



Victorian Pipi Fishery Management Plan

Draft



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2018

Victorian Fisheries Authority

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1 Executive summary

The Victorian Pipi Fishery Management Plan (the Plan) establishes a framework for managing the pipi fishery in a way that ensures that all Victorians can enjoy the resource for generations to come.

The Victorian Fisheries Authority (VFA) has prepared the Plan, in consultation with a stakeholder-based Victorian Pipi Fishery Management Plan Steering Committee, comprised of representatives from Seafood Industry Victoria, VRFish and the VFA. Input was also received from commercial licence holders, Traditional Owners, conservation representatives and other stakeholders. The Plan will be in effect for 5 years pending the results of the review process outlined in Section 6.

The Plan recognises that pipi are of particular importance to Aboriginal people and there is extensive evidence throughout Victoria of historical use of pipi for personal, cultural and communal use. The Plan recognises the rights of Traditional Owners and seeks to create new economic development opportunities for Aboriginal people.

The Victorian commercial pipi fishery is relatively small but an important supplier of pipi for bait and for human consumption. Pipi have long been a seafood delicacy in Asia, but are now popular on Australian restaurant menus and on the family dinner table. The first time that Victorian pipi were available on the floor of the Melbourne Seafood Market was a momentous and welcome event!

The pipi fishery is also prized by recreational fishers who recognise their excellent eating qualities and utilise them as bait for other valued species such as King George whiting.

Improving information on the status of pipi stocks in Victoria is a key focus the Plan. There is an opportunity to improve catch reporting to give better information upon which to manage the fishery. There are also existing, and planned, research projects that will provide information on the stock, including connectivity between pipi populations within Victoria and the broader region.

In view of the wide range of stakeholders, the Plan is intended to be a blueprint for future actions to benefit all users of the resource. This is reinforced by the key management objectives which provide for long-term sustainability of the pipi fishery, equitable resource access and use, and cost-effective and participatory management.

The objectives for the fishery have been translated into more specific strategies and each strategy is effected through one or more actions. These identify the future priority activities in the fishery and include establishing an ongoing Quota Management System, setting a Total Allowable Commercial Catch, establishing Individual Transferable Quotas, creating a specific commercial entitlement, improved catch reporting and actions for the recreational and Indigenous sectors.

The arrangements set out in the Plan will apply at the commencement of the new management plan being declared. The existing knowledge of the fishery has informed the development of these arrangements. Given the need to improve stock assessment information over the life of the plan, a risk-based approach for the fishery has been adopted.

The VFA would like to thank the members of the steering committee for their involvement and effort in developing the Victorian Pipi Fishery Management Plan and to all members of the community who provided input.

2 Background to the fishery

2.1 Introduction

This management plan (the Plan) applies to the Victorian pipi fishery. ‘Pipi’ is the common name given to the small bivalve, *Donax deltoides*, which is found on high-energy sandy beaches in intertidal and shallow subtidal zones. The Victorian fishery covers the entire Victorian coastline, with the exception of the intertidal zone in Port Phillip Bay and Marine National Parks and Marine Sanctuaries where shellfish cannot be harvested.

The Victorian Fisheries Authority (VFA) has prepared the Plan in consultation with a stakeholder-based Victorian Pipi Fishery Management Plan Steering Committee, and in accordance with Part 3 of the *Fisheries Act 1995* (the Act). It comes into effect following its declaration in the Victoria Government Gazette and remains in place until a new Plan is declared or is cancelled in accordance with the requirements of the Act.

Under the Act, the Minister may amend a management plan by notice published in the Victoria Government Gazette.

The Plan recognises the ongoing economic and social importance of all sectors, including commercial, recreational, Indigenous and conservation interests. It sets out strategies and actions to achieve the management objectives including creating a specific commercial entitlement, establishing an ongoing Quota Management System, including a Total Allowable Commercial Catch, updated catch reporting requirements and actions for the recreational and Indigenous sectors.

2.2 Species, stocks and biology

Pipi (*Donax deltoides*), also sometimes referred to as ‘surf clam’ or ‘Goolwa cockle’, have naturally large spatial and temporal variations in recruitment, settlement and distribution, influenced by environmental factors. Pipi inhabit the high energy surf zone of sandy beaches from Eyre Peninsula to Kingston in South Australia, through Tasmania and Victoria, to Fraser Island in south-eastern Queensland (McLachlan et al 1996).

In Victoria, there are known harvestable quantities of pipi on beaches in Discovery Bay and surrounds in the west, and in Venus Bay and surrounds in the east.

Pipi, like most bivalve species, filter and digest microscopic particles (mostly phytoplankton) from the turbulent swash water and are prone to predation from water birds, various rays, cephalopods, sand crabs, and beach worms.

Pipi are broadcast spawners and release their eggs and sperm into the water column where fertilisation occurs. After spawning, the larvae inhabit the water column for three to eight weeks depending on location, water temperature and food availability. Mortality during this planktonic stage can be significant. Towards the end of the planktonic phase, larvae develop a foot and rudimentary gills before settling onto the substrata over which they crawl and search for suitable habitat and, eventually, metamorphosis to the adult, albeit smaller, form. Following metamorphosis, juvenile pipi inhabit the same environment as adults.

Broadcast spawners like pipi rely on environmental cues to trigger mass spawning events that help to ensure a high rate of reproductive success. Spawning may be triggered by one or a combination of the following cues: environmental factors such as changing temperature, salinity or nutrient levels; physical changes in water currents and other hydrological processes.

There is high genetic variation between populations of pipi on either side of Bass Strait suggesting at least two biological stocks (Miller et al 2013). Consequently, there is no genetic differentiation between Discovery Bay and South Australia populations. Similarly, there is no genetic differentiation between Venus Bay and NSW populations (Miller et al 2013).

In South Australia, the size at maturity, where 50% of the population is mature, is 28 mm, while 95% of the population is mature at 32 mm (Ferguson 2013). In NSW, 50% of the population is mature at 36mm (Murray Jones 1999). There are no size at maturity estimates available for Victoria.

2.3 Legislative and policy framework

The Victorian pipi fishery is managed in accordance with the *Fisheries Act 1995* (the Act) and the Fisheries Regulations 2009. The Act provides the legislative framework for managing Victoria's fisheries resources and sets out the general provisions applicable to all recreational fishing activities and commercial access licences, including the classes of licence that authorise pipi harvesting.

The objectives of the Act are:

- to provide for the management, development and use of Victoria's fisheries, aquaculture industries and associated aquatic biological resources in an efficient, effective and ecologically sustainable manner;
- to protect and conserve fisheries resources, habitats and ecosystems including the maintenance of aquatic ecological processes and genetic diversity;
- to promote sustainable commercial fishing and viable aquaculture industries and quality recreational fishing opportunities for the benefit of present and future generations;
- to facilitate access to fisheries resources for commercial, recreational, traditional and non-consumptive uses;
- to promote the commercial fishing industry and to facilitate the rationalisation and restructuring of the industry; and
- to encourage the participation of resource users and the community in fisheries management.

The Fisheries Regulations 2009 provide the general detail regarding the activities authorised by a recreational fishery licence, and specific detail regarding authorised activities and the obligations of commercial fishery access licence holders and persons acting on their behalf. In addition, there may be further conditions which will be expressed or referred to on an access licence.

All Australian governments, including Victoria, have made a commitment to manage fisheries according to the principles of ecologically sustainable development. These principles include:

- ensuring that fishing is carried out in a biologically and ecologically sustainable manner;
- ensuring that there is equity within and between generations regarding the use of fish resources;
- maximising economic and social benefits to the community from fisheries within the constraints of sustainable utilisation;
- adopting a precautionary approach to management, particularly for fisheries with limited data; and
- ensuring that the processes and procedures involved in management of a fishery are appropriate, transparent and inclusive.

Management of the Victorian pipi fishery will be consistent with other key legislation and policy including, but not limited to:

- *Victorian Fisheries Authority Act 2016*;
- *Environment Protection and Biodiversity Conservation Act 1999*;
- *Environment Protection Act (Victoria) 1970*;
- *National Parks Act 1975*;
- *Land Conservation (Vehicle Control) Act 1972*;
- *Crown Land (Reserves) Act 1978*;
- *Coastal Management Act 1995*;
- *Seafood Safety Act 2003*;
- *Native Title Act 1993*;
- *Traditional Owner Settlement Act 2010*;
- *Aboriginal Heritage Act 2006*;
- Aboriginal Fishing Strategy 2012; and
- *Occupational Health and Safety Act 2004*.

2.4 The fishery

2.4.1 The commercial fishery

In Victoria, there are eleven classes of Fishery Access Licences (FALs) that authorise commercial pipi harvest. Most of these licence classes, however, cannot be used to harvest pipi due to equipment restrictions and/or because the licence does not authorise fishing in areas where pipi are found.

Below is the list of the licence classes and the number of licences issued in each class that have some likelihood of harvesting pipi (as of February 2018).

1. Ocean Fishery Access Licence (147¹)
2. Bait (General) Fishery Access Licence (5²)
3. Mallacoota Lower Lake (Bait) Fishery Access Licence (1)
4. Snowy River (Bait) Fishery Access Licence (2)

Since April 2008, 26 licence holders have recorded 'pipi' catches. It is likely that some of these fishers operating in low energy, muddy environments where cockles, not pipi, are the dominant bivalve species, recorded *Anadaria* and/or *Katelysia* species as pipi catch.

