



2014

Mornington Peninsula Shire Aquaculture Industry Analysis



'Aquaculture now produces around 50% of the world's seafood and is the industry most likely to meet the future increase in demand for seafood products'

(Department of Primary Industries 2010)

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Report prepared by

Gillian Stewart, Rural Business Officer, **Mornington Peninsula Shire**



Disclaimer: Mornington Peninsula Shire (MPS)

All effort has been made to give true representation, provide accurate data and apply comprehensive knowledge to this document. Figures, data and commentary presented in this document are based from external data sources. However, MPS does not guarantee the accuracy of data nor the conclusions drawn from this information and therefore should not be relied upon solely for decision making purposes.

EXECUTIVE SUMMARY

The Mornington Peninsula (MP) Shire accounts for 10% of Victoria's overall coastline. This coastal region offers some of the largest and cleanest waters for seafood production, located close to markets, labour and established infrastructure. The Victorian Aquaculture and Seafood Sector comprises a number of key industries including blue mussels, oysters, abalone and wild catch. It is confronted with a number of challenges, which affects its economic competitiveness. The mussel sector has only recently obtained a reliable supply of wild spat for seed-stock whilst the abalone sector is recovering from the impact of a recent viral outbreak.

The MP region is renowned for local beach and bay recreational activities; however there has been limited exposure of the aquaculture and broader seafood industry. This lack of awareness of local production, supply and access of seafood products limits the capacity for active economic development activities to be supported by the Shire and community.

A recent report by the MP Marine Alliance (2013) estimates the combined value of local production of aquaculture, seafood and fishing at approximately \$13m; and providing 36 local jobs. Whilst REMPLAN Analysis provides a breakdown of business activities as follows:

Aquaculture	020 Aquaculture	Type	No of businesses
		0201 Offshore Longline and Rack	3
		0202 Offshore Caged	0
		0203 Onshore	1
Fishing	041 Fishing	0149 Other fishing	17
		0411 Rock lobster & crab potting	1

REMPLAN analysis estimates that a direct increase in output of \$1.000 million sees the demand for intermediate goods and services would rise by **\$0.558 million**.

Interviews conducted with local aquaculture and seafood producers highlight a number of **Opportunities for Action** to support industry awareness and development. These include:

- **Promote** aquaculture (bi-valve species) as a sustainable food supply industry;
- **Market** the Angasi oyster to attract a premium price);
- **Recognise** aquaculture as a critical stakeholder in food security and food miles arena by providing a relatively cheap and accessible protein source;
- **Local branding** to create a more defined 'point of difference' is essential;
- **Enhance** consumer access to 'Seagates' will enhance industry business development opportunities through direct sales from producer to consumer; and
- **Establish** a Festival event to increase awareness of local industry (Sea to Plate).

PURPOSE

The report aims to identify an economic value of the Aquaculture and Seafood sector as a whole and by market segment. There is a real lack of understanding of the current value and potential growth of this sector, particularly in terms of production and provenance.

The Shire Strategic Plan clearly identifies that supporting our diverse primary production, derived from both the land and sea, is a key strategic goal. **Goal 7 Supporting a Sustainable Economy** aims to foster an innovative business community and promote the peninsula's agricultural and rural sector.

Outcome 7.2 *Prosperous rural economy*

- 7.2.1 To foster and encourage agriculture and promote the Peninsula's rural sector.
- 7.2.2 To develop and grow local businesses including agritourism and intensive agriculture.
- 7.2.3 To support rural business through networking and industry development.

This report attempts to provide a more detailed overview of the local sector activities by:

- Identifying key primary producers
- Estimating industry growth potential
- Economic contributions
- Environmental management 'best practice'

The report findings are targeted at the Aquaculture and Seafood industry located on the Mornington Peninsula. The region has a strategic coastal presence, represented by the specific activities undertaken including:

- Aquaculture (Mussels & Oysters)
- Scallop harvesting
- Commercial fishing

There are also a number of local supply chain interactions that need to be explored and better understood such as:

- Hospitality: current / future use of local product
- Retail: access points for consumer interactions and sales
- Value added / processing/ preparation: the diversity of produce uses
- Provenance and branding: awareness of local products by geographic indicators



INTRODUCTION

Aquaculture or farming in water is the aquatic equivalent of agriculture or farming on land. Defined broadly, aquaculture covers the farming of both animals (including crustaceans, finfish and molluscs) and plants (including seaweeds and freshwater macrophytes). It occurs in both inland (freshwater) and coastal (brackish water, seawater) areas. In 1988 the Food and Agricultural Organisation (FAO) introduced a definition of aquaculture to reduce confusion with capture fisheries. It describes aquaculture as follows:

The farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plant which implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predator. Farming also implies individual or corporate ownership of the stock being cultivated.

For statistical purposes, aquatic organisms which are harvested by an individual or corporate body which has owned them throughout their rearing period contribute to aquaculture, while aquatic organisms which are exploitable by the public as a common property resources, with or without appropriate licences, are the harvest of fisheries (FAO 1988).

