



# Victorian Giant Crab Fishery Management Plan

Second Edition

Fisheries Victoria Management Report Series No.79  
November 2010



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# Minister's foreword

I am pleased to declare this second edition of the *Victorian Giant Crab Fishery Management Plan*. While the management arrangements for the fishery have not changed since the last management plan for this fishery was declared in 2003, this edition updates the policies, initiatives and directions for managing the giant crab fishery within a framework of ecologically sustainable development.

The giant crab fishery is a small, limited-entry fishery based in western Victoria that is closely linked to the rock lobster fishery. Since 2001, it has been a quota managed fishery; in 2008-2009, approximately 20 tonnes of giant crabs with a beach value of about \$800,000 were landed. Giant crab is a highly sought after delicacy with the majority of the catch exported to markets in Asia.

This management plan is a key component of the Government's vision for Victoria as a State where protecting the environment and utilising our resources sustainably is built into everything that we do and will help to ensure that the giant crab fishery continues to be managed on an ecologically sustainable basis. It sets out the strategies and actions for managing the giant crab fishery for at least the next five years and has an emphasis on rebuilding stocks.

This management plan should not, however, be regarded as inflexible; it specifies an open process for annually reviewing the Total Allowable Commercial Catch and management arrangements can evolve in response to new information, technologies and changing community attitudes. To ensure that the views of the community are taken into account, the Government will continue to invite the major stakeholders in the fishery to participate in implementing and refining this plan.

I am confident that the Victorian Giant Crab Fishery Management Plan will continue to ensure that the fishery is managed on a sustainable basis while allowing for ongoing development of the industry it supports.



**Joe Helper MP**  
Minister for Agriculture

# Executive summary

The *Victorian Giant Crab Fishery Management Plan* specifies the policies and strategies for managing the giant crab fishery in Victoria for at least the next five years. Giant crabs are fished commercially in western Victoria and provide supplementary income for many rock lobster fishers and seafood exporters. The plan sets out arrangements to manage the commercial catch at levels that prevents overfishing, allows stocks to rebuild and reduces the risk of lower stock abundance.

This second edition of the Victorian Giant Crab Fishery Management Plan was prepared in accordance with the requirements of the *Fisheries Act 1995*. Policies and strategies have been updated since the previous management plan for the fishery was declared in 2003 but the management arrangements established in that original plan for the fishery remain in place.

Key goals of this management plan are to:

- Maintain knowledge about the giant crab biomass
- Maintain appropriate input controls on the fishery
- Minimise mortality of undersize or otherwise non-retained giant crabs
- Minimise interactions with wildlife and the ecological effects of giant crab fishing
- Assess the ecological risks of fishing and major threats to giant crab habitats

- Maintain fisher access to the giant crab resource
- Introduce and monitor economic performance indicators for the giant crab fishery
- Facilitate market access for giant crab products
- Provide opportunities for stakeholder participation in giant crab fishery management
- Recover the costs, where appropriate, of managing the giant crab fishery
- Cost-effectively identify commercially caught giant crabs
- Prioritise, invest in and deliver research and development projects
- Review and implement the giant crab compliance strategy
- Annually report on management plan performance measures
- Develop a giant crab education and communication strategy

A schedule for implementation and an estimate of the resources required to implement this management plan are provided.

# Introduction

The purpose of this management plan is to specify the policies and strategies for managing the Victorian giant crab fishery within a framework of ecologically sustainable development for at least the next five years.

The first edition of this management plan was developed by Fisheries Victoria with the assistance of a stakeholder-based steering committee (Department of Primary Industries 2003). This second edition of that management plan was developed after consultation with and agreement from giant crab fishers that changes to the management arrangements established in the first edition were not necessary. Management arrangements that were implemented during the lifetime of the first Giant Crab Fishery Management Plan are not included in this edition.

The main aims of this fishery management plan are to manage the commercial catch at levels that prevent overfishing thus reducing the risk of lower abundance and allowing stocks to re-build.

## Management plan implementation and review

The three main objectives of this management plan are:

- Sustainability of the giant crab resource
- Resource access and utilisation
- Cost-effective and participatory management.

Each objective has one or more strategies that are supported by targets, actions and performance indicators. The objectives, strategies and actions of this management plan are summarized in Table 1. A detailed tabulation of the objectives, strategies, actions, performance indicators, targets and corresponding schedules, responsible agencies and estimated costs is included in the section entitled *Summary of the Victorian Giant Crab Fishery Management Plan* on page 23.

*Table 1: Summary of the objectives, strategies and actions in this fishery management plan. A more detailed summary is found on page 23 of this fishery management plan.*

Objectives	Strategy	Actions
1. Sustainability of the giant crab resource	<ol style="list-style-type: none"> <li>1. Rebuild the stock biomass</li> <li>2. Maintain the ecological integrity of the fishery ecosystem</li> </ol>	<ul style="list-style-type: none"> <li>• Maintain knowledge about the giant crab biomass</li> <li>• Maintain appropriate input controls</li> <li>• Minimise giant crab mortality</li> <li>• Minimise interactions with wildlife and the ecological effects of giant crab fishing</li> <li>• Assess the ecological risks of fishing and major threats to giant crab habitat</li> </ul>
2. Resource access and utilisation	<ol style="list-style-type: none"> <li>3. Facilitate an economically efficient commercial fishery</li> </ol>	<ul style="list-style-type: none"> <li>• Maintain access to the giant crab resource</li> <li>• Introduce and monitor economic performance indicators for the giant crab fishery</li> <li>• Facilitate market access for giant crab products</li> </ul>
3. Cost-effective and participatory management	<ol style="list-style-type: none"> <li>4. Promote stakeholder participation in decision-making</li> <li>5. Deliver and monitor cost-effective management arrangements</li> <li>6. Achieve compliance with legislation</li> </ol>	<ul style="list-style-type: none"> <li>• Provide opportunities for stakeholders to participate in the management of the giant crab fishery</li> <li>• Recover the costs of providing fishery management services</li> <li>• Develop cost-effective methods for identifying commercially caught giant crabs</li> <li>• Identify, prioritise and deliver research and development activities for the giant crab fishery</li> <li>• Review and implement the giant crab compliance strategy</li> <li>• Report against giant crab performance measures annually</li> <li>• Develop an education and communication strategy for the giant crab fishery</li> </ul>

Performance indicators allow progress to be tracked on an ongoing basis and may be refined as additional information obtained from monitoring programs and surveys becomes available. Targets provide longer-term measures for the objectives of the plan and should be achieved through its successful implementation.

Existing management arrangements established under the previous giant crab fishery management plan remain unchanged. If a need to alter management arrangements to ensure sustainable use of the fisheries resource or to meet changing demands for recreational fishing opportunities is identified, amendments to this management plan will be considered in consultation with stakeholders and in accordance with the requirements of the *Fisheries Act 1995*.

An annual progress report on the implementation of this management plan will be prepared by Fisheries Victoria. Progress will be reported against the key performance indicators described in the plan. The annual reports will be provided at an annual management workshop and be made publicly available through the Department of Primary Industries website.

### **Duration and review**

This management plan came into effect following the Minister's declaration by notice published in the *Victoria Government Gazette* and provides the basis for managing the giant crab fishery for at least five years.

This management plan will be reviewed by Fisheries Victoria approximately five years following its declaration and approximately every five years thereafter. Should there be a need for the Minister to amend this management plan prior to its review, amendments will be made in accordance with the requirements of the Fisheries Act.

### **Costs of implementation**

Fisheries Victoria will fund from its program budget the management plan actions required to meet the objectives of the Fisheries Act. Subject to industry cost recovery and the budget, actions not required to meet these objectives will require that funding be obtained from other sources. Funding sources and estimated budgets for these actions are found in the Summary of the Victorian Giant Crab Fishery Management Plan.

## **Biology of the giant crab**

The giant crab (*Pseudocarcinus gigas*) is a member of the family *Xanthidae*, a group that contains few commercially exploited species. The species is only found in southern Australian waters between central New South Wales and southern Western Australia including Tasmania (Kailola *et al.* 1993).

Giant crabs are slow moving carnivores that feed primarily on sedentary benthic species such as starfish and on carrion. Growth of giant crabs is relatively slow; females and males taking approximately seven years and four to five years, respectively, to reach the legal minimum length of 150 millimetres carapace length. The inter-moult period is one of the longest of the crab species and can be up to fifteen years for mature females (Gardner *et al.* 2002).

Female giant crabs are highly fecund and their ability to store sperm gives them the ability to fertilise their eggs over several successive breeding seasons. Eggs are released during autumn and incubated by the female until the following spring when they are released in the shallower depths of the shoulder of the continental slope (Kailola *et al.* 1993).

In Victoria, female crabs reach maturity at a carapace length of about 125 millimetres. The legal minimum length for females is considered conservative and preserves an estimated 53 per cent of unexploited egg production.

### **Giant crab habitat**

Giant crabs inhabit the continental slope, the band of seabed that slopes steeply down from the edge of the continental shelf (the shelf break or shoulder) at approximately 200 metres depth to the deep ocean floor. Giant crabs are most abundant along a narrow zone of the seabed that is dominated by fragile bryozoan communities on the soft muddy banks along the shelf break. Knowledge of these areas is limited; only a small area is mapped and there is little information available on the ecological relationships between giant crabs and other species.