Ninety-five percent of the commercial pipi harvest to date has been taken under the Ocean Fishery Access Licence (OFAL). The OFAL is not transferable (e.g. cannot be leased, sold or bequeathed) and the licence holder cannot nominate an operator (i.e. the licence holder must be present during fishing operations).

Fishing effort under an OFAL is input controlled in that no mechanised harvesting methods are permitted in the fishery. There is, however, no limit on the number of employees that can be engaged by an OFAL holder to assist in harvest.

There is, therefore, significant latent effort in the fishery due to the number of licences that could potentially harvest pipi and to the unlimited number of people who can assist an OFAL holder and other licence classes.

As this latent effort represents a risk to fisheries sustainability, the Victorian Fisheries Authority (VFA) introduced management arrangements in 2017 to restrict the number of licence holders that could access pipi and the amount of pipi that could be harvested. This follows a series of Fisheries Notices, implemented since 2013, which have variously closed sections of the coast and introduced management arrangements to protect the sustainability of the pipi resource (see Section 5.1).

There are two main harvesting areas within Victoria; Discovery Bay in the south-west, which is primarily a commercial fishery, and Venus Bay in the east, which is primarily a recreational fishery. The harvest in Discovery Bay reflects the overall pattern of commercial take in the State (Figure 1). Small volumes have been harvested by commercial fisher/s in Venus Bay and other areas of Victoria but these amount to a total of 11 tonnes over ten years (from 2007/08 to 2016/17).

In common with developing fisheries, commercial catches in Discovery Bay increased from less than 1 tonne per fishing year (April to March) from 2008/09 to 2010/11 to around 90 tonne in 2012/13 (Figure 1). It was this rapid escalation in catch and concerns about the sustainability of this level of harvest that triggered the introduction of the first Fisheries Notice in December 2013 (Section 5.1). Pipi catch in the 2013/14 year was maintained at 90 tonne but decreased to 82 tonnes in 2014/15, followed by 58 tonnes in 2015/16 and 42 tonnes in 2016/17 (Figure 1).

The catch per unit effort (CPUE) shows an increase from 9 kgs per day in 2009/10 to 326 kgs per day in 2013/14, followed by a decrease to 130 kgs per day in 2016/17 (Figure 2). With the introduction of a Fisheries Notice in September 2017, the fishery was limited to eight OFAL holders who were each restricted to 150kgs per day and eight fishing days per calendar month. This limited the total catch as well as the CPUE where 'days fished' is the measure of effort. CPUE is a coarse indicator of the status of the pipi fishery as the unit of effort (day) can be comprised of any number of fishing hours. This is addressed in the Plan through changes to reporting requirements (Section 5.2.9).

¹ Twenty-four of the 171 issued Ocean Fishery Access Licences were omitted from this list as they are valid only whilst operating a vessel that is nominated against a Rock Lobster, Scallop (Ocean), Trawl (Inshore) or Purse Seine Fishery Access Licence.

² Five of the 12 issued Bait (General) Fishery Access Licences can access pipi as they can harvest by hand or with other appropriate equipment in waters where pipi are found.

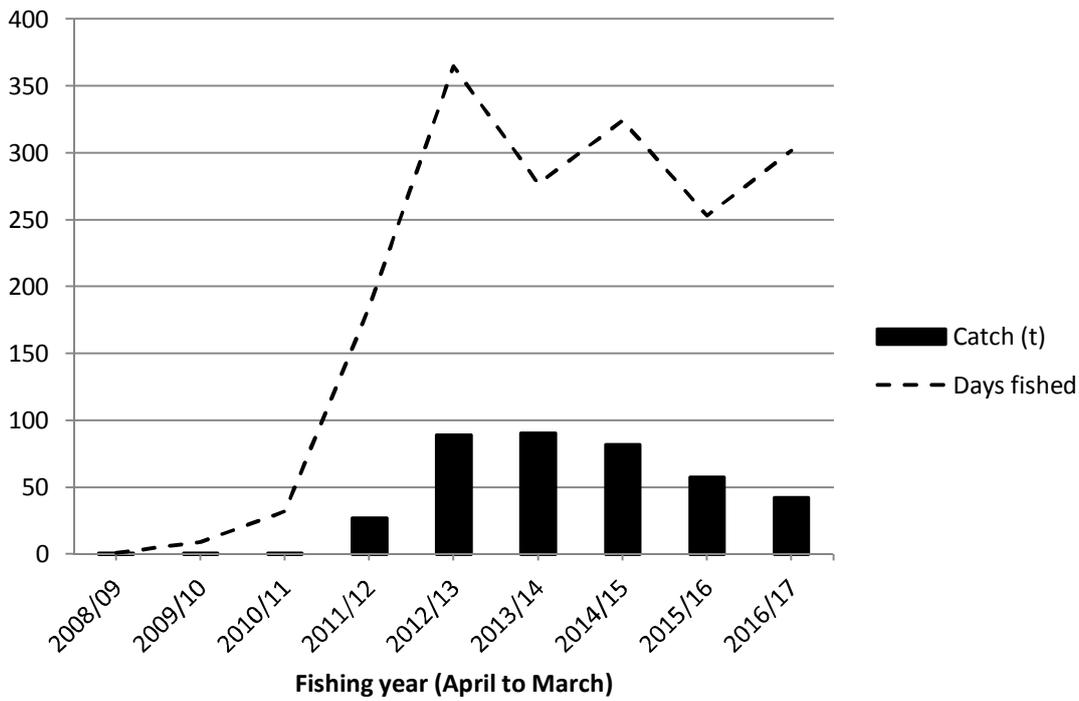


Figure 1. Commercial catch (tonnes) of pipi in Discovery Bay from 2008/09 to 2016/17 (data source: Victorian Fisheries Authority)

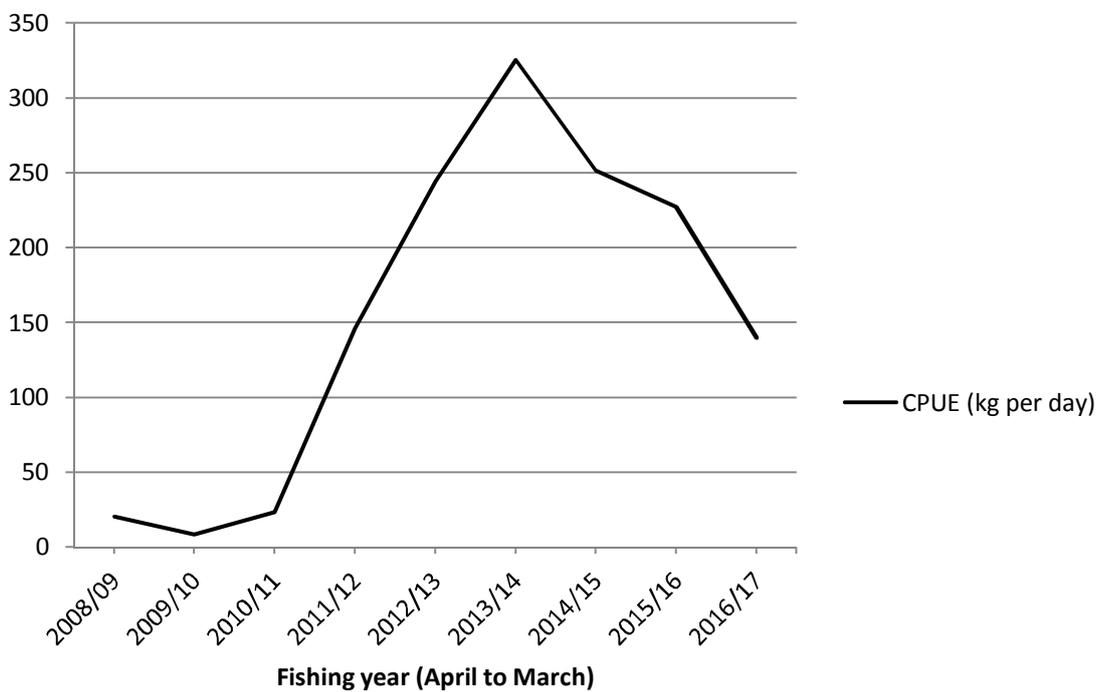


Figure 2. Commercial catch (kilograms) per unit effort (day) of pipi in Discovery Bay from 2008/09 to 2016/17 (data source: Victorian Fisheries Authority)

Pipi harvested in Victoria by commercial fishers is sold for bait or for human consumption. Pipi are a popular bait for catching species valued by recreational anglers. The bulk of the pipi bait supply in Victoria is sourced from South Australia due to the high volumes available from the South Australian fishery.

Pipi as a food source is becoming increasingly popular in Australia, although it has long been a seafood delicacy in Asian cultures. Victorian pipi is a high quality food product popular with consumers and fishers selling pipi for human consumption obtain a premium price for their product.

2.4.2 The recreational fishery

Most recreational pipi fishing occurs in Venus Bay although evidence suggests increasing numbers of recreational fishers are visiting Discovery Bay and elsewhere.

Recreational harvesters are limited to 5 litres (whole) or 1 litre (shucked) of pipi per person per calendar day while in, on, or next to, Victorian waters. In Venus Bay, in response to concerns about the numbers of recreational fishers in this area, the bag limit was reduced to 2 litres (whole) or 0.5 litre (shucked) of pipi per person. This reduced limit applies within Cape Liptrap Coastal Park between Point Smyth and Arch Rock.

No pipi can be harvested within the intertidal zone of Port Phillip Bay or in any Marine National Park or Marine Sanctuary.

Recreational fishers harvest pipi for food and for bait. Pipi have always been very popular with recreational harvesters from Asian backgrounds but are now harvested by recreational fishers from all backgrounds who recognise them as a great source of food.