Generally aquaculture production refers to the following species:

- Blue Mussel (*Mytilus edulis*)
- Other Molluscs (Bi-valves)
- Salmonid
- Abalone
- Yabby
- Warmwater Finfish (Inland)
- Freshwater Eel
- Ornamental Fish



INDUSTRY OVERVIEW

The Victorian government has been directly involved in aquaculture for over twenty years and manages this work under the Fisheries Act (Victoria) 1995. It provides the framework for the management, development and promotion of an ecologically sustainable and viable aquaculture industry.

A Victorian Aquaculture Strategy was released in 2008; developed by key stakeholders in conjunction with the Department of Primary Industries to guide the sustainable development of the industry over the next decade.

Aquaculture is undertaken in a variety of offshore, coastal and inland facilities and includes the production of Rainbow Trout, Atlantic Salmon (including hand milked caviar), Abalone, Blue Mussel, Aquarium Finfish, Eel, Murray Cod, Barramundi, Silver Perch, Golden Perch and Yabby. Producers comply with a range of federal, state and local government environmental laws and codes of practice that ensure the long-term sustainability of the industry and the environment.

Aquaculture licences list the specified area, the species of fish (as defined under the *Fisheries Act*) that may be farmed, the licence period (generally 12 months), harvesting restrictions and quality assurance programs, production return requirements, operational management controls and environmental management provisions (DPI 2005).

The aquaculture industry in Victoria is confronted with a number of challenges, which are affecting its competitiveness. The mussel sector has only recently obtained a reliable supply of wild spat for seed-stock and the abalone sector is recovering from the impact of a recent viral outbreak. There is an urgent need to attract investment in the industry to achieve economies of scale (National Aquaculture Council 2014, p.1-2). This then offers an opportunity to further develop the local sector.

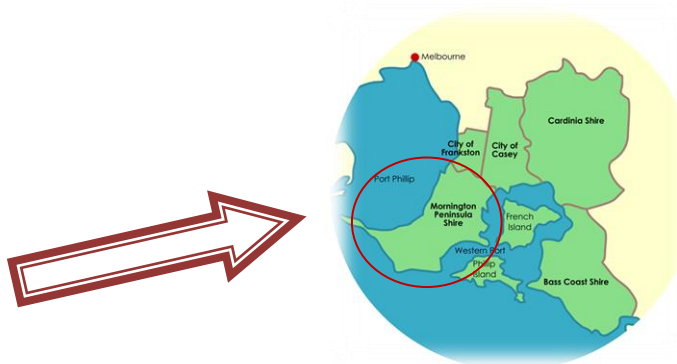
MORNINGTON PENINSULA REGIONAL CONTEXT

The Mornington Peninsula Shire is located on the south eastern tip of Port Phillip, eastern rim of Western Port and Bass Strait on its southern border. It has a total land mass area of 720km² which comprises of approximately 190 km of coastline; accounting for about 10% of Victoria's overall coastline. This coastal region offers some of the largest and cleanest waters for seafood production, located close to markets, labour and established infrastructure.



Port Phillip and Western Port have contributed greatly to Victoria's marine aquaculture industry spanning over the past 20 years. The industry largely concentrates on the cultivation of blue mussels in some of the cleanest waters available to farmers. Port Phillip has around 320 hectares of water available for farming while Western Port has 188 hectares. New sites in Port Phillip are proposed for allocation in the future. Unique traits of each reserve and operational rules are described in the relevant management plan.

In 2002, the United Nations proclaimed the Western Port region in Victoria, Australia, a UNESCO biosphere reserve. Western Port was chosen because it has outstanding natural values, including a Ramsar wetland of international importance. The Biosphere cooperates with Council to build a sustainable economy through environmentally sensitive tourism, local produce and better marketing for businesses that reduce environmental impacts (WPB 2013). One of the key environmental features of the Biosphere is that the aquaculture farms operate within this reserve. Opportunities to leverage Biosphere resources and enhance local collaboration with industry need to be explored further.



AQUACULTURE

There is evidence that aquaculture commenced in Australia more than 10,000 years ago with indigenous Eel farming but, from official records, the beginning is considered the late 1800s with the successful introduction of Trout from the northern hemisphere and cultivation of the native Sydney Rock Oyster (NAC 2014, p.1). Mussel farming has been the predominate form of aquaculture on the Mornington Peninsula. According to the Department of Environment & Primary Industries (DEPI) this is set to grow with a further 467 ha of license areas to be released in the future (DEPI 2014). This growth has been made possible through the establishment of the Queenscliff Shellfish Hatchery which supplies spats (young mussels) that farmers transfer to ropes suspended in the water for growth over 12 to 18 months. Previously farmers relied on the natural settlement of spats onto these ropes which could give variable results depending on a variety of factors (Nott et al 2012). A summary of Port Phillip and Western Port leases and locations are provided below (Table 1 & Figure 1 DEPI 2014).

Table 1. Aquaculture fisheries Reserve lease areas (ha)

		Aquaculture Fisheries Reserve								
Industry sector	Fiscal year	Flinders		Grassy Point		Clifton Springs			Other ¹	Total
		Total area (ha)		Total area (ha)		Total area (ha)		Total area (ha)		Total area (ha)
Blue Mussel and Other Molluscs (Bivalves)	2009/10	169.49		42		81		197.93		490.42
	2010/11	172.49		42		81		196.64		492.13
	2011/12	166.49		42		81		196.64		486.13

¹Includes production from the Pinnacle Channel, Beaumaris, Dromana, Bates Point and Mount Martha aquaculture fisheries reserves.