The small number of participants in the fishery, a corresponding low level of fishing effort and limited contact by pots with the deep-sea bottom suggest that the impact of this fishery on the ecosystem is low.

# Policy and regulatory framework

## Fisheries Victoria's strategic direction

Fisheries management in Victoria focuses on securing a long-term, high-quality natural resource base and generating jobs and other socio-economic benefits for the State and its communities.

Fisheries Victoria's vision of success is to develop and manage the State's fisheries resources within an ecologically sustainable development framework which ensures fish now and for the future (Figure 1). This vision underpins Fisheries Victoria's projects, policies and services and is achieved with the cooperation and support of the community, industry and other government agencies and within the established legislative and policy framework.

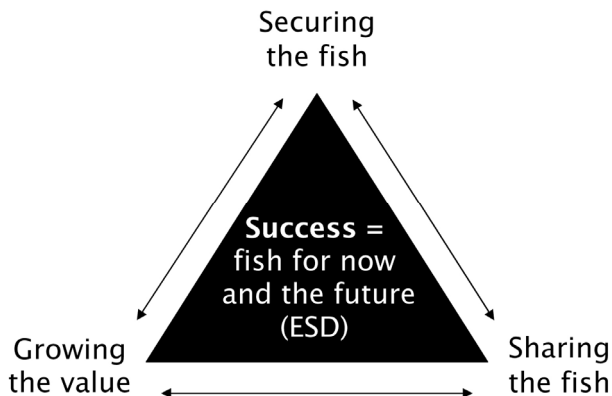


Figure 1. The Fisheries Victoria vision of success.

## The Fisheries Act 1995 and Fisheries Regulations 2009

The *Fisheries Act 1995* provides the legislative framework for the regulation and management of Victorian fisheries and for the conservation of fisheries resources including their supporting aquatic habitats. In summary, the objectives of the Fisheries Act to:

- Provide for the management, development and sustainable use of Victoria's fisheries
- Protect and conserve fisheries resources, habitats and ecosystems
- Promote sustainable commercial fishing and viable aquaculture industries and quality recreational fishing opportunities

- Facilitate access to fisheries resources for commercial, recreational, traditional and non-consumptive uses
- Encourage the participation of resource users and the community in fisheries management.

It is important to note that the provisions of fisheries legislation can only be applied to the control of fishing activities. Other human activities that may directly or indirectly affect fish habitats, fishery resources or the quality of fishing may be managed by other government agencies and under a variety of legislation.

The detailed management arrangements for the commercial giant crab fishery and other commercial fisheries are found in the *Fisheries Regulations 2009* which include licensing and quota management requirements, gear restrictions, catch limits, size limits, closed seasons and closed areas.

## Policy and regulatory context

### Ecologically sustainable development

All Australian governments including Victoria are committed to managing fisheries in accordance with the principles of ecologically sustainable development. These principles include:

- Ensuring that fishing is carried out in a biologically and ecologically sustainable manner
- Ensuring the equitable sharing of fisheries resources within and between generations
- Maximising, within the constraints of sustainable utilisation, the economic and social benefits from fisheries to the community
- Adopting a precautionary approach to fisheries management, particularly where limited data is available
- Ensuring that the processes and procedures involved in management of a fishery are appropriate, transparent and inclusive.

These principles, Commonwealth guidelines for the ecologically sustainable management of fisheries (Department of the Environment 2007) and the *Environmental Protection and Biodiversity Conservation Act 1999* have been taken into account in the preparation of this management plan which has been accredited under part 13 of that Act.

## **Ecosystem-based fisheries management**

Ecosystem-based fisheries management promotes the use of fisheries resources in a manner that does not jeopardise the benefits and opportunities for future generations. It recognises that the users and beneficiaries of fisheries resources are obliged to behave in a way that promotes the sustainability of the resource.

An ecosystem-based approach recognises the uncertainty that characterises our knowledge of fisheries and supporting ecosystems and allows for this uncertainty by applying the precautionary approach where knowledge is incomplete. The precautionary approach is based on the principles outlined in the Commonwealth *Intergovernmental Agreement on the Environment*:

*Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (Department of the Environment 1992).*

Fisheries Victoria undertakes a risk-based approach to implement ecosystem-based fisheries management so that the highest risks to fisheries and or supporting ecosystems are addressed as a priority, planned for and risks monitored.

## **The Environment Protection and Biodiversity Conservation Act 1999**

The Environment Protection and Biodiversity Conservation Act is administered by the Commonwealth Department of the Environment, Water, Heritage and the Arts. The Act provides for the identification of key threatening processes and protection of critical habitat, listed species, protected areas and communities and promotes the conservation of biodiversity in Commonwealth areas

Under the Environment Protection and Biodiversity Conservation Act, all 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 (Department of the Environment 1992). The Victorian giant crab fishery has export approval under the Environment Protection and Biodiversity Conservation Act until March 2015 and will be reassessed after that date.

## **Off-shore Constitutional Settlement arrangements**

Under international law, Australia has exclusive control of all economic resources, including fishing, mining and oil exploration, to a distance of 200 nautical miles from its territorial sea baseline. The division between Commonwealth and state's resources management arrangements within this exclusive economic zone is an important constitutional issue.

Under the Offshore Constitutional Settlement with the Commonwealth Government, states generally have responsibility over areas up to three nautical miles from the territorial sea baseline (i.e. coastal waters). Offshore Constitutional Settlement agreements provide an integrated legislative framework for managing commercial fisheries resources that move between the two jurisdictions by conferring management responsibility on Commonwealth or state fisheries management authorities (Attorney-General's Department 2007).

The Victorian Government has jurisdiction over the commercial giant crab fishery in the Commonwealth waters adjacent to its coastal waters.

## **Marine national parks and sanctuaries**

Like land-based national parks, marine national parks and marine sanctuaries are protected areas. They safeguard a range of marine plants, animals and habitats in their natural state for the benefit of the environment and current and future generations of Victorians.

Victoria was the first jurisdiction in the world to establish an entire system of highly protected marine areas where activities such as fishing, mining of seabed materials and dumping of waste are prohibited (i.e. the *National Parks (Marine National Parks and Marine Sanctuaries) Act 2002*). This system of parks and sanctuaries protects over five per cent of the Victoria's coastal waters. It is estimated that eight and sixteen per cent of the giant crab biomass within the eastern and western giant crab fishery management zones, respectively, were incorporated into the marine national parks and sanctuaries at their establishment (Hobday *et al.* 2005).

Parks Victoria is responsible for the management of these parks and sanctuaries. Under a service agreement with Parks Victoria, Fisheries Victoria is responsible for fisheries compliance in these areas.

The South-east Commonwealth Marine Reserve Network covers waters between three and 200 nautical miles offshore and extends from the far south coast of New South Wales west to Kangaroo Island off South Australia and includes waters off of Tasmania. The thirteen reserves in the network were declared under the Environment Protection and Biodiversity Conservation Act.

The Director of National Parks is the Statutory Authority directly responsible for managing all Commonwealth reserves (including marine protected areas). Arrangements are in place whereby state agencies assist in managing the reserve network (Department of the Environment 2009).

A management plan for the South-east Marine Reserves will be developed in accordance with the Environment Protection and Biodiversity Conservation Act. This plan will provide for the protection and conservation of each reserve by setting out how it will be managed, what activities will be allowed or prohibited and how this will be done. It will also set out goals for the reserves and detail strategies to ensure that the natural, social and cultural values of the area are protected. Interim management arrangements will remain in place until a management plan comes into effect.

Information relating to fishing activities in the reserve network is available in the *Commercial Fisheries User Guide for the Commonwealth Marine Reserves of South-east Australia* (Director of National Parks n.d.).

### **The Victorian Climate Change Strategy for Fisheries and Aquaculture 2008-2018**

The *Victorian Climate Change Strategy for Fisheries and Aquaculture 2008-2018* will help to ensure the long term sustainability of Victoria's fisheries resources by guiding activities to support the fishing and aquaculture industries and fisheries managers to prepare for and adapt to the impacts of a changing climate (Department of Primary Industries 2008).

This strategy covers all fishing and aquaculture in inland and marine waters and explains the roles of the Victorian Government and industry in preparing for climate change. Information obtained under the climate change strategy will:

- Assist Victoria's fishing and aquaculture sectors to implement actions to manage their own exposure to climate change risks and to successfully meet the challenges and opportunities ahead
- Be used by the Victorian Government to assist the industry to prepare for the challenges
- Inform reviews of the legislation, plans and policies necessary to sustainably manager our community's fisheries resources within a changing climate.

The Victorian Climate Change Strategy is available at <[www.dpi.vic.gov.au/fishing](http://www.dpi.vic.gov.au/fishing)>.

# Managing the giant crab fishery

The Victorian community owns the giant crab resource and has provided long-term and secure rights to holders of Giant Crab Fishery (Western Zone) Access Licences to access it for commercial fishing. Ownership of giant crabs is transferred to the licence holder when the crabs are taken from Victorian waters and in accordance with the conditions of the fishers access licence.

Under this management plan, giant crab fishing entitlements remain based on the legal ownership of Giant Crab Fishery Access Licences and quota holdings as defined in the *Fisheries Act 1995* and the *Fisheries Regulations 2009*.