Recreational fishing is primarily confined to the summer months when it is particularly popular and many fishers can be observed doing the 'pipi shuffle'. Over the 2014/15 summer holiday, Fisheries Officers inspected more than 2,000 people in Venus Bay, which was only a snapshot of those harvesting pipi during this time. The compliance rate for this operation was approximately 90%. Instances of individuals removing more than the bag limit are infrequent events.

The main challenges concerning the recreational fishery in Venus Bay relate to the influx of recreational fishers from Melbourne and elsewhere into small towns with minimal infrastructure (e.g. carparks, toilets, litter facilities). While these matters are not directly related to the sustainability of the fishery, the VFA will work with land managers and local councils to ensure high quality fishing experiences can be enjoyed into the future.

2.4.3 The Indigenous fishery

Aboriginal people have a strong connection to country and water that is central to their identity and culture. For Aboriginal people, cultural values are informed by, and interconnected with, traditional uses, spiritual connection, ancestral ties and respect for waterways, land, sea and the resources that these provide.

Fishing is an integral part of the cultural and economic life of coastal and inland Aboriginal communities. It provides an important source of food and is part of cultural and ceremonial life.

Pipi were clearly an important resource for Aboriginal people as evidenced by the presence of extensive pipi shell middens in many coastal areas of Victoria, including Discovery Bay and Cape Liptrap Coastal Parks. In northern NSW, pipi continue to be taken in large numbers as part of a significant cultural catch that is used mainly for food (Schnierer and Egan 2016).

Existing Aboriginal rights in Victoria

Victorian Traditional Owners currently have rights to access natural resources recognised under law. Members of Traditional Owner groups with a native title determination under the Commonwealth's *Native Title Act 1993* have non-exclusive rights to hunt, fish and gather natural resources for personal, communal and cultural purposes, without the need to obtain a licence. At the time of writing, three Victorian Traditional Owner groups have positive native title determinations: Gunaikurnai, Gunditjmarra and Wotjobaluk.

In addition to rights recognised in a native title determination, Section 211 of the *Native Title Act 1993* also applies to preserve native title rights and interests in natural resources by removing legal restrictions on activities such as fishing. This provision essentially allows native title claimants and holders to access resources (in non-commercial quantities) without a licence, in accordance with their traditional laws and customs.

Aboriginal rights are also recognised under Victoria's *Traditional Owner Settlement Act 2010*. Under this alternative settlement framework, the State partners with Traditional Owner groups to negotiate a comprehensive settlement that recognises their relationship to land and water, confers certain access, ownership and management rights over the land, determines decision making rights for land development

and natural resource management, and sustainably resources the Traditional Owner groups to give effect to the settlement. A settlement may include access to pipi for traditional and specified commercial purposes

At the time of writing, settlements had been reached with the Gunaikurnai and the Dja Dja Wurrung peoples. The Gunditjmarra are in the negotiation phase with the State.

The Victorian Aboriginal Strategy aims to incorporate the rights, interests, aspirations and culture of Aboriginal people into fisheries management. The strategy focuses on achieving three key outcomes: (i) recognition of Aboriginal customary fishing rights for recognised Traditional Owner groups, (ii) better economic opportunities for all Aboriginal people in fishing and related industries, and (iii) sustainable fisheries management in collaboration with Traditional Owner groups.

3 Risk assessment

A risk assessment was undertaken to inform the development of this management plan. The methodology of the assessment was based on the *National Ecologically Sustainable Development (ESD) Reporting Framework for Australian Fisheries*. The risk assessment involved input from the Victorian Pipi Fishery Management Plan Steering Committee over three meetings. The result is that risks have been identified and prioritised according to the impact on the fishery, or the impact of the fishery, and the likelihood that this will occur.

Risk was identified across eight components of ESD (retained species, non-retained species, impacts on ecosystem, community wellbeing, wider wellbeing (i.e. national), Indigenous wellbeing, governance, external factors affecting fishery). Each of these components was subdivided into more specific sub-components.

The Plan will primarily focus on outcomes that the VFA can directly manage through regulatory tools. The outputs from the risk assessment may indicate the benefits of engaging with other agencies that directly manage ecosystem and social issues and on areas of shared interest. The Plan may include actions as developed in consultation with these agencies, but should not commit to delivery of actions that are not the direct responsibility of the VFA.

The ESD risk assessment identified four 'high' risks for the Victorian pipi fishery (risks with a score of more than 11), which will be addressed through the Plan as a matter of priority (Table 1). Three of the four 'high' risks relate to access to the fishery, however, which is not regulated through the Act. These risks will be addressed through ongoing consultation with the appropriate land managers (Department of Environment, Land, Water and Planning (DELWP) and Parks Victoria (PV)) and Traditional Owner groups (Table 2).

Table 1. Summary of risks (score >11) identified for the Victorian pipi fishery

Component	Risk (issue)
Impacts on ecosystem	Use of motorised vehicles results in disturbance of cultural values
External factors affecting fishery	Coastal management legislation or policy prevents/restricts access points for a viable fishery
	Coastal management legislation or policy prevents/restricts access method for a viable fishery
	Conservation organisations impact on social licence for commercial and recreational harvesting

Table 2. Proposed management response to risks (score >11) identified for the Victorian pipi fishery

No.	Risk (issue)	Proposed management response
1	Use of motorised vehicles results in disturbance of cultural values	<p>The VFA, in conjunction with the Gunditjmara native title holders and land managers (DELWP, PV) will work towards a solution for the commercial fishery that minimises the disturbance of cultural values.</p> <p>At present, fishers can only access Discovery Bay via designated access points. The Gunditjmara native title holders have requested that a Cultural Heritage Management Plan (CHMP) be completed as a priority for the Discovery Bay Coastal Park, including the area of the designated access tracks. The VFA will work with the land managers to progress this request.</p>
2	Coastal management legislation or policy prevents/restricts access <i>points</i> for a viable fishery	<p>The VFA, in conjunction with Seafood Industry Victoria (SIV), and land managers (DELWP, PV) will work to improve beach access points for commercial fishers while minimising the impact on the cultural and conservation value of coastal sites. These access points can also be utilised by the recreational fishery.</p>
3	Coastal management legislation or policy prevents/restricts access <i>method</i> for a viable fishery	<p>The VFA, in conjunction with SIV and land managers (DELWP, PV) will work to improve beach access method for commercial fishers while minimising the impact on the cultural and conservation value of coastal sites.</p>
4	Conservation organisations impact on social licence for commercial and recreational harvesting.	<p>The VFA, in conjunction with SIV, will advocate for the commercial fishery, highlighting management arrangements including limited access and controlled sustainable harvest, benign harvesting methods and high-energy environments that quickly recover from disturbance.</p> <p>The VFA, in conjunction with Victorian Recreational Fishing (VRFish), will advocate for the recreational fishery, highlighting management arrangements including bag and possession limits, and demonstrated compliance with the limits.</p>

Eighteen ‘moderate’ risks were identified (risks with a score of between 6 and 10, Appendix 1), which were largely around the impact of commercial and recreational harvesting on pipi populations and the potential for localised depletion. There were also ‘moderate’ risks around the impact of existing management arrangements on the wellbeing of commercial, recreational and Indigenous fishers (defined, variously, as income / employment / fishing opportunities / lifestyle benefits / expectations and aspirations). These risks around the management of the fishery, and the impact of that management, will be addressed via the actions outlined in Section 4.

Some of the ‘moderate’ risks also identified an impact of the fishery on the ecosystem (i.e. interactions with threatened, endangered, protected (TEP) species, litter from the recreational fishery) and of external factors on the functioning of the fishery (i.e. PrimeSafe requirements, water quality and flow, Ramsar listing etc.). These risks are managed through advocacy and consultation with relevant authorities, where possible, although consultation on ‘high’ risks is the immediate priority for the fishery (Table 2).

4 Management objectives, strategies and actions

4.1 Management objectives and strategies

The objectives contained in the Act (Section 2.3) require Victoria's fisheries to be managed in an efficient, effective and ecologically sustainable manner. The following fishery-specific, 'guiding' objectives and subsequent strategies for the Victorian pipi fishery are consistent with these legislated objectives. These objectives and strategies were devised and approved by the Victorian Pipi Fishery Management Plan Steering Committee. Table 3 outlines the actions developed to address each strategy.

Objective 1: Long-term sustainability of the pipi fishery:

- Strategy 1: Ensure that the harvest is consistent with the ecological sustainability of the resource; and
- Strategy 2: Allow fishing for pipi in a manner that has acceptable ecological impact.

Objective 2: Equitable resource access and use:

- Strategy 3: Maintain access to the fishery for recreational, commercial and Indigenous fishers, taking regulations and legislation relating to access in coastal Crown land (including coastal parks) into account;
- Strategy 4: Promote a profitable and viable commercial fishery;
- Strategy 5: Maximise the cultural, recreational and lifestyle benefits of fishing for those who participate in utilising the resource; and
- Strategy 6: Promote the benefit of the fishery to the broader community.

Objective 3: Cost effective and participatory management:

- Strategy 7: Ensure that the management of the fishery and the provision of associated services are efficient, effective and responsive;
- Strategy 8: Apply the principles that users of the commercial fishery pay for the cost of services from which they benefit and for services that address risks created by their activities, and that the recreational sector continue to contribute to the cost of management; and
- Strategy 9: Enable participation by fishers and other relevant stakeholders in fisheries management, taking account of the respective responsibilities of government and fishers.

