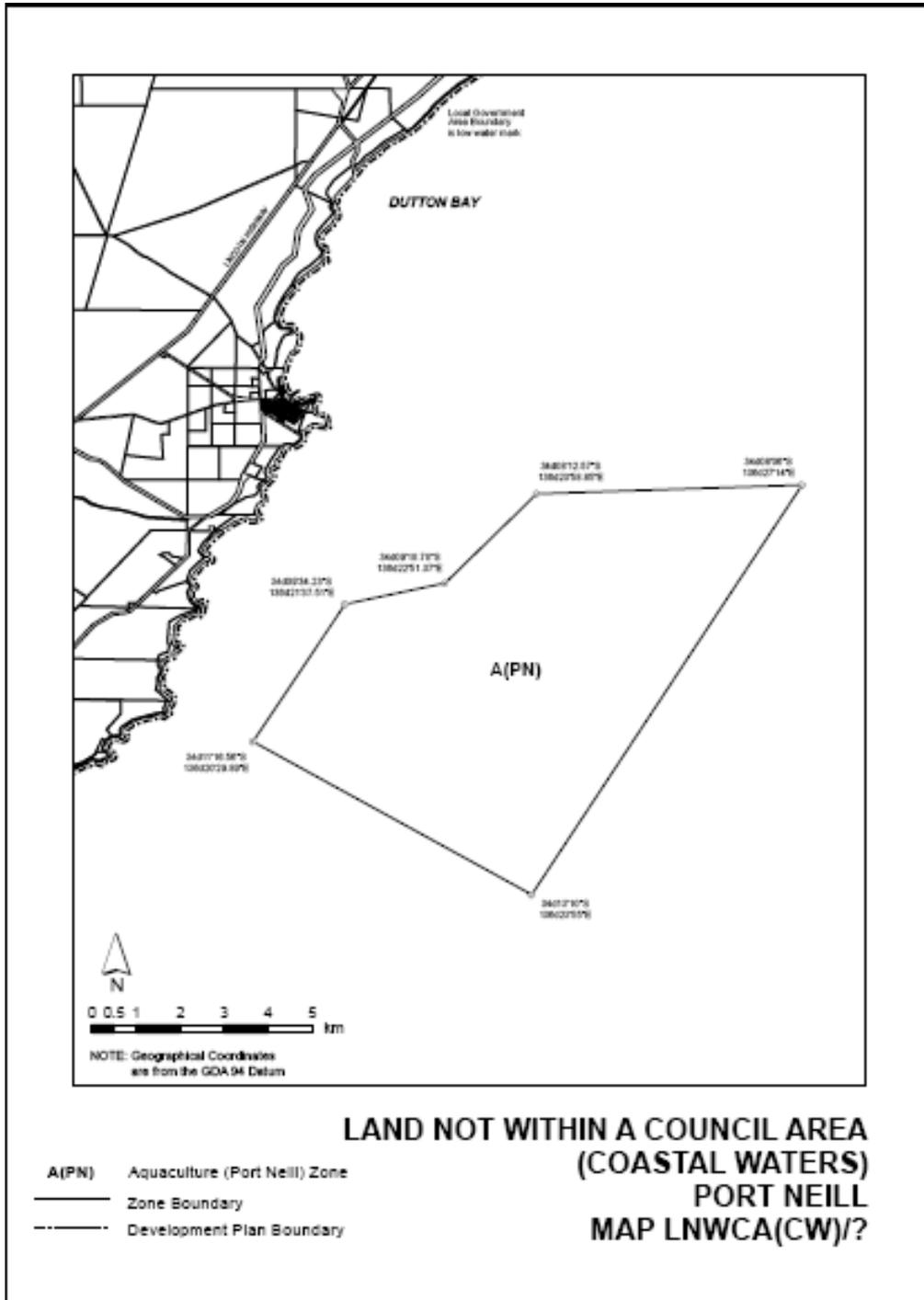


Figure 6 New zoning map to delineate the extent of the Aquaculture (Port Neill) Zone under the Land Not Within A Council Area (Coastal Waters) development plan.





12 APPENDIX D - RELEVANT POLICIES AND LEGISLATION

Development Act 1993 and Development Regulations 2008

As detailed in part 5 of the Policy it is intended to amend the Land Not Within A Council Area (Coastal Waters) Development Plan once the Policy has been approved and gazetted by the Minister for Agriculture, Food and Fisheries.

The amendment to the *Development Regulations 2008* also enables any form of aquaculture development identified in an aquaculture zone policy under the *Aquaculture Act 2001* to be assigned to Category 1 development, subject to the approval of the Minister for Urban Development and Planning. This means that the class of aquaculture development specified in the Policy would be classified as a *complying* development and exempt from the public notification and consultation under the provisions of the *Development Act 1993*. However, consultation on licence applications must still occur under the *Aquaculture Act 2001*.