There are two giant crab fishery management zones in Victoria. These zones are discussed in greater detail in the section entitled *Fishery management arrangements*.

## Status of giant crab stocks

The stock of giant crabs distributed along the Victorian coast is part of a larger, genetically homogenous population that is endemic to southern Australia and maintained through

widespread larval dispersion. There has been little giant crab fishing in the Eastern Zone so the stocks in that zone are considered to be close to their natural state.

Western Zone giant crab catches have declined and there are indications of a spatial contraction in the fishery. This decline in commercial catch coincided with the introduction of the legal minimum length for giant crabs in 1994-95 and adjustments to the quota management system. The available biomass and egg production has probably been significantly reduced by fishing and the giant crab stocks are considered to be fully exploited.

The largest catches to-date in the Western Zone giant crab fishery were during the 1992-93 and 1993-94 quota seasons (April to March<sup>1</sup>) when approximately 149 and 171 tonnes, respectively, were landed,; between the 2004-2005 and 2008-2009 quota seasons, total catch averaged 21.6 tonne (Figure 2). In the nine years since the 2001/2002 quota season, the current Total Allowable Commercial Catch of 25 tonne has not been harvested; most uncaught quota is the result of small quota allocations attached to inactive access licences.

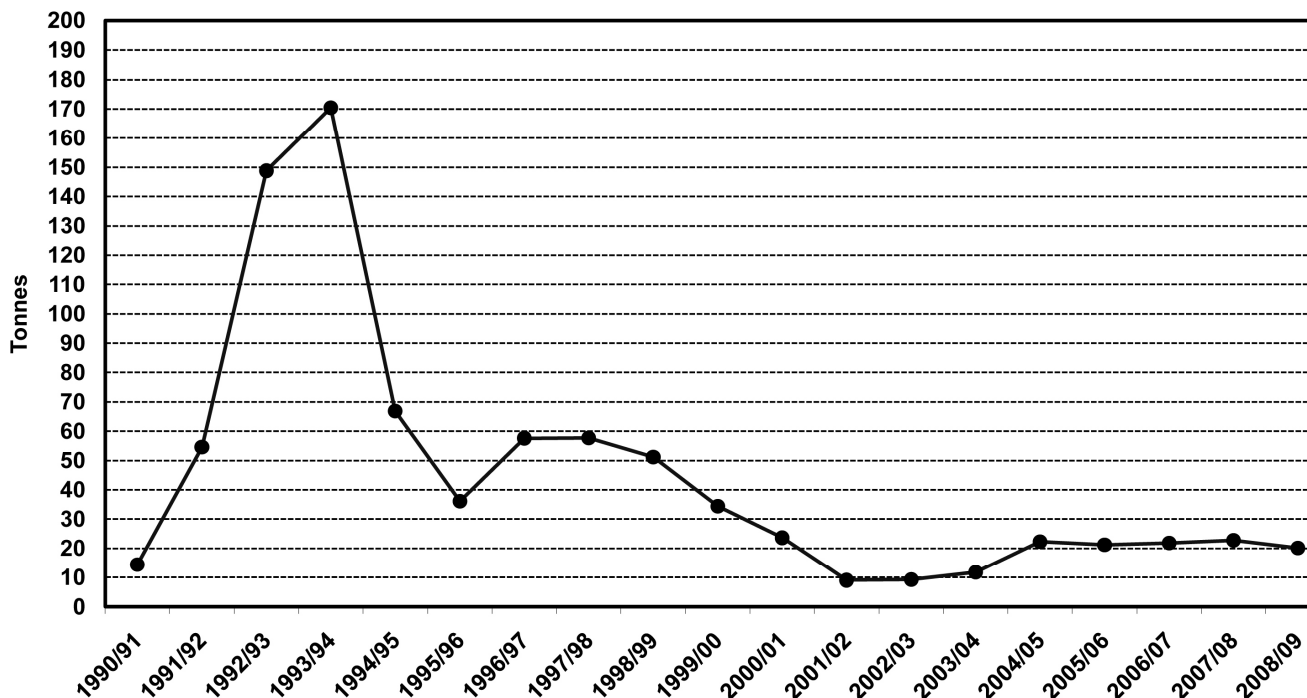


Figure 2. Giant crab catch in the Western Zone fishery during the quota seasons 1990/91 to 2008/09.

<sup>1</sup> From 2011, the quota year will be from July to the following June. To accommodate this change, the 2010-2011 quota year commenced in April 2010 and will finish at the end of June 2011.

Coinciding with the highest catches of giant crabs were the highest levels of catch per unit effort: 1.63 and 1.66 kilograms per 24-hour potlift during the 1992-1993 and 1993-1994 quota years, respectively, for fishers taking more than one tonne of catch. Since 2003-2004, catch per unit effort has fallen from 0.53 kilograms to 0.41 kilograms per 24-hour potlift (Department of Primary Industries 2009).

The status of the giant crab stock remains uncertain because of the relatively short life of the fishery and the lack of the comprehensive biological data necessary to undertake quantitative stock assessments. Stocks are, however, thought to be slowly rebuilding under quota management and a conservative legal minimum length. The progressive increase in the mean weight of giant crabs landed during the period 2004-2005 to 2008-2009 and the large number of crabs under the legal minimum length in the deeper shelf break waters are encouraging signs.

## Description of the fishery

### Commercial fishery

The giant crab fishery is a small, limited entry fishery closely linked to the rock lobster fishery. In 2008–09, giant crab landings were approximately 20.1 tonnes and valued at around \$800,000. Processors and wholesalers who specialise in exporting giant crab have developed technologies to store and transport live crabs to key international markets.

Under an Offshore Constitutional Settlement Arrangement with the federal government, the Victorian government has jurisdiction over the giant crab fishery in Commonwealth waters adjacent to Victoria. The commercial fishery has two management zones, the Western Zone and Eastern Zone, a division which reflects the zonal boundaries of the rock lobster fishery (Figure 3). The fishery is based in the Western Zone; at the time of writing there was no giant crab fishing in the Eastern Zone.

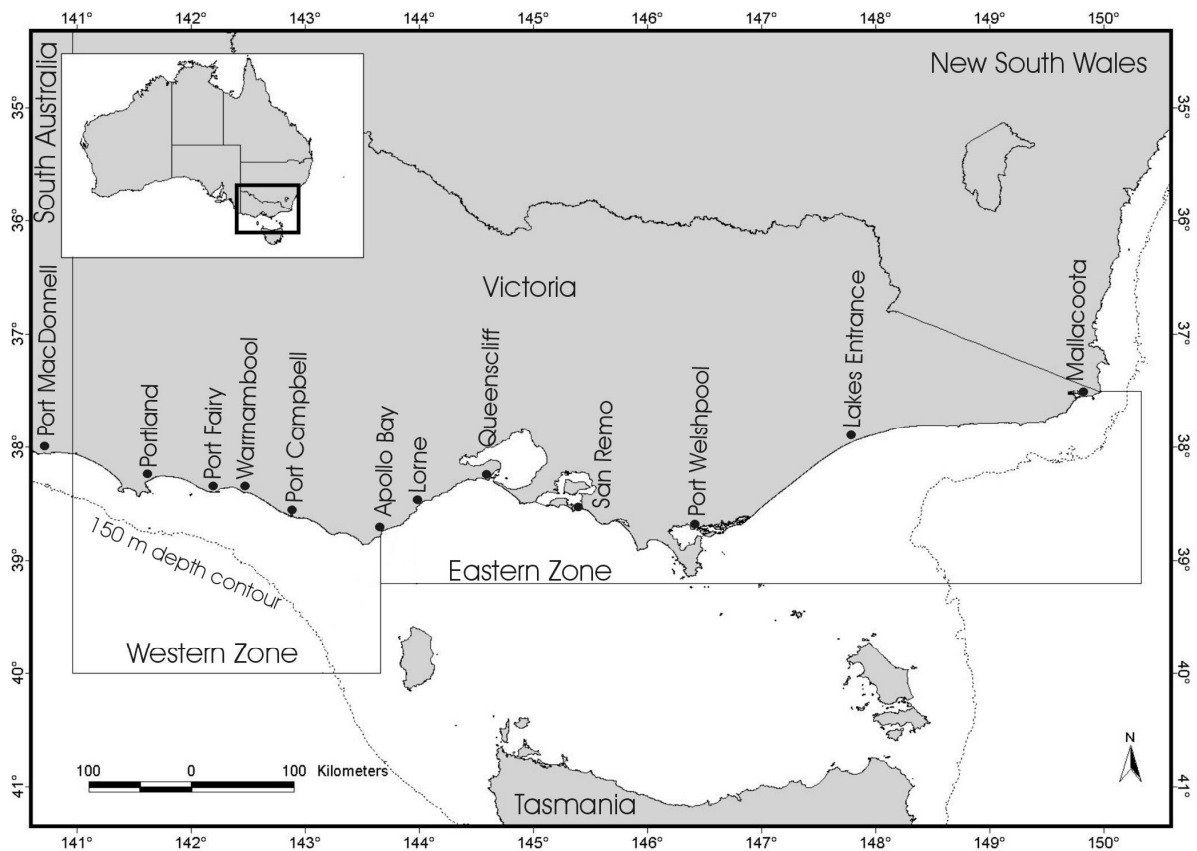


Figure 3. Giant crab management zones and the locations of the main ports for landing.