Figure 1. Key aquaculture leases within the Mornington Peninsula Shire (DPI 2010)

LEASE RESERVES

There are three reserves adjacent to the Mornington Peninsula Shire coastline that utilise local pier facilities for infrastructure and mooring purposes. Mt Martha, Dromana and Flinders' reserve characteristics are described below.

MOUNT MARTHA AQUACULTURE FISHERIES RESERVE (MMAFR)

The MMAFR is a 150 ha (approximately 1.9 km by 0.8 km) greenfield area located approximately 0.75 km offshore from Fossil Beach on the Mornington Peninsula. There are 5 Crown leases allocated at this site. Currently they are leased by one business which minimises issues associated with boat harbor space, access and equipment storage. A combination of Blue mussels and Angasi oysters are farmed at this reserve

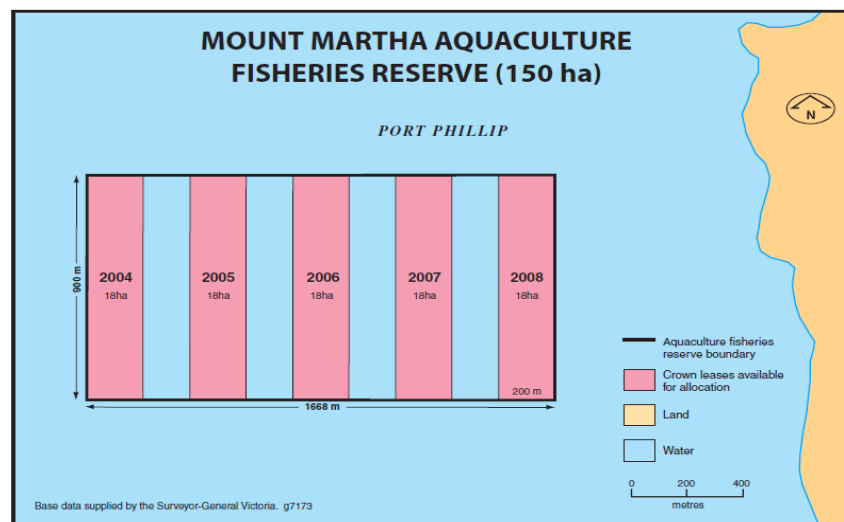


Figure 2. Mt Martha Aquaculture Fisheries Reserve (DEPI 2010).

DROMANA AQUACULTURE FISHERIES RESERVE (DAFR)



The DAFR is located approximately 0.78 km offshore from Martha Point. It is 20 ha (approximately 0.45 km by 0.45 km) in total area, and comprises the existing Dromana aquaculture harvesting area (3 ha) and a 17 ha greenfield extension. Water depth at the DAFR ranges from 9 to 11 m.

FLINDERS AQUACULTURE FISHERIES RESERVE (FAFR)

Marine aquaculture in Western Port is conducted in the Flinders Aquaculture Fisheries Reserve (FAFR). The aquaculture industry in the FAFR was established in 1985 (Arnott *et al.* 2000), with longline culture of blue mussels (*Mytilus edulis*). The FAFR is 440 ha comprising an established harvesting area (350 ha) and a Greenfield extension (90 ha) to the area. The established harvesting area is located approximately 0.3 km offshore (east) from the township of Flinders with the Greenfield extension joining the eastern boundary approximately 0.7 km offshore. Water depth at the FAFR ranges from 7 to 11m. Lease configurations are as follows:

- 11 licences for harvest of mussels for human consumption in a total of 107 ha of the FAFR;
- 5 licences for the cage culture of abalone in a total of 15 ha; and
- 2 licences that authorise mussel culture for bait (not for human consumption) within 18 ha of the FAFR.

The licenced abalone sites and undeveloped areas are interspersed between licenced mussel sites. Very little production is currently being undertaken at the FAFR. According to local farmer interviews, the prevailing weather conditions have reduced the amount of production at this site due to exposure and subsequent damaging of infrastructure. Therefore, licence holders have moved their farms back to more protected lease areas.