4.2 Actions

Table 3. Objectives, strategies and actions for the Victorian pipi fishery

Objective	Strategy	Actions
1. Long-term sustainability of the pipi fishery	1. Ensure that the harvest is consistent with the ecological sustainability of the resource	1(i) The sustainability of the commercial harvest will be safeguarded by transitioning the commercial fishery to an ongoing Quota Management System with a Total Allowable Commercial Catch that is set and managed by management zones.
		1(ii) Improved catch reporting will be implemented to give better information upon which to base management decisions.
		1(iii) The VFA will maintain an overview of the total harvest for the fishery, including commercial, recreational and Traditional Owner components (as much as is possible) to ensure overall harvest in the fishery is sustainable.
		1(iv) Appropriate recreational bag and possession limits will be maintained. In terms of managing the recreational pipi fishery into the future, bag and possession limits can be modified if there is a need or concern about the sustainability of the recreational harvest.
		1(v) A harvest strategy for the Victorian pipi fishery will be developed and implemented within five years as information and data become available.
	2. Allow fishing for pipi in a manner that has acceptable ecological impact	2(i) The Risk Assessment identified 'use of motorised vehicles results in disturbance of cultural values' as a high risk issue. The VFA, in conjunction with the Gunditjmara native title holders and land managers (DELWP, PV) will work towards a solution for the commercial fishery that minimises this risk. At present, fishers can only access Discovery Bay via designated access points. The Gunditjmara native title holders have requested that a Cultural Heritage Management Plan (CHMP) be completed as a priority for the Discovery Bay Coastal Park, including the area of the designated access tracks. The VFA will work with the land managers to progress this request.
		2(ii) The potential impact of motorised vehicles on nesting and feeding shorebirds can be minimised or avoided through agreements with land managers that control where, when and how access occurs. The VFA, in conjunction with Seafood Industry Victoria (SIV), and land managers (DELWP, PV) will work to improve beach use by commercial fishers.

Objective	Strategy	Actions
2. Equitable resource access and use	3. Maintain access to the fishery for recreational, commercial and Indigenous fishers, taking regulations and legislation relating to access in coastal Crown land (including coastal parks) into account	<p>3(i) The VFA, in conjunction with SIV and land managers (DELWP, PV) will work to improve beach access points and access method for commercial fishers while minimising the impact on the cultural and conservation value of coastal sites.</p> <hr/> <p>3(ii) Recreational access and use will be maintained by retaining the ‘recreational pipi fishing only’ area in eastern Victoria where recreational harvest of pipi is most popular.</p> <hr/> <p>3(iii) In order to facilitate access rights to pipi for personal, communal and cultural use, the VFA will continue to work with the Department of Justice and Regulation (DOJR) and the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) to facilitate access to pipis through Natural Resource Agreements (NRAs) under Victoria’s <i>Traditional Owners Settlement Act 2010</i>.</p>
	4. Promote a profitable and viable commercial fishery	<p>4(i) The VFA will transition the commercial fishery to a Quota Management System (QMS) with Individual Transferable Quotas (ITQs) allowing individuals to fish to maximise efficiency and profitability.</p> <hr/> <p>4(ii) Ensure management arrangements are effective at achieving management objectives whilst minimising costs.</p>
	5. Maximise the cultural, recreational and lifestyle benefits of fishing for those who participate in utilising the resource	<p>5(i) Work collaboratively with Aboriginal organisations, groups and individuals over time to build and foster a partnership approach that encourages Aboriginal participation in the fishery and utilisation of the resource.</p> <hr/> <p>5(ii) Recreational access and use will be maintained by retaining the ‘recreational pipi fishing only’ area in eastern Victoria where recreational harvest of pipi is most popular.</p>
	6. Promote the benefit of the fishery to the broader community	<p>6(i) The Risk Assessment identified ‘conservation organisations impact on social licence for commercial and recreational harvesting’ as a high risk issue. The VFA, in conjunction with SIV, will advocate for the commercial fishery, highlighting management arrangements including limited access and controlled sustainable harvest, benign harvesting methods and high-energy environments that quickly recover from disturbance.</p> <hr/> <p>6(ii) The VFA, in conjunction with VRFish, will advocate for the recreational fishery, highlighting bag and possession limits, and demonstrated compliance with the limits.</p> <hr/> <p>6(iii) Support SIV in its work to promote local seafood consumption in Victoria.</p>

Objective	Strategy	Actions
3. Cost effective and participatory management	7. Ensure that the management of the fishery and the provision of associated services are efficient, effective and responsive	<p>7(i) Ensure management arrangements are effective at achieving management objectives whilst minimising costs.</p> <hr/> <p>7(ii) Implement electronic catch reporting to improve efficiency and enable effective and responsive management.</p>
	8. Apply the principles that users of the commercial fishery pay for the cost of services from which they benefit and for services that address risks created by their activities, and that the recreational sector continue to contribute to the cost of management	<p>8(i) Ensure licence fees recovered from commercial licence holders are in accordance with the Government's cost recovery policy.</p> <hr/> <p>8(ii) Promote the use of Recreational Fishing Licence funds to support pipi research.</p>
	9. Enable participation by fishers and other relevant stakeholders in fisheries management, taking account of the respective responsibilities of government and fishers	<p>9(i) Provide opportunities for regular engagement with industry, Indigenous, recreational and conservation sectors with fisheries managers.</p> <hr/> <p>9(ii) The VFA will work collaboratively with Aboriginal organisations, including recognised Traditional Owner groups, and individuals to build and foster relationships and beneficial partnerships that support Aboriginal participation in pipi management.</p>

5 Managing the fishery

This section describes how the fishery will be managed to address the risks identified in Section 3 and to meet the fishery objectives and strategies outlined in Section 4.

5.1 The history and current management of the commercial fishery

The rapid and substantial increase in commercial pipi catch in Discovery Bay in 2012/13 prompted a closure of the coastline between Sutton Rocks and the Lake Yambuk outlet to commercial pipi harvest in December 2013. This action was taken as a precautionary measure because little was known about the status of the pipi resource in the area. In addition, a 35 mm minimum size limit and the requirement to prior-report fishing activity were introduced for the area that remained open to fishing.

The VFA (then Fisheries Victoria) extended the closure from Sutton Rocks to the Victorian/NSW border in 2014 to protect pipi populations in other parts of Victoria. In order to allow commercial fishing to occur in areas where it had operated historically, areas (commercial reporting grids) where 100kg or more had been caught since 2012 remained open. This did not include the area of Discovery Bay, east of Suttons Rocks through to Lake Yambuk, even though fishing had occurred here, as this was closed due to sustainability concerns. Four areas remained open to commercial pipi harvest. The size limit and requirement to prior-report was applied to these areas.

In 2013, in relation to the Draft Fisheries (Discovery Bay) Fisheries Notice 2013, a letter was sent to Ocean Fishery Access Licence (OFAL) holders stating that 'It is the intention that a record of pipi catch obtained after 1 October 2013 will not be considered in the development of future management arrangements for this fishery'.

In 2014, correspondence to OFAL holders reiterated this statement but further noted that 'Whether, and how, legally harvested catch history obtained before this date is considered, is yet to be determined but no assurances have been made to any Access Licence holder about any future allocation process. Under the Fisheries Act 1995, the Minister may determine the allocation method for the fishery'.

The management arrangements for the commercial fishery that were implemented in 2014 continued into 2015 and 2016.

In early 2016, the Victorian Pipi Fishery Management Plan Steering Committee (Pipi SC) was established to progress the development of the Victorian Pipi Fishery Management Plan. The Pipi SC was comprised of representatives from Seafood Industry Victoria, VRFish and the VFA. The VFA also invited Traditional Owner Corporations (who provided input via letters and meetings with the VFA), relevant Catchment Management Authorities and the Victorian National Parks Association (who provided input via correspondence) to participate.

The Pipi SC met six times over the course of a year to discuss the biological, social, economic and wider ecological aspects of the fishery and to receive input and views from stakeholders including, but not limited to, commercial fishers, Traditional Owner groups, land managers, fisheries officers, scientific researchers, fisheries managers from other Australian states and owners of bait and tackle businesses. As well as attending the Pipi SC meetings, stakeholders also provided input directly through correspondence and via additional meetings. There have been a number of meetings between SIV and the VFA with land managers in relation to access to the commercial fishery.

The Pipi SC completed a risk assessment (Section 3) and developed and endorsed a set of management objectives and strategies for the fishery (Section 4).

In 2017, the Pipi SC discussed options for short-term management of the fishery, which were developed into a Fisheries Notice that was implemented in September 2017 and included:

1. Re-opening all marine waters to commercial fishing except for a 'recreational pipi fishing only' area in eastern Victoria;
2. A zero catch limit for all Ocean Fishery Access Licence (OFAL) holders, except for those who were issued with an Endorsement Notice. In order to qualify for an Endorsement Notice, OFAL holders must have harvested 1 tonne, or more, between 1 January 2012 and 31 December 2016, in any part of the State.

3. The OFAL holders who were issued with Endorsement Notice were restricted to:
 - a. a catch limit of 150kgs per day/trip and 8 fishing days per calendar month;
 - b. a minimum size limit of 35mm;
 - c. a requirement to prior-report, and post-report, fishing activity; and
 - d. a requirement to harvest pipi via one of three access points in Discovery Bay. No access points were specified for other parts of the State.

In addition, total catch limits for two areas in Discovery Bay were specified: 20 tonne from the South Australia/Victoria border to Sutton Rocks, and 60 tonne from Sutton Rocks to the northern border of Discovery Bay Marine National Park.