Although the majority of fishers take crab as a by-product of rock lobster fishing, most of the catch in 2008-09 was attributed to fewer than ten operators. Fishers target giant crabs using modified rock lobster pots set at depths of 150 to 300 metres. Holding tanks, seawater sprays and or live wells are used to keep giant crabs alive prior to landing and export.

In the Eastern Zone, the giant crab fishery is managed as a developing fishery using general permits and is not under quota management. Although holders of Rock Lobster Fishery (Eastern Zone) Access Licences are eligible for a permit, only a few have been issued.

### Recreational and customary fishing and aquaculture

Giant crabs can only be taken by hand or with recreational hoop nets. Due to the offshore distribution and great depths at which giant crabs occur, recreational and customary fisheries for the species do not exist.

Due to the complex life cycle and slow growth rate of the species, a commercial giant crab aquaculture industry for the species has not developed in Australia.

## Fishery management arrangements

Key elements of the Western Zone giant crab fishery are summarised in Table 2.

### Licensing and quota management arrangements

In 2001, the Western Zone giant crab fishery changed from an input to an output managed fishery with a limited number of commercial access licences (i.e. the Giant Crab Fishery (Western Zone) Access Licence), a quota management system and individual transferable quota units. At the time of writing, there were thirty Giant Crab Fishery (Western Zone) Access Licence holders and 500 quota units for the fishery.

In 2008–09 the Total Allowable Commercial Catch was 25 tonnes and each quota unit was equivalent to 50 kilograms of giant crab. Key elements of the Western Zone giant crab fishery are summarised in Table 2.

Other fishery management controls include minimum size limits, restrictions on taking berried females, closed seasons, area closures and limits on pot numbers and fishing gear.

Table 2. Key elements of the giant crab (Western Zone) fishery.

Access to fishery	<ul style="list-style-type: none"> <li>• Entry limited to holders of a Giant Crab Fishery (Western Zone) Access Licence</li> </ul>
Authorised fishing method/ equipment	<ul style="list-style-type: none"> <li>• Baited rock lobster pots</li> </ul>
Management zone and boundaries (Figure 3) and relevant coordinate system	<ul style="list-style-type: none"> <li>• Rock lobster fishery (Western Zone)               <ul style="list-style-type: none"> <li>- Longitude: 143°40'E</li> <li>- Longitude: 140°57.9'E</li> <li>- Latitude: 40°S</li> </ul> </li> <li>• Coordinate system (datum): GDA94</li> </ul>
Management tools	<ul style="list-style-type: none"> <li>• Quota management system</li> <li>• Total Allowable Commercial Catch</li> <li>• Individual transferable quota</li> <li>• Legal minimum length</li> <li>• Gear restrictions</li> <li>• Closed season</li> </ul>
Maximum number of licences	<ul style="list-style-type: none"> <li>• 30</li> </ul>
Maximum number of licences per boat	<ul style="list-style-type: none"> <li>• No limit</li> </ul>
Number of quota units in the fishery	<ul style="list-style-type: none"> <li>• 500</li> </ul>
Minimum/ maximum number of quota units per licence	<ul style="list-style-type: none"> <li>• No limit</li> </ul>
Total Allowable Commercial Catch (2008/ 2009)	<ul style="list-style-type: none"> <li>• 25 tonne</li> </ul>
Landed catch (2008/ 2009)	<ul style="list-style-type: none"> <li>• 20.1 tonne</li> </ul>
Value of catch (2008/ 2009)	<ul style="list-style-type: none"> <li>• Approximately \$800,000</li> </ul>
Catch per unit effort (2008/ 2009)	<ul style="list-style-type: none"> <li>• 0.41 kilograms per 24-hour potlift</li> </ul>

A Giant Crab Fishery (Western Zone) Access Licence can only be operated when it is linked to a Rock Lobster Fishery (Western Zone) Access Licence. As a giant crab access licence does not, under normal circumstances, have a pot entitlement, licence holders use the pot entitlement of the linked rock lobster access licence to take giant crabs within their quota allocation.

A maximum of two operators can be named on a Giant Crab Fishery (Western Zone) Access Licence provided they are also nominated on the linked Rock Lobster Fishery Access Licence. The same boat may be specified on multiple giant crab access licences so that multiple licences may be operated from one boat. A licence holder may apply to vary the licence conditions relating to the operator(s) and boat(s).

Giant crab fishery access licences and quota holdings are linked but may be traded independently within the fishery. Quota units in the giant crab fishery can only be owned by giant crab access licence holders and there is no maximum or minimum number of quota units that can be attached to a licence. Quota units may be transferred permanently or for a quota period.

Licences are issued for one year and must be renewed prior to expiry in order for the licence holder to commence fishing at the start of a new quota period. Licence holders will not receive a quota notice for a new quota period until their licence is renewed. Licences which are not renewed, are cancelled by a Court or are removed from the fishery through other mechanisms, such as amalgamation, will not be replaced.

Rock Lobster Fishery Access Licence holders who do not have a Giant Crab Fishery (Western Zone) Access Licence or the appropriate general permit may not land giant crabs. The incidental take of giant crabs in other commercial Victorian fisheries is not permitted under the giant crab quota management system.

Ports and moorings at which giant crab catches can be landed are specified in the Fisheries Regulations. Before entering any of these ports or mooring areas, giant crab fishers must record in their daily catch record book the number of giant crabs caught and report this information to the Department of Primary Industries using the integrated voice response (IVR) system. After landing, the catch must be weighed and reported using the IVR system within twenty minutes. Catch disposal records must be completed before any giant crab catch is sold or taken from the place of landing. Daily catch records must be submitted monthly to the Department of Primary Industries.

### **Additional pot entitlements**

Some Giant Crab Fishery (Western Zone) Access Licence holders may acquire more giant crab quota than can be efficiently fished on the more distant giant crab fishing grounds using their rock lobster pot entitlement. Giant crab licence holder with more than sixty giant crab quota units are authorised to use additional pots in depths greater than 150 metres.

The number of additional pots authorised is up to the pot entitlement of the linked rock lobster fishery access licence so long as the total number being worked from any one boat does not exceed 140. The additional pots are not transferable; fishers wishing to increase their deeper water pot entitlement may only do so by increasing the pot entitlement of the linked rock lobster licence. The authority to fish additional pots in deeper waters ceases and the pots are removed from the fishery if the licence holder's quota holding falls below sixty units.

The number of additional giant crab pots that can be used by the holder of a Giant Crab Fishery (Western Zone) Access Licence is specified on the licence.

### **License abeyance arrangements**

Giant Crab Fishery (Western Zone) Access Licences can be disassociated from Rock Lobster Fishery Access Licences and put into abeyance. A Giant Crab Fishery Access Licence that is in abeyance does not have an operator or boat specified and cannot be fished until it is again linked to a Rock Lobster Fishery (Western Zone) Access Licence. Giant crab fishery access licences that are in abeyance are subject to annual renewal fees.

### **Legal minimum length**

The carapace length of giant crabs is, for regulatory purposes, the straight line distance from a point between the eyes to the opposite point at the rear of the carapace. The legal minimum length for female and male giant crabs is 150 millimetres carapace length; to manage the available and spawning biomass, this measure is reviewed during the Total Allowable Commercial Catch setting process.

### **Commercial fishing gear**

Giant crabs are caught commercially with baited rock lobster pots. A pot can have only one entrance and one chamber. Each pot must have at least one escape gap designed to allow undersize rock lobster and giant crab to escape. Specifications for rock lobster pots are found in the Fisheries Regulations.

## Closed seasons

A closed season is a period during which the take, attempt to take or possession of a species is prohibited. The primary reason for the giant crab closed season is to protect female crabs during the spawning season and to prevent the use of pots during the closed season for rock lobsters. The closed season for female and male giant crabs is from 1 June until 15 November and from 15 September to 15 November, respectively. There is a total year round prohibition on the retention of berried females.

## Interstate landing arrangements

Victorian giant crab fishers must land their catch in designated Victorian ports. Subject to approval by Fisheries Victoria, giant crab fishers may land their catches in Port MacDonnell, South Australia or in Eden, New South Wales. Licence holders must apply each year for this authority.

Fisheries Victoria will continue discussions with Tasmanian fisheries managers regarding arrangements for landing Victorian giant crab catches in Tasmanian ports.

## Eastern Zone fishery

The Eastern Zone giant crab fishery will continue to be managed as a developing fishery; Rock Lobster Fishery (Eastern Zone) Access Licence holders may apply for a General Permit to operate in the fishery. Consistent with the management of other developing fisheries, specific permit conditions relating to the area of operation, fishing gear, reporting requirements and operating procedures will be developed on a case-by-case basis.

Fishing effort for giant crabs in the Eastern Zone has historically been low due to low abundance and there are no permits currently issued for the fishery. In the event of an expansion in fishing effort, reporting requirements that support the collection of information needed to assess the status of the fishery and to determine if a commercial fishery warranted will be specified in a permit. Permit requirements will likely reflect fishery management arrangements currently in place for giant crab fishing in the Western Zone.

## Export accreditation

Management arrangements for the Victorian giant crab fishery are accredited for export under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* until March 2015 when the fishery is due for reassessment.