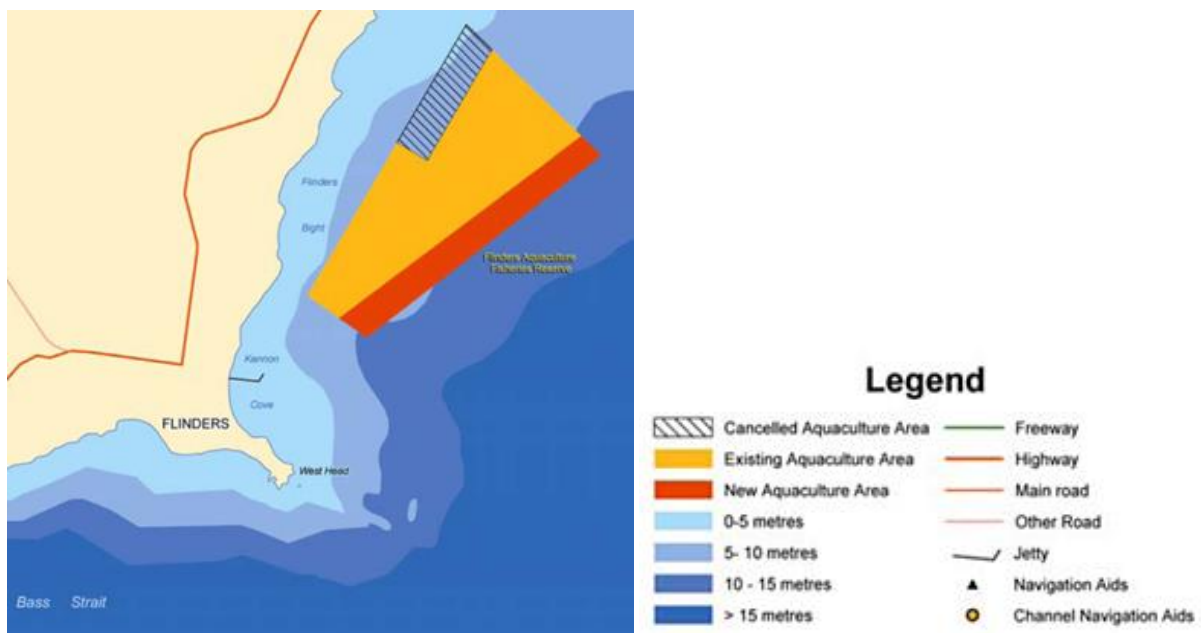
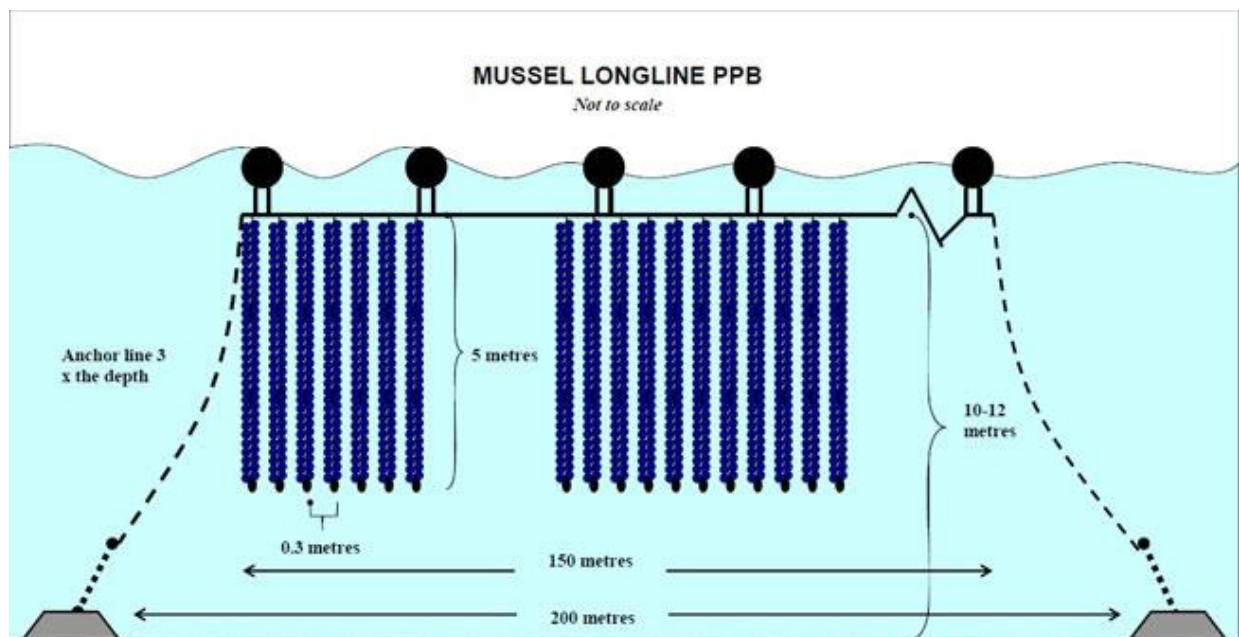


Figure 3. Flinders Aquaculture Reserve (DPI 2010).

MUSSEL FARM STRUCTURE

Mussels on the Peninsula are grown on longlines that form a 'backbone' to which the grow-out dropper ropes are attached. These grow-out ropes are usually 5m in length and are vertically suspended from the long line (Figure 4).



LEGEND



-Concrete anchor 2 ton-Chain anchor (75mm stud link)

-Anchor lines 25mm polypropylene

-Culture Rope 25mm polypropylene

Figure 4. A typical mussel farm set up and infra-structure (DPI 2010).

ENVIRONMENTAL MANAGEMENT

The predominant seafood activity in the shire is aquaculture. Sustainable environmental management is an important industry goal. The Australian Mussel Industry Association website provides details of key environmental regulatory operating conditions and licensing agreements as follows:

‘Mussel growers in each state are issued with a marine farm licence by their State governments to operate a marine farm lease according to specific conditions and criteria. Various pieces of state and commonwealth planning and environmental protection legislation are applied to and influence our mussel farming operations. This is usually condensed into one regulation under a State Fisheries, Aquaculture or Marine Act. This acts as a checkpoint and provides a rigorous framework for the industry's environmental compliance and sustainability.