5.2 The future management of the commercial fishery

The Pipi SC considered a range of approaches for the long-term management of the fishery, which included transitioning the fishery to an ongoing quota management regime. The VFA is proposing that quota management will be implemented for this fishery as pipi are particularly well-suited to this form of management, being a single species fishery with no bycatch and a high value product, particularly when sold for human consumption. Quota management also provides fishers with the flexibility to meet demand, which is highly seasonal in the pipi fishery.

The following regime will be implemented for the Victorian commercial pipi fishery:

5.2.1 Target species

The only species that can be harvested in the Victorian pipi fishery is 'pipi' (*Donax deltoides*). No other species can be retained.

5.2.2 Spatial management

There is evidence to suggest that localised depletion of the resource can occur. Therefore, in order to manage the risk of serial, localised depletion, the Victorian pipi fishery will be managed spatially by zones.

Initially, the fishery will be managed on the basis of five individual management zones: Discovery Bay (DB) which is further divided into areas east and west of Sutton Rocks (DBW, DBE), the Western Zone (WZ), the Eastern Zone (EZ) and Venus Bay (VB) (Table 4, Figures 3 to 5). As more data and information becomes available, the WZ and EZ may be further subdivided.

These management zones will be the basis for setting and managing the Total Allowable Commercial Catch (TACC) for the fishery.

The commercial Victorian pipi fishery will be restricted to marine waters other than Port Phillip Bay, Western Port, Gippsland Lakes and any inlet of the sea. No pipi can be harvested in any Marine National Park or Marine Sanctuary.

The 'recreational pipi fishing only' area in eastern Victoria will remain in place to provide recreational harvesters with a greater opportunity to harvest pipi in this popular area (Table 4, Figure 4).

In Discovery Bay, there will be a requirement to harvest pipi via one of four access points (Table 5, Figure 5).

Table 4. Management zones and the ‘recreational pipi fishing only’ area in Victoria

Zone	Description	Coordinates
DBW *	From the South Australian / Victorian border to Sutton Rocks, Discovery Bay.	From 38° 03.383' S 140° 57.933' E To 38° 08.633' S 141° 10.900' E
DBE	From Sutton Rocks, Discovery Bay, to the northern border of Discovery Bay Marine National Park.	From 38° 08.633' S 141° 10.900' E To 38° 20.000' S 141° 23.000' E
WZ	From the southern border of Discovery Bay Marine National Park to the most seaward point of Point Lonsdale	From 38° 22.748' S 140° 57.933' E To 38° 17.535' S 141° 10.900' E
EZ	From the most seaward point of Point Nepean to the New South Wales / Victorian border	From 38° 18.215' S 141° 10.900' E To 38° 30.304' S 141° 23.000' E
VB	From the southern boundary of the ‘recreational only’ area to the western most point of the entrance to Shallow Inlet	From 38° 43.866' S 145° 50.000' E To 38° 52.550' S 146° 11.600' E
‘Recreational Pipi Fishing Only’ Area		From 38° 38.883' S 145° 43.850' E To 38° 43.866' S 145° 50.000' E

* Discovery Bay (DB) which is further divided into areas east and west of Sutton Rocks (DBW, DBE), the Western Zone (WZ), the Eastern Zone (EZ) and Venus Bay (VB).

Table 5. Access points in Discovery Bay

Point	Description	Coordinates
A	Nelson Ocean Beach Walking Track	38° 03.883' S 141° 00.550' E
B	Noble Rocks Walking Track	38° 06.950' S 141° 07.860' E
C	Lake Mombeong Walking Track	38° 08.722' S 141° 11.076' E
D	Swan Lake Access Track	38° 12.960' S 141° 18.650' E

Geographic Coordinate System – WGS 1984

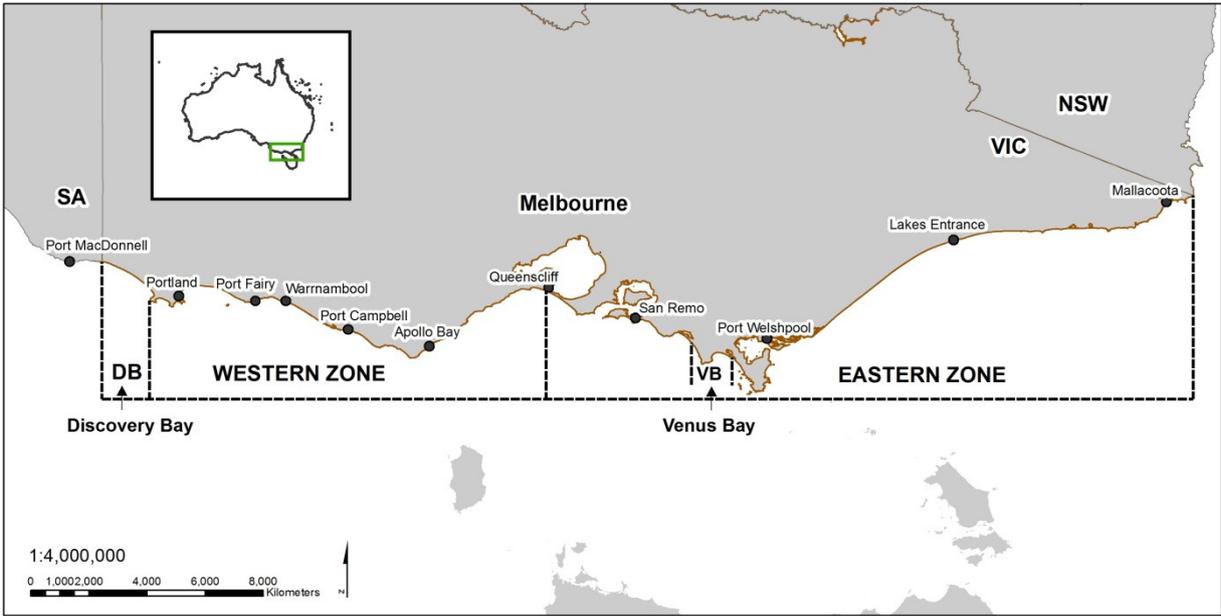


Figure 3. Management zones in Victoria

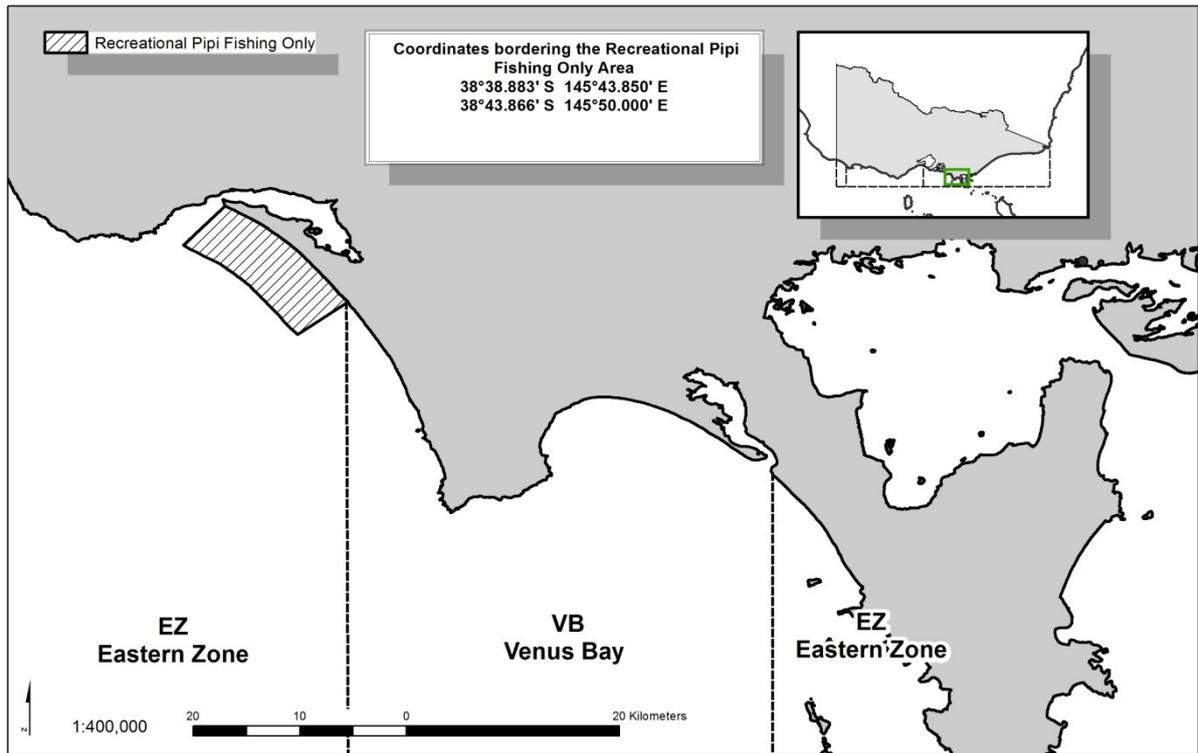


Figure 4. Management zones and the 'recreational pipi fishing only' area in eastern Victoria