# Objective 1: Sustainability of the giant crab resource

## Strategy 1: Rebuild the stock biomass

### Performance measures and reference and trigger points

Catch per unit effort is the primary indicator of giant crab biomass and is measured by the weight of the catch taken per 24-hour pot lift by fishers landing greater than one tonne of giant crabs in the quota year. This stock abundance indicator is easily understood, available from existing monitoring programs and is used in current stock assessments.

Other indicators that will be taken into account include catch size composition and the proportion of the Total Allowable Commercial Catch that is taken by licence holders and biological information such as growth, reproductive characteristics and mortalities. These factors will be considered where the Total Allowable Commercial Catch is not caught and trends in catch per unit effort and size indicate the need for management action. Changes in size composition may reflect trends in mortality and or recruitment but interpretation of the data will consider changes in fishing practices and trends in catch per unit effort. The ratio of the annual catch to Total Allowable Commercial Catch can be influenced by factors that are independent of the fishery status including quota trading, markets and fishing practises.

Giant crab stocks will be maintained at or above minimum biologically acceptable levels as defined by limit and target reference points (Table 3; Figure 4). In the Western Zone, the limit reference point is the mean catch per unit effort for the period 1998/99 to 2000/01 (i.e. 0.36 kilograms per 24-hour potlift); the target reference point is fifty per cent of the peak catch per unit effort between 1990/01 and 2000/01 (i.e. 0.85 kilograms per 24-hour potlift).

Where the performance measures increase to or fall below a pre-determined level, specific management triggers and actions are specified. Trends in stock indicators and the views of stakeholders at the Total Allowable Catch Forum are considered in making recommendations and fishery management decisions.

### Stock Assessment Workshop and Total Allowable Catch Forum

The status of the giant crab resource in Victoria is reviewed at the annual Stock Assessment Workshop organised by Fisheries Victoria and involving all stakeholders. The workshop is the principal means by which stakeholders are informed of the biological condition of the giant crab fishery and have input into the evaluation of stock status.

The annual Total Allowable Catch Forum provides stakeholders with the opportunity to have input into the total allowable catch- setting process. This forum is moderated by independent chair and is open to Giant Crab Fishery Access Licence holders, representative bodies, observers and Fisheries Victoria staff.

Table 3. Summary of stock indicators, reference points, performance measures, triggers and management actions used in the giant crab (Western Zone) fishery.

Stock Indicator	Limit reference points	Target reference points	Performance measures	Management triggers	Management actions
Catch per unit effort	Mean catch per unit effort for the period 1998/99 to 2000/01	50 per cent of peak catch per unit effort	Upward trend in catch per unit effort	Annual catch per unit effort falls below 80 per cent of the mean catch per unit effort for 1998/99 to 2000/01	Reduce the total allowable catch
				Decline in catch per unit effort for two consecutive years	Review the total allowable catch

Note: 'Review the total allowable catch' means to consider the management implications of maintaining, increasing or decreasing the total allowable catch or varying input controls.

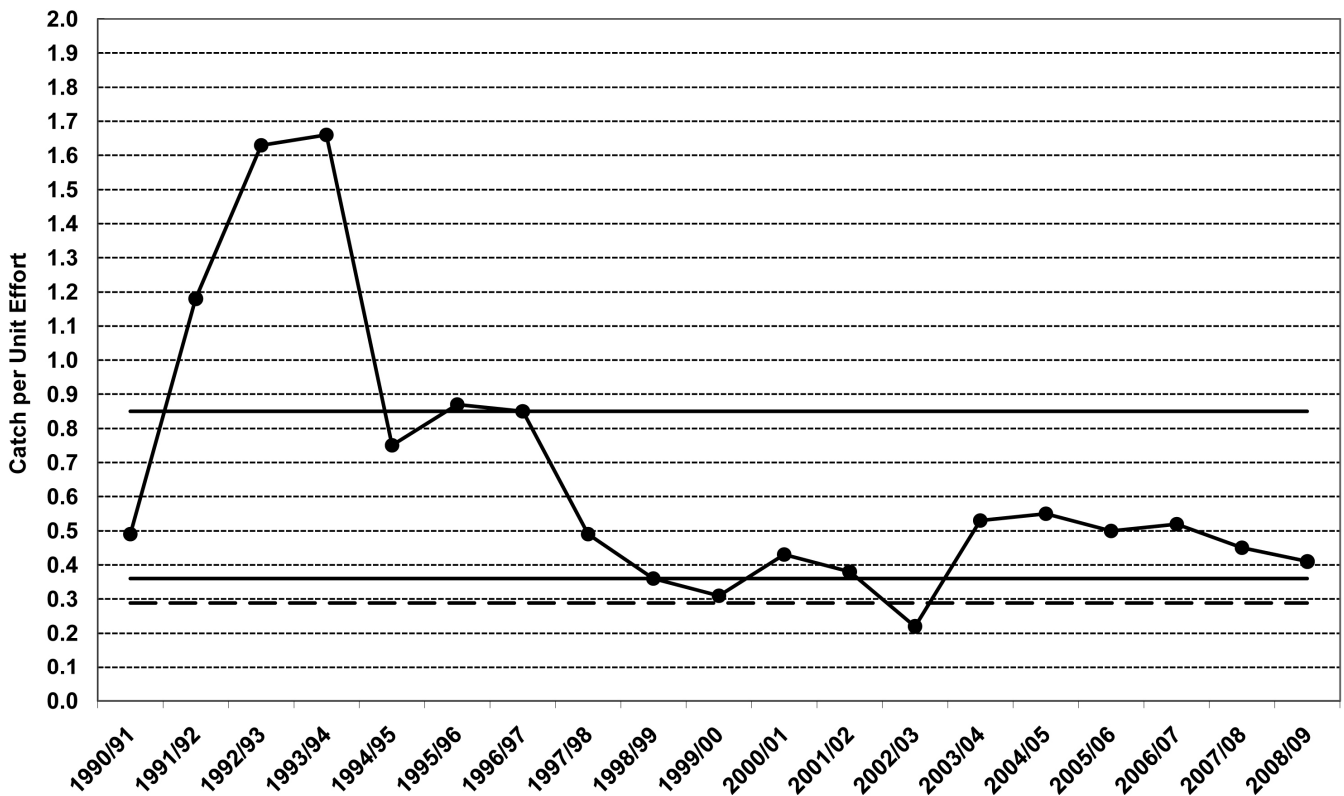


Figure 4. Catch per unit effort (kilograms per 24-hour potlift) for fishers landing more than one tonne of giant crab in a licensing season. Horizontal solid lines represent the target (upper) and limit (lower) reference points. The horizontal dashed line is the trigger point for the limit reference point.

### Setting the total allowable commercial catch, size limits and closed seasons

The Total Allowable Catch Forum makes recommendations to the Department of Primary Industries which will prepare management advice including draft quota orders, size limits and closed seasons (Figure 5). Following further consultation with industry, the Executive Director Fisheries Victoria will determine the Total Allowable Commercial Catch for the coming licence year. Final quota orders are published in the *Victoria Government Gazette*.

#### Action

Fisheries Victoria to convene the annual Total Allowable Catch Forum and Stock Assessment Workshop and apply the agreed decision rules

### Maintain knowledge about the stocks

Biological research and monitoring improves fishery manager's understanding of giant crab stock dynamics and provides a basis to evaluate alternative management arrangements including developing better indicators of stock status and maintaining fishery-independent surveys.

There are currently no biomass estimates for the giant crab resource. A length-structured model, similar to the rock lobster stock assessment model used in Victoria, is being developed in Tasmania under a Fisheries Research and Development Corporation-funded project on which Victoria is collaborating. Further work is required, including updating growth data from Victorian tag recaptures, before the model becomes a reliable predictor of giant crab biomass in the Victorian fishery.