Mussel growers know that looking after their environment is vital for healthy mussels, product safety and quality. Many seek to exceed environmental standards for their own operations and are also advocates for water quality. Our coastal areas support shellfish production, commercial and recreational fishers, land based primary industries, and a quickly rising population of people who want to live, work and play at the water's edge.

Australia's blue mussel farms are carefully located off shore or in remote locations that are selected marine farming zones and are suited to mussel growing. At the same time they recognise the interest of other stakeholders and neighbours and the balance between productivity and water quality. In Australia several mussel farms are either certified organic or have won prestigious awards for their pursuit of excellence in environmental sustainability. A healthy mussel is your coastal environment's tick of approval’ (AMIA 2014).



Photo supplied (AMIA 2014)

CASE STUDIES

INTERVIEW WITH LOCAL MUSSEL GROWER – FARMER A

The epi-centre of the local blue mussel industry is the Bellarine Peninsula. Two out of the three of Port Phillip Bay's biggest producers are located there; the 3rd based off Mornington Peninsula. A licence to farm blue mussels requires a lease of the water (ha) and a separate licence to grow the species as well as the production of Angasi oysters. (A European oyster that takes 3 years to grow to full size. Consumers tend to like a smaller size oyster however it is quite meaty and a great cooking oyster).

Licences cost between \$500 – \$3.6k / year. The licence fees are calculated by a cost recovery model from the fisheries department budget / staff contributions to the administration process. There is no Research & Development levy paid by farmers; limiting overall industry investment in technology and innovation for the industry.

Six years ago the local mussel industry contracted from 26 licences to 10; involving some consolidation of licences. Around this time the industry was experiencing declining wild spat production highlighting a potential risk to farmers relying on this source of stock for their businesses. Investment in a local hatchery was essential thus a public / private partnership between key mussel farmers and the state government emerged. The transition from partnership to full industry ownership and hatchery relocation must occur within the next 10 years as ordered by the State government.

There are three mussel farm investors in the hatchery and control the rope runs for the season. Non-investors are able to source ropes later during the season. However, there is a commitment for 20% of ropes to be made available to non- shareholders i.e. the smaller farmers (Dromana and Flinders).

Extreme pressure on the financial viability of local mussel farmers is due to the following issues:

- Heavy industry subsidies by the Tasmania and South Australia government for hatchery infrastructure and services
- Pressures from interstate supplies
- Poor awareness and branding of local products
- Lack of investment in Research & Development in Victoria
- Lack of an Industry Development Officer to engage with consumers to raise awareness and encourage opportunities for increased consumption per capita

Production and price

- The Mornington Peninsula currently produces about 230 tonnes of blue mussel products / annum
- Wholesale prices are upwards of \$3/kg
- Retail price \$ 7-12 / kg (depending on access points)i.e. fresh off pier vs other retail premises

Employment

- 8 Full-time equivalents employed directly by the businesses (farms, processing, sales)

Opportunities for Action (Farmer A perspective)

- Support for a Shire seafood festival to raise local awareness about this industry and introduce local residents and tourists to the culinary options associated with this product (high in Omega 3 oils);
- Branding of Mornington Peninsula seafood – through the Mornington Peninsula Produce as an option;
- Local investment in shore based infra-structure-jetty upgrades, boat access for more efficient unloading and selling of product and the enhancement of a ‘fishing port’ feel; and
- Initiate a marketing strategy to raise the identity of the Mornington Peninsula as a quality and fresh seafood access region.



INTERVIEW WITH LOCAL MUSSEL GROWER – FARMER B

This business operates the Mt Martha aquaculture lease which comprises 5 sites of 18ha each or 90ha. The total site extends to 150 ha with an option for the business to buy gaps between leases which will give access to a huge amount of available water for future expansion. The leases were purchased in 2007 via a government auction system and the company's acquisition of them has reduced the competition for wharf space between businesses at Schnapper Point pier. The business is a member of the Australian Mussel Association which comprises 6 growers from Victoria (2), Tasmania (2), South Australia (1) and NSW (1) – <http://www.australianmussels.com.au>.

Australian Blue mussels and a native flat oyster (*ostrea angasi**) are grown on the farm as they are the only oyster allowed to grow in the state of Victoria. There are two commercial boats moored at this location which make daily farm visits (weather dependent). Product is harvested and taken to a Mornington based factory for de-bearding, cleaning and vacuum packaging. Currently, fresh product is distributed local outlets (independent supermarkets, fish shops, direct purchase, restaurants) and via regional wholesale markets. The company employs 3 full-time and 4 part-time staff, based in Mornington.

Marketing of local aquaculture produce is quite hard in terms of authentic micro-local branding. Product that reaches the peninsula has been sourced further afield but is branded 'local' in the context of Port Phillip. This is where the 'point of difference' needs to be strengthened via the implementation of a geographical provenance brand. Bulk export sales are also preferred methods of distribution and sales are being explored.

Opportunities for Action (Farmer B perspective)

- Aquaculture should be promoted as a sustainable industry as bi-valve species are filter feeders and contribute to a healthy bay;
- Marketing the angasi oyster as the Mt Martha Native oyster is an option and is similar to the large French oyster which attracts a premium price;
- The aquaculture industry is a critical stakeholder in the food security and food miles arena by providing a relatively cheap and accessible protein source and awareness of this feature needs to be supported by food industry experts;
- A process of awareness of the use and preparation of the products must be undertaken;
- Local branding to create a more defined 'point of difference' is essential;
- Easier consumer direct access to 'seagates' will enhance industry economic development opportunities through shortening demand and supply chains; and
- Enormous potential for industry growth in local production due to application of new technology and lease expansions; and
- Increased sales via support for short term car park to facilitate 'Seagate' access.