The amendment removed duplication of processes for aquaculture development whereby aquaculture development in an aquaculture zone would have undergone a public consultation process under the *Development Act 1993* in addition to a public consultation process under the *Aquaculture Act 2001* for policies and licences.

Relevant provisions of the Land Not Within A Council Area (Coastal Waters) Development Plan apply to aquaculture development. The Development Plan states that aquaculture development should be undertaken in an 'ecologically sustainable way', in 'a manner which recognises the social and economic benefits to the community' and so as 'to conserve environmental quality, in particular water quality, and other aspects of the coastal environment including sea floor health, visual qualities, wilderness, ecosystems, and biodiversity'. Additionally, aquaculture should be undertaken 'in a manner which recognizes other users of marine and coastal areas and ensures a fair and equitable sharing of marine and coastal resources' and minimizes 'conflict between water and land based users', 'adverse impact on the visual amenity of the coastal environment and unspoilt views adjacent to the coast' and 'adverse impacts on sites of ecological, economic, cultural, heritage or scientific significance.' The Policy is consistent with these provisions in that it seeks to ensure the ecologically sustainable development of the aquaculture industry and recognises and respects other users of the marine resource.

South Australia's Strategic Plan

The Policy seeks to further the objectives of the State Government goals and strategies contained in the South Australia's Strategic Plan and is consistent with the objectives of that Strategy.

South Australia's Strategic Plan is organised around 6 objectives and aims to reach 98 measurable targets by 2014.

Aquaculture Policies under the *Aquaculture Act 2001* provide the necessary policy framework to facilitate aquaculture development in South Australia. The new and developing aquaculture industry is greatly assisting economic development and will help meet the following Strategic Plan targets:-

T1.1 Economic Growth, T1.5 Business Investment, T1.10 Jobs and T1.14 Total Exports.

South Australia's strategic plan 2007 provides a process of 'regionalising' that will mean developing coordinated regional approaches to pursuing those South Australia's Strategic Plan targets that reflect priorities specific to each region. The aquaculture industry is expected to be a focal industry in the 'regionalising' process.

Aboriginal Heritage Act 1988

The *Doing it Right* policy on Aboriginal affairs commits the Government to "partnership and transparency", to ensuring that "decision making and priority setting is inclusive of Aboriginal views and opinion".

Aboriginal communities have long and close ties with the coast and the sea in South Australia. The coast is important to Aboriginal people as a source of camping sites, food and water. The coast and sea are often linked to dreaming stories and can be rich in heritage sites and objects as well as ancestral remains. The *Aboriginal Heritage Act 1988* provides for the protection and preservation of Aboriginal sites, objects and remains, whether registered or not, without an authorisation from the Minister for Aboriginal Affairs and Reconciliation pursuant to section 23. Section 20 of the Act requires that any Aboriginal sites, objects or remains discovered on land, be reported to the Minister for Aboriginal Affairs and Reconciliation. Penalties apply for failure to comply with the Act. Some native title claims and Indigenous Land Use Agreements include areas of the sea as well as the land, and aquaculture operators should take care to respect Aboriginal rights in such waters.

The *Aboriginal Heritage Act 1988* establishes the Aboriginal Heritage Committee to advise the Minister for Aboriginal Affairs and Reconciliation and to represent the interests of Aboriginal people through the State in the protection and preservation of Aboriginal heritage.

Native Title Act 1993

On 1 January 1994 the Commonwealth *Native Title Act 1993* commenced operation. The Act was part of the Australian Government's response to the High Court's decision in *Mabo v Queensland No. 2*, which found that Australian common law can recognise the rights and interests over land and water possessed by Indigenous people in Australia under their traditional laws and customs – 'native title'. The Act adopts this common law definition of 'native title'.

In its current amended form, the Native Title Act (1993)

- Recognises native title rights and sets down some basic principles in relation to native title in Australia, including that native title can not be extinguished other than through the Act;
- Validates "past acts" over land, such as the grant of pastoral or mineral interests, which may be invalid because of the existence of native title;
- Provides for a "future act" regime in which native title rights are protected and conditions are imposed on activities affecting native title;
- Extinguishes native title completely over areas covered by valid acts of exclusive possession, like granting freehold title;
- Extinguishes native title to the extent that it is "inconsistent" with valid acts of nonexclusive possession, like some types of pastoral leases;
- Provides a process by which native title rights can be established and compensation determined, and by which determinations can be made as to

whether future grants can be made or acts done over native title land and waters;

- Enables Indigenous Land Use Agreements to be made between native title parties and other interest holders; and
- Provides for a range of other matters, including the establishment of a National Aboriginal and Torres Strait Islander Land Fund.