## Total Allowable Catch Setting Processes

## Fisheries Management Advice

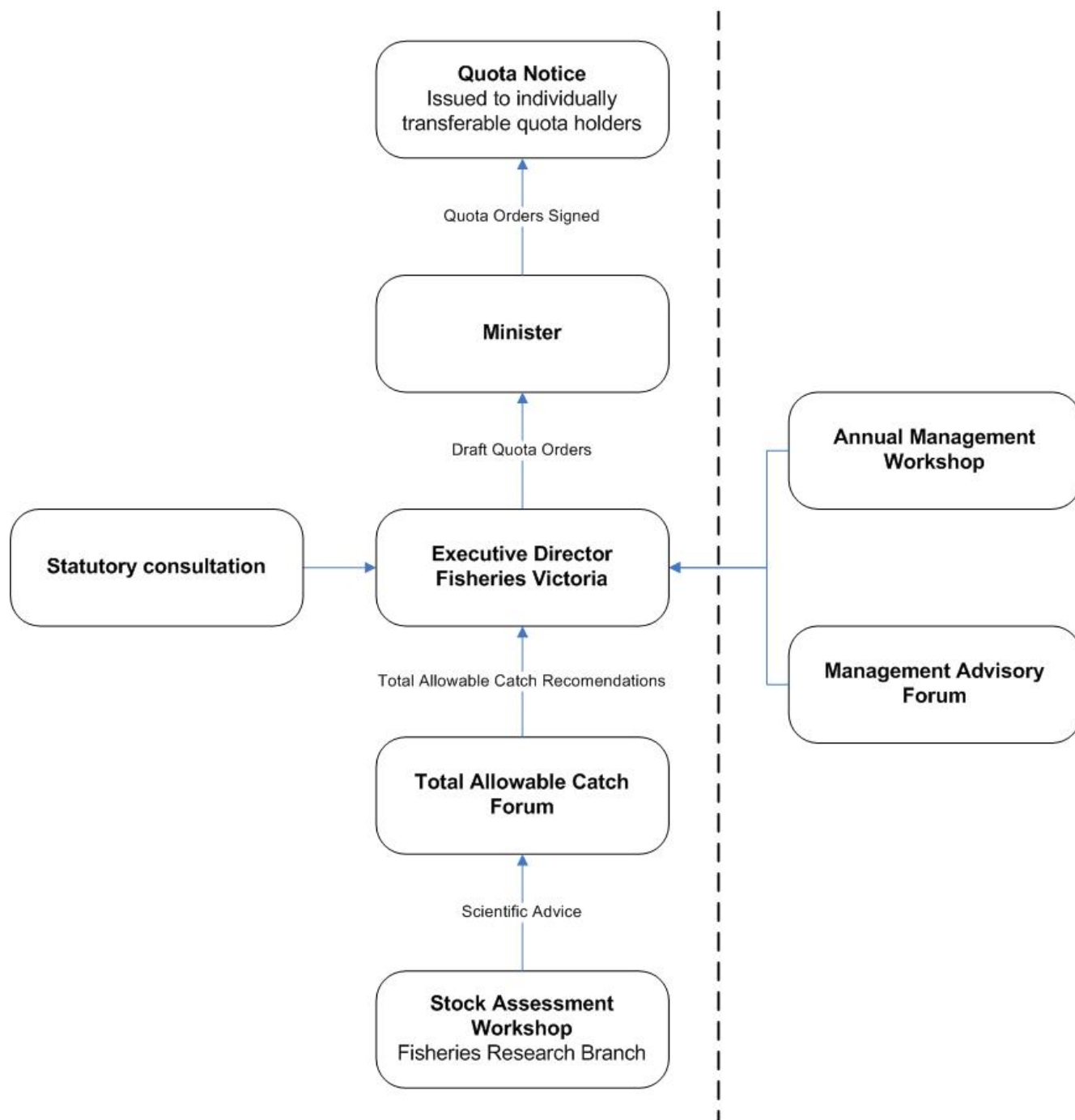


Figure 5. TACC setting and fisheries management workshop processes.

Catch per unit effort will continue to be the main biological indicator for the health of the fishery. As part of a scientific review of catch per unit effort as a stock indicator, Fisheries Victoria with assistance of a Resource Assessment Group involving fishery managers, fishery scientists and industry representatives, will determine the most appropriate method of standardising it.

#### **Actions**

Within the first year of this management plan, Fisheries Victoria and relevant stakeholders will establish a Resource Assessment Group for the purpose of improving fishery assessments (including obtaining a more complete understanding of illegal, unregulated and unreported catch) and will report to the Total Allowable Catch Forum

Fisheries Victoria to develop improved methods of standardising catch per unit effort in the first year of this management plan

#### **Maintain appropriate input controls**

The appropriate use of fishery management tools is critical to ensure that stock biomass is built and maintained at biologically sustainable and economically efficient levels. All management tools will be, over the life of this fishery management plan, reviewed as required.

In reviewing management tools, Fisheries Victoria will note the need to provide certainty for operators to plan their business activities.

#### **Action**

Fisheries Victoria to review and assess the appropriateness and effectiveness of fishery management tools for the giant crab fishery

#### **Pot design and discard of under-size giant crabs**

Escape gaps will continue to be used in pots to minimise by-catch of undersize rock lobsters and giant crabs.

Undersize giant crab and berried females caught in pots should be quickly returned alive to the sea near the habitats where they were caught. As discussed on page 20, a code of practice developed under this fishery management plan will include recommendations for appropriate practices.

Discard rates will continue to be monitored by onboard observers and taken into account during stock assessments.

#### **Actions**

Seafood Industry Victoria to prepare a code of practice that will include appropriate practices for returning undersize giant crabs and berried females to the sea alive

Industry will monitor means, including changes to pot design, to reduce giant crab mortalities.

## Strategy 2: Maintain the ecological integrity of the fishery ecosystem

### Wildlife interaction reporting

Threatened, endangered and protected species that may be encountered in the Victorian giant crab fishery include cetaceans (i.e. whales and dolphins), seabirds, marine turtles, seals, syngnathids and great white, grey nurse shark and whale sharks. Under the Victorian *Wildlife Act 1975*, the *Flora and Fauna Guarantee Act 1988* and the *Fisheries Act 1995*, interactions with protected wildlife are an offence and may be subject to prosecution.

The Department of Primary Industries and the Department of Sustainability and Environment have an agreement whereby operators fishing in Victorian waters under the authority of a Giant Crab Fishery Access Licence and the prescribed management arrangements for the giant crab fishery are not prosecuted for incidental or unintentional interactions with protected species provided the interactions are reported (Department of Primary Industries 2007). A similar agreement exists for interactions in Commonwealth waters.

Incidental interactions with protected species must be reported by operators using the Protected Species Interactions form contained in the Giant Crab Daily Catch Record Book.

#### Action

Industry to report incidental interactions with protected species using the Protected Species Interactions form

### By-catch

Several species of marine invertebrates and fish including octopus, draughtboard sharks, wrasse and leatherjackets and hermit, sand and velvet crabs are taken as by-catch in crab pots (Hobday *et al.* 2008). Some by-catch is used as bait or sold.

Monitoring by on-board observers has shown that fishing-related interactions and mortalities of by-catch species are low, due in part to the use of escape gaps and return to the sea of by-catch alive. Hobday *et al.* (2008) reported that the level of by-catch by the giant crab fishery is low and unlikely to impact on the sustainability of non-target species.

The onboard observer program will, if necessary, continue to enable ongoing assessment of the impacts of the fishery on non-target species.

#### Action

Fisheries Victoria will, where appropriate, use onboard observers to monitor giant crab discards and by-catch and consider this information in its management decisions

### Climate change

Climate change is a strategic priority for action by the Victorian Government. The *Victorian Climate Change Strategy for Fisheries and Aquaculture 2008-2018* will help to ensure the long term sustainability of Victoria's fisheries resources by guiding activities to support the fishing and aquaculture sectors and fisheries managers to prepare for, and adapt to, the impacts of a changing climate (Department of Primary Industries 2008).

Research information obtained under the strategy will assist Victoria's fishing and aquaculture sectors to manage their own exposure to climate change risks and to successfully meet the challenges and opportunities ahead. The strategy will also be used by the Victorian Government to inform reviews of the legislation, plans and policies necessary to sustainably manage our community's fisheries resources within a changing climate.

#### Actions

Fisheries Victoria will continue to monitor the potential impacts of climate change on the giant crab fishery and will develop a response if required

Fisheries Victoria will give high priority to collaborative research with adjacent jurisdictions that is aimed at understanding the potential impacts of climate change on the giant crab fishery

# Objective 2: Resource access and utilisation

## Strategy 3: Facilitate an economically efficient commercial fishery

### Current management arrangements

Under this fishery management plan, current administrative arrangements relating to the transferability of access licences, quota units, pot holdings and entitlements and determining the Total Allowable Commercial Catch remain.

Licence holders may apply to vary their access licence conditions relating to the operators, boat and pot entitlements. Up to two operators can be named on a Giant Crab Fishery Access Licence. A boat may be specified on more than one access licence which allows multiple licences to be operated from it.

#### Action

Fisheries Victoria will continue to provide a mechanism for fishery operators to vary Giant Crab Fishery Access Licence in specified circumstances

### Licensing receivers and processors

Giant Crab Fishery Access Licence holders sell their catch to commercial fish processors, wholesalers and retailers. Giant crab buyers in Victoria are not required to have a fish receivers licence.

As there does not appear to be a significant compliance problem with giant crab receivers, this management plan does not recommend licensing receivers and processors. If new information is identified during annual compliance reviews, this arrangement may be reviewed.

#### Action

Fisheries Victoria to monitor current arrangements for receivers and processors of giant crab during annual compliance reviews and take appropriate action if required

### Enhancing quota trading, investment and industry development

The separation of quota entitlements from fishery access licences has potential to enhance quota trading, investment and industry development. Other initiatives such as a web-based quota trading system could improve the transparency and effectiveness of that market.

#### Action

Fisheries Victoria to explore the potential costs and benefits of initiatives and where appropriate, implement measures to enhance quota trading, investment and industry development

### Introduce and monitor economic performance indicators

An important objective of this plan relates to industry profitability and the ability of the industry to reach optimal economic efficiency. Financial performance of the fishery, particularly in respect of the effects of management and the decision framework for setting Total Allowable Catch, is regularly monitored and the information obtained considered when catch limits and other management arrangements are discussed.

Routine monitoring of the financial performance of the industry or the individual operators is not currently undertaken. Within the first year of this management plan, the giant crab industry and Fisheries Victoria will undertake an economic survey and analysis of the fishery and develop indicators of economic and financial performance. These indicators will be used to inform future management decisions.

The Fisheries Cost Recovery Standing Committee will advise the Department of Primary Industries on an appropriate cost sharing arrangement for economic performance monitoring for the fishery.