SCALLOPS

The Scallop Dive (Port Phillip Bay) Access Licence and quota was allocated by auction on 20 February 2014. Vicfish Pty Ltd won the auction of the Scallop Dive (Port Phillip Bay) Access Licence and quota. This is the first new wild harvest fishing access licence type to be allocated in Victoria since the establishment of the giant crab fishery in 2001. It is also the first commercial wild harvest fishery to be allocated by the Victorian Government using a public auction system (DEPI 2013). Key scallop growing zones in Port Phillip Bay are illustrated in Figure 5 below:

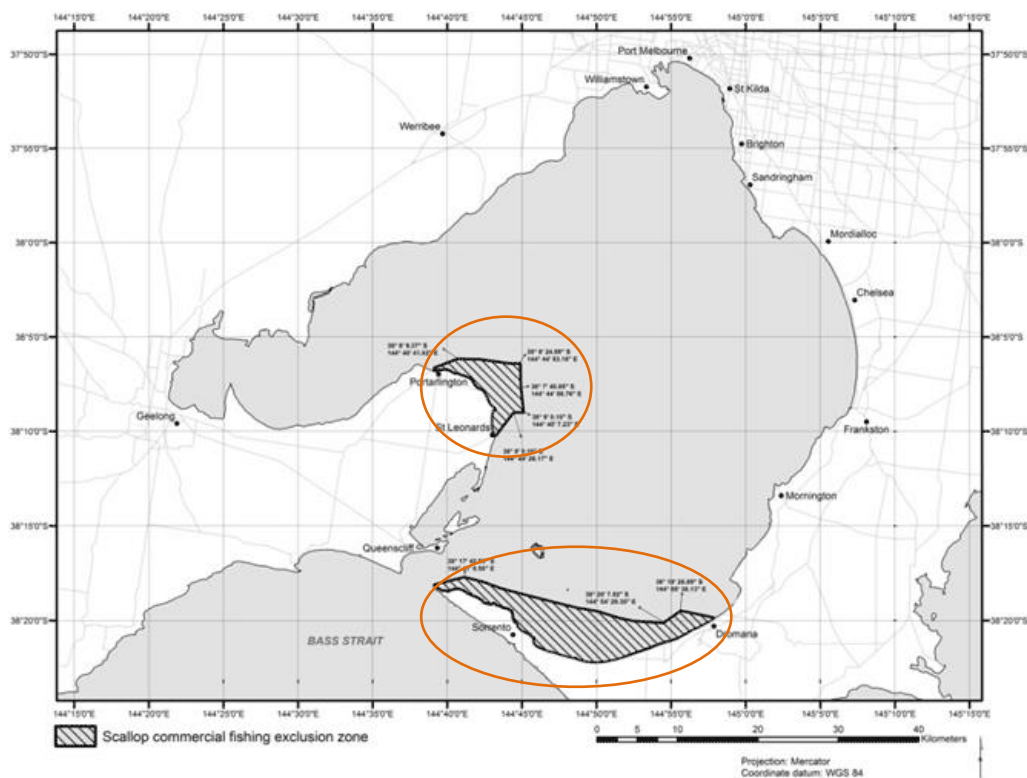


Figure 5. Key scallop growing zones within Port Phillip Bay (DPI 2010)



INTERVIEW WITH SCALLOP FARMER

Grant Leeworthy of the Port Phillip Bay Scallop Dive Fishery Association Inc. is lobbying for a second licence to be issued in recognition of the work they did to establish the fishery. Grant has also spawned scallops for the first time in Victoria and is looking to establish a land based hatchery on the Mornington Peninsula to continue this research. Scallops are much more difficult than mussels to rear in a hatchery but with patience they should slowly see some more results (Pers. comm. Grant Leeworthy, Sept. 17th 2014).



COMMERCIAL FISHING

Commercial fishing operates under the authority of a Western Port/Port Phillip Bay Fishery Access Licence. The total number of these licences is capped at forty-two. The existing licences can be transferred to new fishers but no additional licences can be issued. Commercial fishers are authorised to use a range of equipment types including longlines, mesh nets and haul seines to catch a variety of fish species such as sardines, king george whiting and snapper. These fishers provide fresh, high quality and sustainably harvested seafood to Victorian consumers, many of whom either choose not to or may be unable to participate in recreational fishing.