Planning Strategy for Regional South Australia

The Planning Strategy for Regional South Australia, January 2003, contains a number of strategies relevant to the development of the Policy. In particular, the Policy is consistent with strategies relating to diversifying primary production into new areas to replace or complement existing activities and the integrated and sustainable management of natural resources in a manner that maintains ecological processes.

Australia's Oceans Policy

Australia's Oceans Policy sets in place a framework for integrated and ecosystem-based planning and management for Australia's marine jurisdictions. It promotes ecologically sustainable development of the ocean resources and encourages internationally competitive marine industries, whilst ensuring the protection of marine biological diversity. The key tool is Regional Marine Planning i.e., planning based on large areas that are ecologically similar, and seeks to integrate the use, management and conservation of marine resources at the ecosystem level.

Marine Plans establish an overarching strategic planning framework to guide State and local government planners and natural resource managers in the development and use of the marine environment. Fundamental to these Marine Plans is an ecologically based zoning model. Each of these zones is supported by goals and objectives.

Marine Parks Bill 2007

The *Marine Parks Bill 2007* was assented to on 29 November 2007 and commenced in part on 22 May 2008.

The Marine Parks Act provides a legislative framework for the dedication, zoning and management of South Australia's marine parks. The *Marine Parks Bill 2007* recognises that Aquaculture is an important and growing industry in this State and provides significant benefits to South Australia. The needs of this lucrative industry have also been catered for with commitments to accommodate, as far as possible, existing aquaculture operations. This has resulted in an accord with the Minister for Agriculture, Food and Fisheries on the relationship and likely interactions between proposed marine parks and aquaculture developments in South Australian waters. This will enable DEH and PIRSA to work together to address key priorities from South Australia's Strategic Plan, specifically to treble exports by 2014 (T1.12) and to create 19 marine parks by 2010 (T3.4), such that each is given optimal effect without detriment to the other.

The accord identifies the general areas of the State's waters where:

- there will be little or no interaction between future marine parks and aquaculture development;
- there may be some interaction but where mutually acceptable outcomes can be reached through pragmatic planning processes; and
- further discussion will be required to resolve potential conflicts.

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 particular zones. Areas with high conservation values will be designated as either Restricted Access Zones or Sanctuary Zones to provide the necessary level of protection for habitats, species, ecological and geological features. Both of these zones preclude commercial fishing, recreational fishing and aquaculture operations.

Aquaculture policies will be prepared having regard to Marine Park objectives and boundaries.

Natural Resource Management Act 2004

The Policy has been prepared having regard to the *Natural Resource Management Act 2004* (NRM). The intent of this Act is to establish an integrated system of natural resource management that will assist in achieving sustainable natural resource management in South Australia. Both the *Aquaculture Act 2001* (and policies prepared under it) and the NRM legislation are underpinned by ecologically sustainable development principles and are intended to complement each other. Natural Resource Management Regional Plans are required to recognise best practice by an industry sector. The *Aquaculture Act 2001* and management policies established under it provide a good basis for managing the industry against best practice.

The Port Neill aquaculture zone lies within the Eyre Peninsula Natural Resources Management (NRM) Board. The Policy must take into consideration issues raised within the Eyre Peninsula Catchment Water Management (CWM) Plan. As the Port Neill aquaculture zone relates only to marine aquaculture there are no matters of water allocation, groundwater or surface water, specific to the aquaculture zone. The policy is consistent with the Eyre Peninsula NRM/CWM Plan.

Environment Protection Act 1993

The Policy was developed to be consistent with the *Environment Protection Act 1993* and the Environment Protection (Water Quality) Policy 2003 (the "Water Quality Policy").

The Water Quality Policy established under the *Environment Protection Act 1993* came into operation on 1 October 2003. The principal object of the policy is to achieve the sustainable management of waters by protecting or enhancing water quality while allowing economic and social development. In particular, the Water Quality Policy requires all reasonable and practicable measures to be taken to avoid the discharge or deposit of waste into any waters or onto a place from which it is reasonably likely that waste will enter any waters. The Water Quality Policy prescribes water quality criteria that must not be contravened and prohibits the discharge or deposition of pollutants into any waters that results in:

- Loss of seagrass or other native aquatic vegetation; or
- Reduction in numbers of any native species of aquatic animal or insect; or
- Increase in numbers of any non-native species of aquatic animals or insect; or
- Reduction in numbers of aquatic organisms necessary to a healthy aquatic ecosystem; or

- Increase in algal or aquatic plant growth; or
- Water becoming toxic to vegetation on land; or
- Water becoming harmful or offensive to humans, livestock or native animals; or
- Increased turbidity or sediment levels.