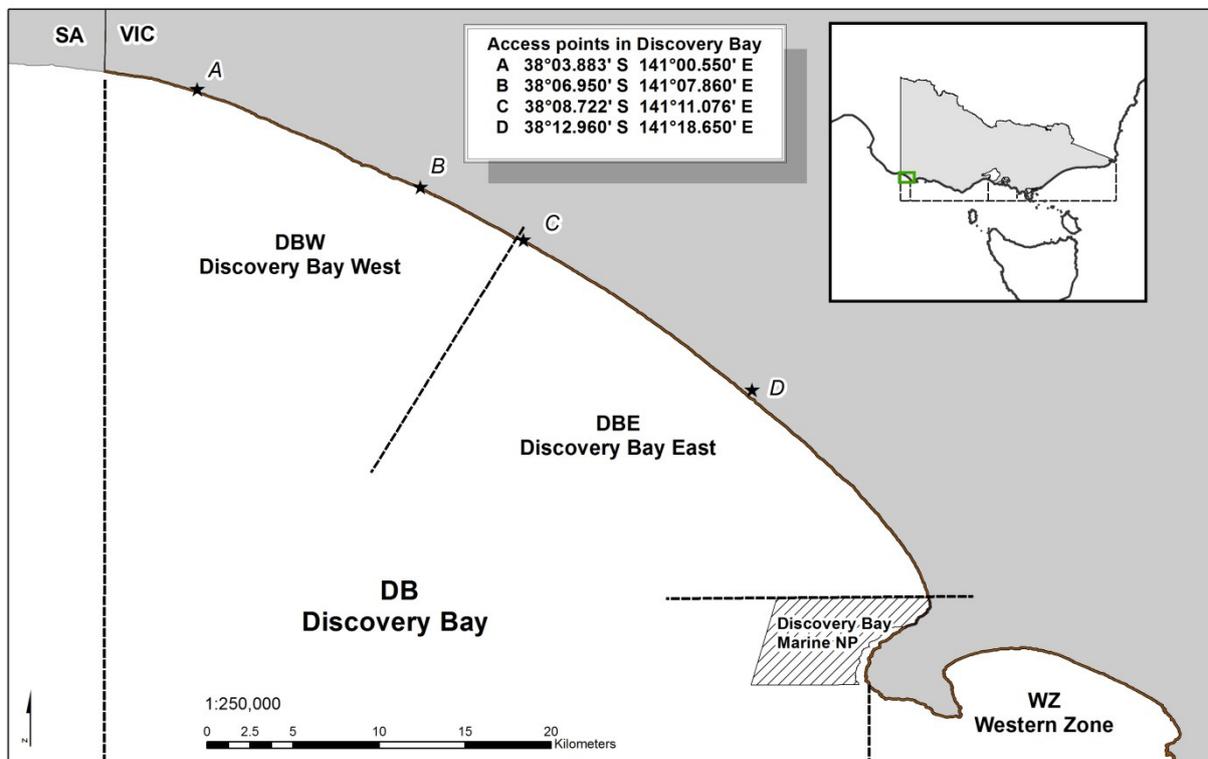


Figure 5. Management zones and the four access points in western Victoria

5.2.3 Total Allowable Commercial Catch (TACC)

The Victorian pipi fishery will be subject to a Total Allowable Commercial Catch (TACC) which will effectively, responsibly, and efficiently limit the total catch by the commercial fishery.

In quota managed fisheries there is generally an objective to have a TACC that provides maximum economic yield or maximum sustainable biological yield. To manage fisheries with this level of precision, however, requires significant investment in science to support the TACC setting and harvesting arrangements. The advantages of quota managed fisheries are that the property right in the fishery does encourage investment in TACC setting but, prior to this, the TACC must be set conservatively.

The TACC will be set and managed by individual management zone on the basis of available biological, economic and social information. In terms of biological information, there is limited data on the abundance of pipi from research conducted in Venus Bay. Other than that, the only data available are commercial fishery-dependent catch and effort data.

The TACC will be reviewed annually but will not exceed an amount of 110 tonnes across all management zones per year. This maximum limit will be reviewed after 2 years. This will ensure ongoing community support for the commercial fishery and maintain a strong social licence for the pipi industry.

In the Western and Eastern Zones, where there has been minimal fishing for pipi, an Expression Of Interest (EOI) process will be conducted for permits to enable pipi fishing under the conditions specified in the Fisheries (Victorian Pipi) Notice 2017 (i.e. daily catch limits, limit to the number of fishing days per month, size limit etc.). This will give Ocean Fishery Access Licence holders who are not included in the allocation process (Section 5.2.4) an opportunity to fish for pipi in unexplored areas.

The VFA will maintain an overview of the total harvest and performance indicators for the fishery, including commercial, recreational and Traditional Owner components (as much as is possible) to ensure overall harvest in the fishery is sustainable.

A 'commercial quantity', which is yet to be determined, will be legislated for pipi so that anyone with more than the commercial quantity in their possession, anywhere in Victoria, will need to provide legitimate information on the source of the pipi.

5.2.4 Quota

A Quota Management System will be implemented for the commercial fishery to protect biological sustainability and ensure economic productivity, while enhancing community support for fisheries management. Quota is a specific, tradable entitlement that controls total take to meet sustainability objectives while encouraging investment, stewardship and cooperation to maximise the value of the resource.

The Act provides for quota management in the form of Individual Transferable Quota units (ITQs) that are allocated or tied to a fishery access licence. ITQs will represent the quantitative, transferable entitlement securing the right to harvest a proportion of TACC annually and in perpetuity. ITQs may be temporarily (leased) or permanently (sold) transferred to holders.

Initially, at the commencement of the new arrangements, a value will be set for each quota unit that results in a sufficient number of quota units in the fishery to support a market and trading in quota. The value of each unit will vary over time in response to adjustments to the TACC (within the maximum amount that applies for the life of the plan).

Quota (the quantity of pipi that can be harvested) will be linked to each licence. The quantity of pipi comprising an individual quota unit may be amended at any time through the publication of a further quota order published in the Government Gazette.

Allocation of quota

The VFA will establish an Independent Allocation Advisory Panel (IAP) to provide advice on the allocation of ITQs in the Victorian pipi fishery. The IAP will be comprised of a legal member, an economic member and a member of the fishing industry. All members will be independent of the VFA and independent of the pipi fishery. The Presiding Member (Chair) will be the legal member (i.e. a retired judge or other qualified member of the legal profession).

The IAP will be required to advise the Minister for Agriculture on the commercial licence holders who are eligible for the allocation process, as well as the most appropriate method for allocating the pipi resource amongst these eligible licence holders. It will be necessary to restrict the number of participants in the commercial pipi fishery as there is considerable latent effort in the Ocean Fishery Access Licence class.

The IAP will consider written and oral submissions from licence holders and other stakeholders and may hold regional public meeting/s before reporting to the Minister.

Once the allocation process to current participants is completed, there will be an opportunity for non-eligible OFAL holders to enter the fishery by leasing or buying quota from existing licence holders.

The VFA will also request that the IAP consider the implications of applying minimum and maximum quota holdings in the Victorian pipi fishery and to provide advice to the Minister for Agriculture on this matter.

5.2.5 Pipi Fishery Access Licence

In order to implement the new arrangements based on Individual Quota Units, a Pipi Fishery Access Licence (Pipi FAL) will be created and issued under Section 38 of the Act. Quota units will be attached to the Pipi FAL, which will determine eligibility to participate in the fishery. The Pipi FAL will be the only authorisation for harvesting pipi in Victoria

The creation of a Pipi FAL with attached quota units, separate from the Ocean Fishery Access Licence, is needed to create an ongoing entitlement in the fishery, encouraging ongoing development, stewardship and investment. The Ocean Fishery Access Licence will remain as is, with restrictions on transferability and the ability to nominate an operator.

The Victorian Pipi Fishery Access Licence will be subject to all provisions under the Act including:

- the Victorian Fisheries Authority (VFA) must renew the licence for a further period if the licence holder has a record of compliance with the Act; and
- the licence may be cancelled if the VFA considers that the holder of the licence has ceased to be a fit and proper person to hold the licence, has ceased to satisfy any relevant eligibility criteria or has ceased to be actively, substantially and regularly engaged in the activities authorised by the licence.

The Pipi Fishery Access Licence will also have the following characteristics:

- the licence will be transferable;
- there will be an ability to nominate an operator, in addition to the licence holder, to carry out activities authorised by the licence;
- there will be a limit to the number of crew to two persons per fishing operation; and
- the licence will be subject to any conditions that the VFA deems appropriate and that are expressed or referred to in the licence.

Limiting the number of crew, and hence the potential impact of multiple harvesters on the environment, assists in addressing the risk to the fishery identified in Section 3 'conservation organisations impact on social licence for commercial and recreational harvesting.'

5.2.6 Gear

Commercial fishing for pipi will be with the existing gear types initially (e.g. dip net, hand-gathering), noting that in Ramsar listed areas (Lower Glenelg National Park, Discovery Bay Coastal Park), pre-existing activities can continue but new activities require approval (Section 5.5).

The VFA support an innovative approach to gear types and new equipment may be allowed, based on trials and criteria / assessment. Mechanical harvesting would remain undesirable, however, considering that the prime harvesting areas are located in Ramsar listed areas and coastal parks and that 'conservation organisations impact on social licence for commercial and recreational harvesting' is identified as a 'high' risk for the fishery.

5.2.7 Fishing year

The Victorian pipi fishery will operate from 1 July to 30 June each year.

5.2.8 Minimum size limit

A minimum size limit of 35mm shell width (when measured in a straight line at the widest point across the shell) will apply. This size limit is based on size at maturity estimates from South Australia where 95% of the population is sexually mature at 32mm, allowing spawning to occur before harvest. There is scope to change the size limit when information on size at maturity for Victorian populations becomes available (Section 5.6).