#### Actions

Seafood Industry Victoria to undertake an economic survey and analysis of the giant crab fishery and develop indicators of economic and financial performance within the first year of this fishery management plan

The Fisheries Cost Recovery Standing Committee to advise the Department of Primary Industries on an appropriate cost sharing arrangement for economic performance monitoring for the fishery

## **Facilitate market access for giant crab products**

### **Commonwealth export accreditation**

As most giant crabs caught in Victorian fishery are exported live to Asia, it is essential that the fishery maintains its export accreditation under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The previous giant crab fishery management plan was an accredited management regime and the fishery was granted an exemption from the export control provision of that legislation until March 2015.

Fisheries Victoria will submit this management plan for reassessment under the Environment Protection and Biodiversity Conservation Act. As the industry is a major beneficiary of export approval, subsequent re-assessments will be the responsibility of industry.

### **Actions**

On behalf of the giant crab industry, Fisheries Victoria will submit the Victorian Giant Crab Fishery Management Plan for assessment under the Environment Protection and Biodiversity Conservation Act

Seafood Industry Victoria to lead subsequent re-assessments of the fishery under the Environment Protection and Biodiversity Conservation Act

### **Marketing giant crab**

Fisheries Victoria will facilitate, on a case-by-case basis, strategic proposals by industry to improve its marketing capability providing that management of the resource is not compromised.

### **Action**

Industry, with the assistance of Fisheries Victoria, to improve its capacity to market giant crab products

# Objective 3: Cost effective and participatory management

## Strategy 4: Promote stakeholder participation in decision-making

### Industry code of practice

During the life of this management plan, an overarching code of practice that documents and demonstrates the methods employed by the giant crab industry to operate in an environmentally and socially sustainable manner will be developed. This code of practice will incorporate sound biosecurity practices that may include encouraging the industry practice of using endemic species for bait to prevent the introduction and translocation of exotic species and diseases. The code will also incorporate strategies to minimise entanglements with threatened, endangered and protected species.

### Action

Seafood Industry Victoria to produce an overarching code of practice that documents and demonstrates the methods used by giant crab fishers to operate in an environmentally and socially sustainable manner

### Fishery co-management arrangements

Co-management, an integral feature of contemporary fisheries management, is an arrangement whereby the responsibility for resource management is shared between the government and user groups (Sen and Neilsen 1996).

The Department Primary Industries is committed to co-management and effectively engaging stakeholders in decision-making. DPI will continue to consult with stakeholders through the annual Fishery Management and Stock Assessment Workshops and the Total Allowable Catch Forum which will continue to provide authoritative input into the quota-setting process.

### Action

Fisheries Victoria to continue consulting with stakeholders through the annual Stock Assessment Workshop and the Total Allowable Catch Forum

## Strategy 5: Deliver and monitor cost-effective management arrangements

### Recovery of fishery management service costs

In accordance with the principles of cost recovery, Giant Crab Fishery Access Licence holders will continue to contribute to the cost of fishery management, compliance and research through an annual levy imposed at licence renewal. The levy is determined through the Regulatory Impact Statement process following advice from the Fisheries Cost Recovery Standing Committee.

#### Action

Fisheries Victoria to continue to determine the annual Giant Crab Fishery Access License levy through the Regulatory Impact Statement process following advice from the Fisheries Cost Recovery Standing Committee

### Identification and prioritisation of research and development projects

Research and development supporting this fishery management plan will focus on providing information for managing and developing Victoria's giant crab fishery within a framework of ecologically sustainable development. In addition, Fisheries Victoria is involved in regional climate change studies, the outcomes of which may have relevance to the giant crab fishery.

To facilitate expansion of and co-investment in research and development projects, Fisheries Victoria will consult with relevant stakeholders to develop research priorities that help to support the giant crab fishery.

#### Actions

Fisheries Victoria, in consultation with relevant stakeholders, will develop a five-year plan for establishing priorities for investment in research and development in the giant crab fishery

Fisheries Victoria will engage with the commercial sector to identify, develop, fund and report on projects in which the sectors are co-investors

Fisheries Victoria and industry will monitor research and development projects and outcomes in the Tasmanian giant fishery which are aimed at optimising stock biomass and returns to the industry

### Investment in and delivery of research and development

Funding for giant crab research and development has in the past been provided mainly through Fisheries Victoria, the Fisheries Research and Development Corporation and relevant stakeholders. As competition for limited research and development funds increases, projects are becoming larger, more strategic and requiring multidisciplinary approaches. Greater emphasis on efficient and effective use of research and development resources, collaboration to enhance capability, demonstration of the benefits of research and development and expanding the funding base are required.

#### Actions

Fisheries Victoria will explore opportunities for more efficient and effective use of research and development resources, to enhance capability and to demonstrate the impacts of research and development

Fisheries Victoria and relevant stakeholders will identify funding opportunities and facilitate increased investment in research and development that supports the giant crab fishery

## Strategy 6: Achieve compliance with legislation

### Review and implement the giant crab compliance strategy

Successful fisheries management in Victoria depends heavily on achieving high levels of compliance with legislation. This is best achieved by maximising voluntary compliance and creating deterrent strategies.

Fisheries Victoria will review the current compliance strategy for the giant crab fishery and focus on the primary threats identified during a formal compliance risk assessment and will include targeted operations based on intelligence reports.

The review of the compliance strategy will consider a cost-benefit analysis of using vessel monitoring systems and other new technologies more broadly for compliance in the giant crab fishery.

#### Action

Fisheries Victoria to review the current compliance strategy for the giant crab fishery and target compliance activities based on a formal compliance risk assessment and intelligence reports

### Reporting against compliance performance measures

The previous giant crab compliance strategy was established following the introduction of quota management to the fishery. While there was a need at that time to educate giant crab fishers using landing inspections, the quota management system is now well understood and compliance operations will be based on intelligence reports and risk assessments. Under this management plan, Fisheries Victoria will prepare annual compliance reports for the giant crab fishery which will be presented and discussed at the annual management workshop.

#### Action

Fisheries Victoria to prepare an annual compliance report for the giant crab fishery that will be presented at the annual management workshop

### Develop an education and communication strategy

High levels of voluntary compliance require effective education and compliance programs to promote awareness and understanding of management objectives and strategies and a sense of shared responsibility for maintaining healthy fisheries for future generations.

Industry, in consultation with Fisheries Victoria, will develop an education and communication strategy for the giant crab fishery during 2011-12.

#### Action

Industry to develop an education and communication strategy for the giant crab fishery

# Summary of the Victorian Giant Crab Fishery Management Plan

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
<b>Objective 1</b> Sustainability of the giant crab resource	<b>Strategy 1</b> Rebuild the stock biomass	Demonstrate commitment by DPI to effectively engage stakeholders in decision-making processes	Fisheries Victoria to convene the annual Total Allowable Catch Forum and Stock Assessment Workshop and apply the agreed decision rules	Stakeholder consultation continues through annual Fishery Management and Stock Assessment Workshops and Total Allowable Commercial Catch Fora	Fisheries Victoria	Seafood Industry Victoria, relevant stakeholders	Ongoing	Giant crab research budget (Stock Assessment Workshop) Giant crab management budget (Fishery Management Workshop and Total Allowable Catch Forum)
		Develop effective tools for estimating giant crab biomass	Within the first year of this management plan, Fisheries Victoria and relevant stakeholders will establish a Resource Assessment Group for the purpose of improving fishery assessments and will report to Total Allowable Catch Forum	Giant crab stock assessments are effective tools for managing the giant crab resource	Fisheries Victoria	Relevant stakeholders	First year of plan	Giant crab research budget

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
			Fisheries Victoria to develop improved methods of standardising catch per unit effort in the first year of this management plan	Catch per unit effort provides an adequate measure of giant crab biomass	Fisheries Victoria	Relevant stakeholders	First year of plan	Giant crab research budget
		Appropriate management strategies ensure sustainable management of the giant crab resource	Fisheries Victoria to review and assess the appropriateness and effectiveness of fishery management tools for the giant crab fishery	Fishery management tools are regularly reviewed to ensure they remain appropriate to manage the giant crab fishery and rebuild stocks	Fisheries Victoria	Relevant stakeholders	Ongoing	Giant crab management budget
		Increased stakeholder responsibility for natural resource management	Seafood Industry Victoria to prepare a code of practice that will include appropriate practices for returning undersize giant crabs and berried females to the sea alive	The giant crab industry assumes greater responsibility for managing the giant crab resource	Seafood Industry Victoria	Fisheries Victoria	During the life of this management plan	Subject to available funding
		The effect of fishing gear on habitat and the ecosystem in general is minimised	Industry will monitor means, including changes to pot design, to reduce giant crab mortalities	Mortalities of giant crabs in pots is measurably reduced	Industry	Fisheries Victoria	Ongoing	