The Objects of the *Environment Protection Act 1993* include the promotion of the principles of ecologically sustainable development, and in particular, to prevent, reduce, minimise and, where practicable, eliminate harm to the environment. Section 25 of the *Environment Protection Act 1993* imposes a *general environmental duty not [to] undertake an activity that pollutes, or might pollute, the environment unless...all reasonable and practicable measures to prevent or minimise any resulting environmental harm [are taken]*. This duty is enforceable through environment protection orders. The *Environment Protection Act 1993* also provides that communities must be able to provide for their economic, social and physical well being.

The *Environment Protection Act 1993* defines general offences relating to environmental harm and environmental nuisance. Environmental harm is *material environmental harm if...it consists of an environmental nuisance of a high impact or on a wide scale, it involves actual or potential environmental harm (not being merely an environmental nuisance) that is not trivial or it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$5,000*. Serious environmental harm is defined as *environmental harm which involves actual or potential harm to the health or safety of human beings that is of a high impact or on a wide scale of other actual or potential environmental harm (not being merely an environmental nuisance) that is of a high impact or on a wide scale, results in actual or potential loss or property damage of an amount or amounts in aggregate, exceeding \$50,000*.

This Policy is consistent with the provisions of the Water Quality Policy and *Environment Protection Act 1993* in that it seeks to minimise or prevent harm to the environment associated with aquaculture.

South Australia's Food Plan

South Australia's Food Plan was developed with the objective of increasing the food industry's contribution to the South Australian economy to \$15 billion by 2010. The Food Plan identifies eight strategies to accelerate the food industry's growth. The Policy is aligned with strategies relating to market driven food exports, sustainable production and a committed government. Aquaculture Policies support the growth of the food industry – specifically the seafood industry – by allocating and managing marine tenure in which the industry can grow sustainably. In addition, the Policy is consistent with the objectives of the South Australia Seafood Plan in that it seeks to consolidate existing industry and allow appropriate expansion in aquaculture production.

Directions for Regional South Australia

The South Australian Government's regional development policy *Directions for Regional South Australia* identifies a number of objectives for regional development. The Policy is aligned with objectives relating to planning and infrastructure building, responsive government and economic generation.

Harbors and Navigation Act 1993

The *Harbors and Navigation Act 1993* vests the seabed in the fee simple with the Minister responsible for administration of that Act. That is, section 15 (1) of the *Harbors and Navigation Act 1993* vests all adjacent and subjacent land in the Minister for Transport. Adjacent land is land extending from the low water mark on the seashore or the edge of any navigable waterway or body of water to the nearest road or section boundary, or to a distance of fifty metres from high water mark (whichever is the lesser distance). Subjacent land is land underlying navigable waters within the jurisdiction. Under the *Aquaculture Act 2001*, plans such as aquaculture policies can be prescribed in State waters. State waters being those waters adjacent to the State and territorial sea, and other navigable waters declared as such by regulation. Matters of titles and jurisdiction related to the territorial sea adjacent to the State and further addressed in the Commonwealth *Coastal Waters (State Powers) Act 1980*, the *Seas and Submerged Lands Act 1973* and *Coastal Waters (State Title) Act 1980*. Section 15 (4) of the *Harbors and Navigation Act 1993* provides that the *Crown Lands Act 1929* does not apply to land vested in the Minister under Act but the Crown may, with the concurrence of the Minister, exercise any other power that it has to grant a lease or licence over its land in relation to land vested in the Minister under this Act.

Part 6 of the *Aquaculture Act 2001* provides for the grant of aquaculture leases in “State waters; or State waters and adjacent land within the meaning of the *Harbors and Navigation Act 1993*”. Section 20 of the *Aquaculture Act 2001* provides that the grant of aquaculture leases is subject to the concurrence of the Minister responsible for administration of the *Harbors and Navigation Act*. The Policy is consistent with these provisions as they relate to the jurisdiction of the *Aquaculture Act 2001* and the requirement for concurrence.

Coast Protection Act 1972

The *Coast Protection Act 1972* establishes the Coast Protection Board. The Coast Protection Board has a number of functions including...*to protect the coast from erosion, damage, deterioration, pollution and misuse*. The Policy is consistent with the provisions of the *Coast Protection Act 1972* in that it seeks to protect the coast by minimising any risk of erosion, damage, deterioration, pollution and misuse of the resource, through appropriate siting of aquaculture zones and aquaculture exclusion zones, the specification of appropriate types and levels of aquaculture development.

Native Vegetation Act 1991

The *Native Vegetation Act 1991* sets out objectives relating to native vegetation in South Australia. Objectives relevant to this Policy include *the conservation of the native vegetation of the State in order to prevent further reduction of biological diversity and further degradation of the land and its soil and the limitation of the clearance of native vegetation to clearance in particular circumstances including circumstances in which the clearance will facilitate the management of other native vegetation or will facilitate the efficient use of land for primary production*. This Policy is consistent with these objectives in that it seeks to minimise impacts on native vegetation through appropriate siting of aquaculture zones and aquaculture exclusion zones around sensitive habitats.