Port Phillip Bay commercial fishers are subject to controls on fishing equipment under the *Fisheries Regulations 2009*; and in some cases, voluntarily limit activities during peak periods to minimise interactions with the public (DEPI 2013). The range of local seafood products include:



FARMGATES (SEAGATES)

A recent report by the Mornington Peninsula Marine Industry Alliance (2013) identified the following opportunities for local seafood expansion based on consumer demand. The following is an extract from their industry analysis:

‘On the Mornington Peninsula, there is further pressure to generate and sell local seafood (as well as other local foodstuffs) to provide visitors with an authentic experience of the region. Presently, local seafood is commercially provided via itinerant fishing vessels and from the local mussel producers that manage and harvest aquaculture licence areas in Port Phillip and Western Port. There is no local fishing fleet based in the Mornington Peninsula & Frankston region. There are no special facilities to land, clean, distribute or retail seafood on the foreshores of the region. Local fishers have suggested that seafood could be sold from boats at suitable harbours and piers or from retail nodes on the foreshore or within marinas. When local seafood is available, the product should be integrated as part of the tourism region’s food and wine offer. This would be a point of difference for the Mornington Peninsula compared with nearby food and wine regions’

Local direct access sales of seafood products between the farmer and customer are quite limited across the shire. Considering the region accounts for 10% of Victorian coastline, currently only two jetties, an itinerant seafood van and fishing hut are the main contact points between local seafood producers and consumers. A recent seagate trial, to enhance access to fresh marine based food purchasing points for consumers commenced on a shore site in 2013. It has been an important activity of the Shire to support local producers with opportunities that their land based counterparts receive i.e. direct consumer access and sale of local fresh produce where the product is grown.

Support for a vibrant and extensive Seagate experience will encourage greater understanding of the use and benefits of these food sources; stimulate an increase in seasonal and broad based consumption of these products; and provide greater economic benefits to the industry in terms of sales and employment. The Local Food Industry Advisory Body (FIAB) is developing a Certified Trust mark (CTM) and Provenance brand. This concept will help local farmers to develop greater exposure for their ‘point of difference’ to market local produce.



INDUSTRY AWARENESS

Murray the Mussel and Peter Russel Clarke are also being used to promote quality and cooking aspects of the blue mussel by the Australian Mussel Industry Association. The industry is determined to bust the long held myth **that mussels that don't open are no good to eat!**

MURRAY THE MUSSEL



Murray the Mussel promotional video <http://www.youtube.com/watch?v=Vmmlmdkv-2w>

PETER "RUSSELL" CLARKE – COOKING MUSSELS

Peter Russell-Clarke's guide to easy mussels

Buy



Live, fresh
Mussels.

Store



Fridge in their original packaging.
No extra plastic bags.

Prepare



Rinse in
cold water.

Cook



3 minutes in
favourite sauce.



To find out more visit australianmussels.com.au

AQUA-TOURISM

This concept has been successfully developed in other coastal regions to expose interested people to the industry and its production systems. These types of interactive ventures compliment the strategic tourism and agricultural goals for a region. Examples of successful aquaculture and seafood interactive activities include:

Case Study 1: South Australia's Aquaculture trail

Follow oysters, prawns, scallops and fish around the pristine waters of the [Eyre Peninsula](#). Self drive or visit the aquaculture farms, fishing boats and old fishing ports on organised tours. See where threatened murray cod are farmed in Whyalla and taste fresh oysters in Cowell. Swim with tuna in Port Lincoln and spot dolphins around the oyster farm of Coffin Bay. Hand pick fresh crayfish in Elliston and feast on freshly-caught whiting, abalone and blue swimmer crabs in Streaky Bay and Ceduna. Along the way, swim and surf from long white beaches, stay in sleepy seaside towns and walk rugged sea cliffs and discover diving hot-spots For more information visit South Australia's Aquaculture Trail at www.australia.com/explore/states/sa/sa-aquaculture-trail.aspx



Case Study 2: TINCAN Bay Seafood Festival

The Tin Can Bay Seafood Festival is a fantastic celebration of the wonderful variety of Local Fresh Seafood that our local primary producers have to offer, and a brilliant way to talk, taste and buy from them. Food, fun, entertainment and plenty more for the whole family all on the beautiful foreshore parklands overlooking Tin Can Bay.

With stalls, demonstrations, discussions, hands-on and other activities throughout the day, the Festival has something for everyone and is a great way for people to support the best of Tin Can Bay Seafood.



(Image supplied TINCAN Bay Tourism) 2014) www.tincanbaytourism.org.au/events/seafood-festival

Case Study 3: Feast on Western Australia's fresh, succulent seafood.

Western Australian seafood and freshwater fish is among the finest you'll ever hook, cook and tuck in to. WA and Perth are blessed with some of the most biodiverse marine habitats and inland waters on Earth, providing a bounty of unique fresh flavours. Experience:

- **The finest fresh fish and chips:** The biggest hook would have to be Fremantle's Fishing Boat Harbour, serving fish and chips fresh from the boat. Although you'll also find a prize-winning deep-fried catch in Leederville, City Beach and even as far north as Broome.
- **Take a farm or factory tour:** Learn from the experts and follow the fascinating journey from the water to your plate on a guided tour of the facilities at a Western Australian seafood factory or freshwater fish farm.
- **Hook your own dinner:** If you'd rather catch your own, drop a line at one of WA's top fishing spots, from deep sea, game and beach fishing
- **Shop for the catch of the day:** If you'd rather leave fishing to the experts, but want something fresh to throw on the barbie, head for Perth's finest fish markets in Fremantle and Leederville to select your spoils.

www.westernaustralia.com/en/Things_to_See_and_Do/Food_and_Wine/Pages/WA_seafood.aspx

ECONOMIC ANALYSIS SUMMARY

According to the MP Marine Alliance (2013) the estimated combined value of production of aquaculture, seafood and fishing is **13m** and provide **36 local jobs**.