5.2.9 Reporting requirements

There is an opportunity to improve catch reporting in the Victorian pipi fishery. In addition to supporting the Quota Management System, the improved reporting arrangements will benefit management of the fishery in a number of ways:

- provide spatially validated fishery-dependent data to support future review and adjustments to the TACC;
- support the productivity, economic viability and sustainability of the fishery;
- result in cost-effective and efficient compliance;
- provide better and more efficient access by licence holders to their data so that business activities and fishing operations can be planned and monitored; and
- streamline catch and effort reporting and data management (including removal of paper-based logbooks, SMS reporting and associated data transcription costs) while minimising disruption to fishing activities.

Real time reporting

Real time information is critical in a quota-managed fishery to ensure compliance with the TACC and with zone restrictions. Real time reporting allows for an up-to-date tally of catch against quota to be maintained and communicated to the VFA and the licence holder. This avoids the risk of overfishing catch limits that exist with the current system of monthly catch returns.

The prior-to-fishing report commits the licence holder to a commercial fishing trip.

Real time reporting will be mandatory for:

- pre-fishing reporting;
- post-landing reporting, and
- catch and effort reporting.

A Smartphone 'reporting application' (the App.) will be utilised to support activity notification as well as catch and effort reporting. The App. will also be designed to support spatial validation of catch and effort information through the automatic capture of location (GPS coordinate).

The App. will be downloadable to any mobile device, such as a compatible mobile phone or tablet. Fishers will be provided with training on the use of this reporting system. Although the VFA will fund the initial development of the App., any modifications required to be undertaken to the system in the future will need to be funded by licence holders.

Details on the various reports will be determined and provided at a later date but will be based on reports required under the current Fisheries (Victorian Pipi) Notice 2017. Improvements in catch reporting will include the 'number of hours fished' to provide more useful catch per unit effort (CPUE) data. Other improvements will provide for better information upon which to base management decisions.

Catch disposal records

Catch Disposal Records (CDRs) provide information on the landed commercial catch for the purpose of tracking of the flow of legal catch from the first point of sale and to verify information recorded electronically. CDRs protect the investment made by industry and ensure the integrity of the quota regime, and as such, are a key requirement of quota managed fisheries in Victoria.

The licence holder, or operator, will be required to complete a CDR to account for, and to accompany from the landing site, all pipi landed under the licence. The CDR will be required to be completed before pipi are sold or consigned. Where catch is split between two or more purchasers at the point of landing, a separate CDR will be required for each purchaser receiving pipi.

The sale of pipi beyond the point of landing will need to be accompanied by a 'sales receipt' to provide evidence that the pipi came from a legal source.

The VFA will provide CDR books to the licence holder. Sale receipts will need to be issued in accordance with the Fisheries Regulations 2009.

5.2.10 Food safety requirements

Commercial fishers who sell pipi for human consumption must be authorised by PrimeSafe under the *Seafood Safety Act 2003*. The authorisation involves determining the risks that consuming shellfish poses to human health and preparing a monitoring strategy and Food Safety Plan that effectively manages these risks. This ensures that a safe and high quality food product is entering the market.

A number of current Victorian commercial pipi fishers are authorised by PrimeSafe to sell pipi for human consumption and others are free to pursue authorisation. It should be noted that the requirements of PrimeSafe accreditation represent an administrative and cost burden for licence holders but pipi sold for human consumption obtain a considerably higher price than those sold for bait. This is an example of value-adding by the industry and is supported by the VFA.

It is an offence under the Act for recreational fishers to sell their catch. It is also an offence under the *Seafood Safety Act 2003* for a person to conduct a seafood business without a seafood safety licence.

Note: Recreational and Indigenous fishers are exposed to the same food safety risk when harvesting pipi for personal consumption. The VFA will continue to implement a sampling regime for the peak harvest area of Venus Bay. Future sampling beyond this period will be considered for peak harvesting times.

5.2.11 The Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Government. The EPBC Act provides for the identification of key threatening processes and the protection of critical habitat and promotes the conservation of biodiversity and provides for the protection of listed species, protected areas and communities in Commonwealth areas.

Under the EPBC Act, all Australian export fisheries must be assessed against the *Guidelines for the Ecologically Sustainable Management of Fisheries* to ensure that fisheries are managed in an ecologically sustainable manner.

As the Victorian pipi fishery does not export product, it has not been assessed under the Guidelines to date.

5.2.12 Occupational health and safety

The *Occupational Health and Safety Act 2004* and Occupational Health and Safety Regulations 2007 places obligations on employers, contractors, employees and self-employed persons to ensure a safe workplace.

The Pipi FAL holder is responsible for complying with relevant legislation.

5.2.13 Fishery costs and cost recovery

The use of public fisheries resources, such as pipis should provide appropriate benefits to Victoria. The Plan establishes a principle that reflects the nature of fisheries resources as common pool resources managed by the government on behalf of the Victorian community as a whole.

In many cases the benefits accrue to private individuals who use this public resource. At the time of ongoing, tradeable commercial pipi quota being allocated to eligible holders, appropriate revenue should be recovered from the industry. The VFA will work with SIV and the industry to implement appropriate measures at this time.

Cost recovery will apply to the Victorian pipi fishery and will be charged to the licence holder on a per quota unit holding basis for research and management, and on a per operator basis for compliance.

The licence holder will be subject to recovery of research, management, compliance and administration costs attributed to the fishery. Costs are recovered in accordance with cost recovery principles, such as:

- those who benefit from government services pay for the associated costs; and
- the design, nature and extent of services should take account of the risks posed to the fishery and the value of production.

The initial, annual recoverable costs for the Victorian pipi fishery are yet to be determined but will include components for research services, compliance, management, administration of catch and effort and quota management.

Levies will also be collected annually from the licence holder to cover contributions to Seafood Industry Victoria and the Fisheries Research and Development Corporation.

5.2.14 Towards a harvest strategy

A harvest strategy is a decision-making document/process setting out specific management actions to be undertaken if, and when, the health status of a fishery changes. It includes rules around fishery indicators (such as catch per unit effort) whereby decisions can be made regarding management actions to be implemented. Changes to fisheries rules and regulations are made, as needed, to ensure the long-term sustainability of the fishery.

A harvest strategy for the Victorian pipi fishery will be developed and implemented within five years as information and data on the fishery become available.

5.3 The recreational fishery

Recreational pipi fishing is managed using input controls (i.e. recreational fishing licence unless exempt, harvest by hand only) and bag/possession limits. There is no minimum size limit for the recreational fishery.

In 2009, the state-wide recreational bag limit was reduced for Venus Bay (i.e. Cape Liptrap Coastal Park between Point Smythe and Arch Rock) from 5 litres of whole pipi/1 litre of pipi meat per person per day to 2 litres of whole pipi/0.5 litre of pipi meat to ensure that the resource was shared amongst users. The reduced limit remains in place to date.

The possession limit is the maximum amount that a person can possess at any one time while in, on or next to Victorian waters. It is the same as the bag limit (i.e. if you are in, on or next to Victorian waters between Point Smythe and Arch Rock, you can only have 2 litres of whole pipi (0.5 litre of pipi meat) in your possession).

Specific information on the recreational fishing regulations is available in the Victorian Recreational Fishing Guide which is available from tackle shops or online (www.vfa.vic.gov.au).

In terms of managing the recreational pipi fishery into the future, bag and possession limits can be modified if there is a need or concern about the sustainability of the recreational harvest.

5.4 The Indigenous fishery

The VFA recognises the importance of Aboriginal Victorians' engagement in decision making about their country and commits to working with Traditional Owner groups to establish joint management arrangements that will ensure Aboriginal Victorians play an important role in the management of pipi throughout Victoria.

The VFA will work collaboratively with Aboriginal organisations, including recognised Traditional Owner groups, and individuals to build and foster relationships and beneficial partnerships that support Aboriginal participation in the fishery and utilisation of the resource. To achieve this, the VFA will meet with relevant groups and interested parties annually to discuss pipi management issues.

The VFA recognises that access to pipi resources is fundamental to the wellbeing of many Aboriginal Victorians. In order to facilitate access rights to pipi for personal, communal and cultural use, the VFA will continue to work with the Department of Justice and Regulation (DOJR) and the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) to facilitate access to pipis through Natural Resource Agreements (NRAs) under Victoria's *Traditional Owners Settlement Act 2010* (TOS Act).

The TOS Act does not provide for NRAs to include the commercial use of fish. However, commercial entitlements may be negotiated as part of a settlement package under the TOS Act, noting that the Aboriginal Fishing Strategy aims to facilitate economic opportunities and employment for Traditional Owners through participation in the fishing industry.

5.5 Managing ecosystem interactions

The areas of pipi that are currently targeted by commercial and recreational fishers are found in coastal parks; Discovery Bay Coastal Park in the west and Cape Liptrap Coastal Park in the east.

These coastal environments have significant natural and cultural values, including nesting sites on the beach for threatened shorebirds like the Hooded Plover, Sanderling and Little Tern, as well as significant Aboriginal archaeological sites such as shell middens. Apart from nesting in the areas where pipi are harvested, some species of shorebird, including migratory species, also utilise pipi as a food source.

Discovery Bay Coastal Park is included in the *Ngootyoong Gunditj Ngootyoong Mara (NGNM) South West Management Plan*, which was completed in 2015. Under the goal of “Authorised uses of public land in the planning area are subject to conditions that minimise the effects on values and visitors”, there is a strategy to “Support measures to improve the sustainability of any pipi fishing in Discovery Bay Coastal Park. Adopt measures to prevent impacts to Hooded Plovers and other threatened shorebirds, Aboriginal middens and safety of visitors on access tracks and beaches, such as access restrictions to areas and during the Hooded Plover breeding season from July-August to March-April” (page 97).