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
	<b>Strategy 2</b> Maintain the ecological integrity of the fishery ecosystem	The effect of fishing gear on habitat and the ecosystem in general is minimised	Industry to report incidental interactions with protected species using the Protected Species Interactions form	Non-compliance with the requirement to report incidental interactions with protected wildlife is reduced	Industry	Fisheries Victoria	Ongoing	
		Giant crab discards and by-catch levels are understood and considered in stock assessments	Fisheries Victoria will, where appropriate, use onboard observers to monitor giant crab discards and by-catch and consider this information in its management decisions	Management decisions regarding the giant crab resource are appropriately informed	Fisheries Victoria	Industry	Ongoing	Giant crab research budget
		The current understanding of climate change informs management and business decisions	Fisheries Victoria will continue to monitor the potential impacts of climate change on the giant crab fishery and will develop a response if required	Fisheries Victoria will continue to monitor the potential effects of climate change on the giant crab fishery and will develop a response if required	Fisheries Victoria		Ongoing	Giant crab management budget
			Fisheries Victoria will give high priority to collaborative research with adjacent jurisdictions that is aimed at understanding the potential impacts of climate change on the giant crab fishery	Collaborative research aimed at understanding the potential effects of climate change is undertaken	Fisheries Victoria		Ongoing	Giant crab research budget

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
<b>Objective 2</b> Resource access and utilisation	<b>Strategy 3</b> Facilitate an economically efficient commercial fishery	The giant crab fishery is commercially and administratively efficient	Fisheries Victoria will continue to provide a mechanism for fishery operators to vary Giant Crab Fishery Access Licence in specified circumstances	The process used to varying Giant Crab Fishery Access Licences in specified circumstances is undertaken efficiently	Fisheries Victoria		Ongoing	Giant crab management budget
		Receivers and processors of giant crabs are appropriately authorised	Fisheries Victoria to monitor current arrangements for receivers and processors of giant crab during annual compliance reviews and take appropriate action if required	Current arrangements for receivers and processors are regularly reviewed	Fisheries Victoria		Ongoing	Giant crab management budget
		Effective and efficient fishery management	Fisheries Victoria to explore the potential costs and benefits of initiatives and where appropriate, implement measures to enhance quota trading, investment and industry development	Where appropriate, measures to enhance quota trading, investment and industry development are implemented	Fisheries Victoria	Seafood Industry Victoria	Ongoing	Giant crab management budget
		An efficient and economically viable commercial fishing industry	Seafood Industry Victoria to undertake an economic survey and analysis of the giant crab fishery and develop indicators of economic and financial performance within the first year of this fishery management plan	The giant crab fishery is efficient and economically viable	Seafood Industry Victoria	Fisheries Victoria	Within the first year of this fishery management plan	Subject to available funding

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
		Appropriate cost-sharing arrangements re in place between Fisheries Victoria and the commercial fishing industry	The Fisheries Cost Recovery Standing Committee to advise the Department of Primary Industries on an appropriate cost sharing arrangement for economic performance monitoring for the fishery	Economic monitoring of the giant crab fishery is appropriately resourced	Fisheries Cost Recovery Standing Committee	Industry	Ongoing	Giant crab management budget
		Commonwealth authority to export giant crabs is maintained	On behalf of the giant crab industry, Fisheries Victoria will submit the Victorian Giant Crab Fishery Management Plan for assessment under the Environment Protection and Biodiversity Conservation Act	The Victorian Giant Crab Fishery Management Plan is assessed under the Environment Protection and Biodiversity Conservation Act	Fisheries Victoria	Industry	Following the declaration of the giant crab fishery management plan	Giant crab management budget
			Seafood Industry Victoria to lead subsequent re-assessments of the fishery under the Environment Protection and Biodiversity Conservation Act	The giant crab fishery is appropriately authorised under the Environment Protection and Biodiversity Conservation Act to export its products	Seafood Industry Victoria	Fisheries Victoria	As necessary	Subject to available funding
		The giant crab industry has a diverse range of markets for its products	Industry, with the assistance of Fisheries Victoria, to improve its capacity to market giant crab products	Industry expands its ability to market giant crab products	Industry	Fisheries Victoria	During the life of this management plan	Subject to available funding

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
<b>Objective 3</b> Cost effective and participatory management	<b>Strategy 4</b> Promote stakeholder participation in decision-making	A demonstrated commitment by commercial fishers to sustainable fishing practices	Seafood Industry Victoria to produce an overarching code of practice that documents and demonstrates the methods used by giant crab fishers to operate in an environmentally and socially sustainable manner	Giant crab fishers operate in an environmentally sustainable manner	Seafood Industry Victoria		During the life of this management plan	Subject to available funding
		A demonstrated commitment by DPI to effectively engage stakeholders in decision-making processes	Fisheries Victoria to continue consulting with stakeholders through the annual Stock Assessment Workshop and the Total Allowable Catch Forum	Fisheries Victoria consults with stakeholders during decision-making processes	Fisheries Victoria	Industry	Ongoing	Giant crab management budget

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
	<b>Strategy 5</b> Deliver and monitor cost-effective management arrangements	The costs of fishery management are equitably shared between industry and government	Fisheries Victoria to continue to determine the annual Giant Crab Fishery Access License levy through the Regulatory Impact Statement process following advice from the Fisheries Cost Recovery Standing Committee	The annual levy for giant crab licences is set in accordance with the principles of cost recovery	Fisheries Victoria	Industry	Ongoing	Giant crab management budget
		Informed and prioritised research and development plans	Fisheries Victoria, in consultation with relevant stakeholders, will develop a five-year plan for establishing priorities for investment in research and development in the giant crab fishery	Research and development meets the needs of giant crab fishery management and stakeholders	Fisheries Victoria	Industry	First year of plan	Giant crab research budget
		Research and development requirements are informed by stakeholder input	Fisheries Victoria will engage with the commercial sector to identify, develop, fund and report on projects in which the sectors are co-investors	The capacity to plan research and development is improved	Fisheries Victoria	Relevant stakeholders	Ongoing	Giant crab research budget
		Evidence-based fisheries management	Fisheries Victoria and industry will monitor research and development projects and outcomes in the Tasmanian giant fishery which are aimed at optimising stock biomass and returns to the industry	Giant crab management arrangements are informed by the outcomes of fisheries research	Fisheries Victoria	Industry	Ongoing	Giant crab management budget

Objective	Strategy	Target	Action	Performance Indicator	Lead Agency	Key Partner(s)	Implementation Schedule	Funding Source
		Informed, prioritised and efficient research and development	Fisheries Victoria will explore opportunities for more efficient and effective use of research and development resources, to enhance capability and to demonstrate the impacts of research and development	Research and development in the giant crab fishery is relevant and cost effective	Fisheries Victoria	Industry	Ongoing	Giant crab research budget
		A diverse funding base for fisheries management research and development is available	Fisheries Victoria and relevant stakeholders will identify funding opportunities and facilitate increased investment in research and development that supports the giant crab fishery	Investment in cooperative research and development is obtained	Fisheries Victoria	Industry	Ongoing	Giant crab research budget
	<b>Strategy 6</b> Achieve compliance with legislation	Non-compliance with fisheries regulations is effectively managed	Fisheries Victoria to review the current compliance strategy for the giant crab fishery and target compliance activities based on a formal compliance risk assessment and intelligence reports	Compliance activities focus on the main threats identified during a compliance risk assessment	Fisheries Victoria	Industry	Ongoing	Giant crab compliance budget
			Fisheries Victoria to prepare an annual compliance report for the giant crab fishery that will be presented at the annual management workshop	Stakeholders are informed of compliance activities and results for the giant crab fishery	Fisheries Victoria		Ongoing	Giant crab compliance budget
			Industry to develop an education and communication strategy for the giant crab fishery	Industry takes a participatory role in giant crab fishery compliance	Industry	Fisheries Victoria	During the life of this management plan	Subject to available funding

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# Appendix 1: Ministerial Guidelines

The following Ministerial guidelines for the *Giant Crab Fishery Management Plan* were published in Gazette G 32 on 8 August 2002.

## MINISTERIAL GUIDELINES PURSUANT TO SECTION 28(2) OF THE FISHERIES ACT 1995

I, Candy Broad, Minister for Energy and Resources, issue the following guidelines with respect to the preparation of a Management Plan for the Victorian giant crab Fishery in the western zone.

Fisheries Victoria will be responsible for the preparation of the Management Plan. The Fisheries Co-Management Council will oversee the process of preparing the Management Plan, in consultation with the relevant Fishery Committees.

The Management Plan will be prepared in consultation with all major stakeholder groups, including commercial, recreational, traditional, conservation and aquaculture interests. In addition to the requirements of section 28 of the **Fisheries Act 1995**, the Management Plan shall address the following issues:

1. The Plan will define the process for reviewing management arrangements for the fishery including the total allowable catch (TAC), size limits and closed seasons.
2. The Plan will take account of Environment Australia's guidelines for assessing the ecologically sustainable management of fisheries.
3. The Plan will be consistent with the Victorian Government Response to the National Competition Policy (NCP) Review of the **Fisheries Act 1995**, released in December 2001.
  - a. The Plan will address the need to define a threshold limit for the total allowable catch (TAC) above which mechanisms such as auctions, tender or ballot should be considered for the allocation of increases in the TAC.
  - b. The Plan will address issues relating to pot limits in the giant crab fishery under an ITQ system.
4. The Plan will review the relationship between a Giant Crab Fishery Access Licence and a Rock Lobster Fishery Access Licence, and the prohibition of using giant crab pots in waters less than 150 m depth.
5. The Plan will review the 50 pot zone within the western zone known as the 'Apollo Bay paddock'.

Dated 25 July 2002

CANDY BROAD

Minister for Energy and Resources