Remplan analysis

The 2014 Remplan analysis does not provide a breakdown of aquaculture values of production but combines a Fishing, Hunting & Trapping category with an estimated value of \$7.12m. The number and type of Seafood businesses are broken down by the following ABS industry codes.

Table 2. REMPLAN Analysis data sets for Mornington Peninsula Shire (April 2014).

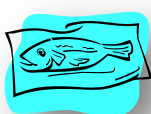
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		0202 Offshore Caged	0
		0203 Onshore	1
Fishing	041 Fishing	0149 Other fishing	17
		0411 Rock lobster & crab potting	1

REMPAN summary analysis of the Fishing, Aquaculture, Hunting and Trapping sector / annum:

- Total wage estimates: \$1.05m
- Value added products: \$2.4m
- Regional exports – \$4.5m
- Local expenditure – \$2.75m
- Local jobs (Fishing, Hunting & Trapping) – 18

MP Marine Alliance

The MP Marine Alliance (2013) the estimated combined value of production of aquaculture, seafood and fishing is **\$13m** and provide **36 local jobs**. This estimate has been derived from a more localised analysis of the industry through direct engagement and discussion. Hence, the data obtained presents a higher level of estimated production values and employment compared with the ABS desktop approach.



INDUSTRY SCENARIO ANALYSIS

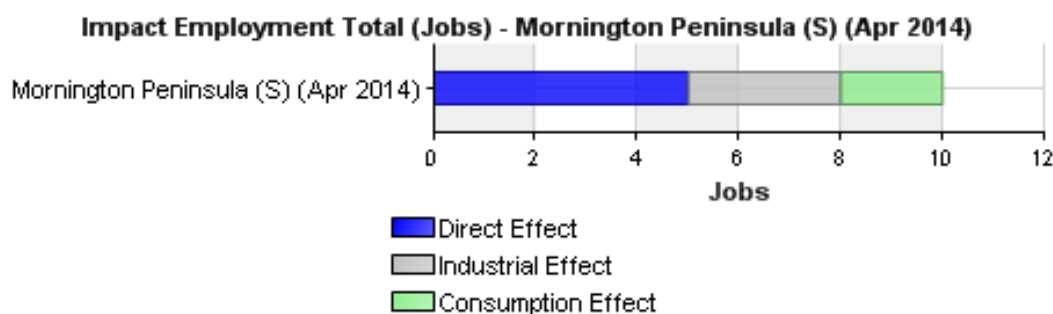
The sector has a low employment base but the potential to generate significant increases in productive capacity has been acknowledged by farmers. Therefore, the demand for labour increases is predicted. Scenario analysis for positive changes in employment and output reflects the following economic impacts.

IMPACT ON EMPLOYMENT

From a direct increase in output of \$1.983 million the corresponding creation of direct jobs is estimated at 5 jobs. From this direct expansion in the economy, flow-on industrial effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in the gain of a further 3 jobs. This represents a Type 1 Employment multiplier of 1.600.

The increase in direct and indirect output and the corresponding creation of jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated to further boost employment by 2 jobs.

Total employment, including all direct, industrial and consumption effects is estimated to increase by up to 10 jobs. This represents a Type 2 Employment multiplier of 2.000.

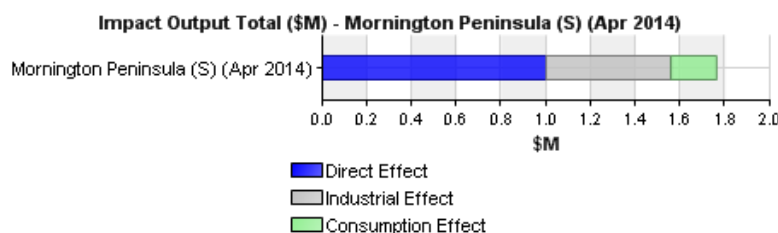


IMPACT ON OUTPUT

A direct increase in output of \$1.000 million estimates the demand for intermediate goods and services would rise by **\$0.558 million**. This represents a Type 1 Output multiplier of 1.558. These industrial effects include multiple rounds of flow-on effects, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated at \$0.204 million.

Total output, including all direct, industrial and consumption effects is estimated to increase by up to \$1.762 million. This represents a Type 2 Output multiplier of 1.762.



OPPORTUNITIES FOR ACTION

- **Promote** aquaculture (bi-valve species) as a sustainable food supply industry;
- **Market** the Angasi oyster to attract a premium price);
- **Recognise** aquaculture as a critical stakeholder in food security and food miles arena by providing a relatively cheap and accessible protein source;
- **Local branding** to create a more defined 'point of difference' is essential;
- **Enhance** consumer access to 'Seagates' will enhance industry business development opportunities through direct sales from producer to consumer; and
- **Establish** a Festival event to increase awareness of local industry (Sea to Plate).

CONCLUSIONS

The Mornington Peninsula Shire local aquaculture and seafood sector is niche but critical. It facilitates the regions land and sea connection; enhancing the identity of marine based food production systems. Access to products is seasonal and ad hoc. Awareness of food-on- offer through promotion of production and provenance attributes will encapsulate the 'sea to gate' value of goods, services, financial and environmental contributions to the local economy.

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