The Glenelg Estuary and Discovery Bay was approved for Ramsar listing in April 2018 as a site that includes wetlands of international importance. The area listed includes part of the Lower Glenelg National Park, the Discovery Bay Coastal Park and the Nelson Streamside Reserve.

The Glenelg-Hopkins Catchment Management Authority, which oversaw the process, has stated that ‘businesses, land owners and day-to-day land users won’t be impacted by a successful Ramsar listing, as every element nominated in the application is already protected.’ This means that the important natural elements of the park, like threatened shorebirds, are already protected, so existing regulations don’t change with the listing.

Ramsar listing occurs under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Under the EPBC Act, pre-existing activities can continue as long as they are lawful under State law. New activities, which may have an impact on the ecological character of a declared site, must be approved under the EPBC Act (D. McLean, Department of Environment, pers. comm.).

Cape Liptrap Coastal Park has its own management plan. Under the aim of “Provide opportunities for recreational fishing while minimising the impacts on parks value”, there are three management strategies which relate to supporting and liaising with the VFA in order to ensure the sustainability of fish populations and fishing activities (page 23).

A key issue for commercial and recreational fishing in Discovery Bay Coastal Park and Cape Liptrap Coastal Park is effective access to the fishing grounds. In Discovery Bay, motorised vehicles have been utilised by some commercial fishers to transport the pipi catch along the beach and from the beach to the car park since 2012. Other commercial fishers have continued to use hand trolleys or to transport the catch in backpacks. In Venus Bay, fishers utilise hand trolleys.

Vehicle access on public land falls within the portfolio of the Minister for Environment, Climate Change and Water and is managed by Parks Victoria and the Department of Environment, Land, Water and Planning. Discovery Bay Coastal Park includes the beach to the low water mark (an ambulatory boundary). Fishers are, therefore, operating in boundaries of the park while transporting their catch through the park and on the beach and are subject to relevant legislation and regulation.

The use of motor vehicles off-road in Discovery Bay Coastal Park is prohibited under the Land Conservation (Vehicle Control) Regulations 2013 unless permitted. The use of two-wheel drive and four-wheel drive vehicles, bicycles and motor cycles is prohibited on tracks that are closed to the public under the National Parks Regulations 2013³ unless permitted. There is also a long-standing policy of no private vehicle access to coastal Crown land and beaches in Victoria, which was re-stated in the Victorian Coastal Strategy 2014.

There are a number of concerns associated with use of vehicles in coastal parks including the potential impact on threatened species and damage to dunes and native flora.

Vehicles also have the potential to damage Aboriginal cultural sites, although this is now mitigated in Discovery Bay as fishers can only access the beach via designated access points. The Gunditjmara native title holders have requested that a Cultural Heritage Management Plan (CHMP) be completed as a priority for the Discovery Bay Coastal Park, including the area of the designated access tracks. The VFA will work with the land managers to progress this request.

³ This does not exclude vehicles required for park management or those acting under, or in accordance with, a permit issued under the *National Parks Act 1975*.

The restrictions to commercial fishing that are currently in place under the Fisheries (Victorian Pipi) Notice 2017, and that will be continued under the quota-managed Victorian pipi fishery, limit the number of fishers that can operate in the fishery, as well as the amount and size of pipi that can be taken. Fishers will also be required to prior- and post-report fishing activity.

These management arrangements limit the impact of commercial fishing in these sensitive areas but access to the fishery remains a concern and a risk for the fishery (Section 3).

The VFA, in conjunction with Seafood Industry Victoria and land managers will work to improve beach access points, beach access method and beach use by commercial fishers while minimising the impact on the cultural and conservation value of coastal sites.

5.6 Scientific research to support fishery management

To date, research on the pipi resource in Victoria has focussed on Venus Bay and recreational harvesting. There have been three field studies of the pipi stocks in Venus Bay. Lewis (et al 2013, Lewis & Scarpaci 2010) surveyed Venus Bay from November 2009 to February 2010, Early et al (2012) from August to October 2011, and Parry (2013) in December 2013.

All three field studies found that, in areas close to beach access points, there was a lower biomass and fewer mature pipi ('maturity' was arbitrarily assigned to pipi larger than 37mm) than in areas remote (>3 km) from beach access points. Overall, however, the Venus Bay pipi fishery is sustainable as the majority of the fishing occurs over a short period (i.e. summer) and the eastern half of Venus Bay acts a source of replenishment for the harvested areas. There is little recreational fishing, and minimal commercial fishing, for pipi in this less accessible area.

The University of Melbourne commenced a three-year study in late 2015 to assess the sustainability of recreational and commercial pipi harvest in Venus Bay. This study includes various components such as the collection, tagging and release of 2,000 pipi to estimate pipi movement and fishing mortality parameters. Results to date support earlier findings that adult pipi (individuals greater than 30mm in this study) are more common at sites further away from beach access points and that the primary factor influencing this pattern of abundance is increased harvest, rather than spatially variable recruitment patterns. Further results will become available later in 2018 (J. Morrongiello, University of Melbourne, pers. comm.).

A proposal to study the demography and stock structure of pipi in Victoria was submitted to the Fisheries Research and Development Corporation in early 2018.

6 Review of the Management Plan

This Victorian Pipi Fishery Management Plan will be reviewed after two, and then five, years to determine progress against the objectives, strategies and actions outlined in Section 4. A report will be provided to the Chief Executive Officer of the Victorian Fisheries Authority describing progress.

This Victorian Pipi Fishery Management Plan remains in place until a new plan is declared.

7 References

Early, J., Lewis, Z., Scarr, M and Scarpaci, C. (2012) Stock Assessment of Venus Bay Pipsis (2011) Final Recreational Fishing Grants Program Research Report.

Ferguson, G.J. (2013) Pipi (*Donax deltoides*) Fishery. Fishery Stock Assessment Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2007/000550-1. SARDI Research Report Series No. 731.

Lewis, Z., and Scarpaci, C., 2010. Recreational harvest: implications on management and sustainability of the pipi (*Donax deltoides*) at Venus Bay, Victoria. Fisheries Victoria Final Report. Department of Primary Industries, Melbourne.

Lewis, Z., Khageswor, G., Versace, V.L. and Scapaci, C. (2013) Applying stock indicators for assessment of a recreational surf clam (*Donax deltoides*) fishery in Victoria, Australia. Journal of the Marine Biological Association of the United Kingdom 93(5): 1381-1387.

McLachlan, A., Dugan, J.E., Defeo, O., Ansell, A.D., Hubbard, D.M., Jaramillo, E. and Penchaszadeh, P.E. (1996) Beach clam fisheries. Oceanography Marine Biology Annual Review 34: 163-232.

Miller, A.D., Versace, V.L., Matthews, T.G., Montgomery, S. and Bowie, K.C. (2013) Ocean currents influence the genetic structure of an intertidal mollusc in southeastern Australia – implications for predicting the movement of passive dispersers across a marine biogeographic barrier. Ecology and Evolution Open Access.

Murray Jones, S. (1999) Towards conservation and management in a variable environment: The surf clam *Donax deltoides*. University of Wollongong, Wollongong, Australia.

Parry, G.D. (2013) Monitoring of the pipi (*Donax deltoides*) abundance and size frequency at Cape Liptrap Coastal Park, Venus Bay, Victoria, December 2013. Marine Ecological Solutions, Queenscliff. MES Report No 10.

Schnierer, S. and Egan, H. (2016) Composition of the Aboriginal harvest of fisheries resources in coastal New South Wales, Australia. Reviews in Fish Biology and Fisheries 26(4): 693–709.

8 Appendices

Appendix 1

Table 1. Summary of risks (score 6 to 10) identified for the Victorian pipi fishery.

Component	Risk (issue)
Retained species	Commercial harvest is unsustainable (Discovery Bay and Venus Bay)
	Commercial harvest leads to localised depletion (Discovery Bay)
	Recreational harvest is unsustainable (Discovery Bay and Venus Bay)
	Recreational harvest leads to localised depletion (Venus Bay)
	Illegal take-for-sale reduces the population below target levels
Non-retained species	Commercial harvesting results in unacceptable interactions with threatened, endangered, protected (TEP) species
Impacts on ecosystem	Litter/debris from recreational fishery has an unacceptable aesthetic/environmental impact
Community wellbeing	Access and management arrangements do not support viable commercial harvest resulting in reduced fisher income and employment in the sector
	Access and management arrangements do not support viable commercial harvest reducing local employment and investment therefore affecting associated service industries and reducing economic returns to the community
	Access and management arrangements do not support viable recreational harvest resulting in reduced recreational fishing opportunities and associated wellbeing and lifestyle benefits
Indigenous well-being	Access and management arrangements do not address/meet the employment/income expectation/aspiration of the Traditional Owner groups

Component	Risk (issue)
Governance	Management arrangements do not support efficient, effective and responsive management resulting in suboptimal fishery outcomes
	Available research is not sufficient to support efficient, effective and responsive management
External factors affecting fishery	Requirements of PrimeSafe accreditation are too expensive/difficult thereby limiting sale/market of pipi for human consumption, reducing commercial viability
	Water quality reduces/prevents access to pipi for human consumption reducing the commercial returns from the fishery
	Water quality and flow from rivers affects the viability of pipi populations reducing the scope of commercial and recreational fisheries
	RAMSAR listing restricts the fishery for commercial or recreational purposes
	Changing climate (water temperature, changing shoreline, increased/decreased wave action) affects the long-term sustainability of pipi populations

