Report to the Australian Government
Department of Environment and Water Resources
February 2007

Submission for Reassessment of the Victorian Giant Crab Fishery

Introduction

The Victorian Giant Crab Fishery was approved as a Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999* on 19 March 2004. This declaration allows the export of product from the fishery for a period of three years, until 19 March 2007.

This submission to the Australian Government Department of Environment and Water Resources (DEW) is for a reassessment of the Victorian Giant Crab Fishery so that export of product from the fishery can continue. The submission contains the latest stock assessment and information on the fishery, and addresses the recommendations made in granting the current WTO.

Overview

The Victorian giant crab fishery occurs in the western rock lobster fishery zone, which is between Apollo Bay and the South Australian border. Victorian jurisdiction of the giant crab fishery adjacent to the western zone extends to 40 degrees South under an Offshore Constitutional Settlement arrangement with the Commonwealth Government.

The giant crab fishery moved to quota management in 2001, and a Giant Crab Fishery Access Licence was created. Previously, access to the giant crab fishery was via an endorsement on a rock lobster licence. There were 37 Giant Crab Fishery Access Licences in 2005/06, compared to 44 that were issued in 2001. There are many licence holders with very small quota holdings and it is expected that the number of giant crab licences will continue to fall through non-renewals and amalgamations. Although the giant crab licence is a separate licence, it must be held in conjunction with (linked to) a western zone Rock Lobster Fishery Access Licence, of which there are 85.

There is no gear entitlement on a giant crab licence, that is, there are no separate giant crab pots. Fishers catch their giant crab quota using the rock lobster pots on the rock lobster licence to which the giant crab licence is linked.

The giant crab total allowable catch (TAC) is set annually. The TAC has been set at 25 tonnes each year since quota commenced in 2001/02.

The total landed catch for the 2005/06 quota year was 21.2 tonnes, with an estimated value of about $600,000. This catch is about 1 tonne less than the previous year. Although this is slightly less than the TAC of 25 tonnes, the 2006 stock assessment workshop concluded that this was due to socio-economic factors rather than the state of the resource. Most of the uncaught quota was held by very small quota holders, many who did not attempt to catch their allocation.

Seventeen of the 37 licence holders landed giant crabs during 2005/06. Of these, 10 targeted giant crabs at some time during the year, with the remaining 7 landing giant crab only as by-catch of rock lobster fishing. Fewer than five licence holders caught

more than 1 tonne of giant crabs (the exact number cannot be reported for confidentiality reasons).

In Victoria, all giant crab landed must be covered by quota. Rock lobster fishers who do not also have a giant crab licence and quota are not permitted any by-catch of giant crabs.

Although giant crabs are known to occur in the eastern rock lobster zone (east of Apollo Bay to the NSW border), there has not been any targeted fishing and there is insufficient data to determine if there is a giant crab resource in the eastern zone that could support commercial fishing. Fisheries Victoria advised the industry in 2001 that developmental permits could be issued to eastern zone rock lobster licence holders who wished to investigate the feasibility of a giant crab fishery. Although two permits have been issued, there has been no fishing as yet and only one permit is current.

Recreational fishers are not permitted to use rock lobster pots in Victoria; they can only take rock lobsters by diving or with recreational hoop nets. Giant crabs occur in depths of 150 – 350 m and neither of these methods can be used in these depths, therefore there is no recreational fishery for giant crabs in Victoria.

Similarly, indigenous communities in Victoria do not utilise giant crabs.

Stock Assessment

The status of the giant crab resource in the in the western zone is uncertain. It was possibly overfished in the past, prior to the introduction of restricted access and a minimum size. The fishery is probably fully fished at present, but stocks are rebuilding.

Preliminary results from a length-structured model developed under a Tasmanian FRDC project were presented at the 2006 Stock Assessment Workshop using data from the Victorian giant crab fishery. However, further work is required, including updating growth data from Victorian tag recaptures, before this model can be used for assessment purposes. The growth data will be updated in time for the 2007 stock assessment, however the model is still in the developmental stage and it is likely to be a few years before it can be used for stock assessment purposes.

In the meantime, the primary indicator of giant crab abundance remains CPUE data. The Victorian Giant Crab Fishery Management Plan has established a limit reference point of the mean CPUE for the period 1998/99 to 2000/01, the three year period prior to quota management. There is also a target reference point of 50% of the peak CPUE between 1990/01 and 2000/01, the period from the start of the fishery until quota management was introduced.

Soak time of pots in the giant crab fishery typically varies from 2 – 5 days, so the CPUE data is standardised to kg/24hr-potlift. Catch rate analysis for those fishers who landed more than one tonne during 2005/06 was very similar to the previous year – 0.54kg/24hr-potlift compared to 0.55. CPUE can be expected to be volatile, given the small number of operators.

Management Triggers

The Giant Crab Fishery Management Plan contains three management triggers.

If the annual CPUE declines for two consecutive years, or falls below the limit reference point, there will be a review of the TAC. If the annual CPUE falls below 80% of the limit reference point there will be an automatic reduction in the TAC.

The 2005/06 CPUE for all fishers of 0.52 kg/24 hr potlift is above the limit reference point of 0.36 kg/24 hr potlift and the CPUE has not declined, so a review of the TAC is not required under the management plan (Fig 1).

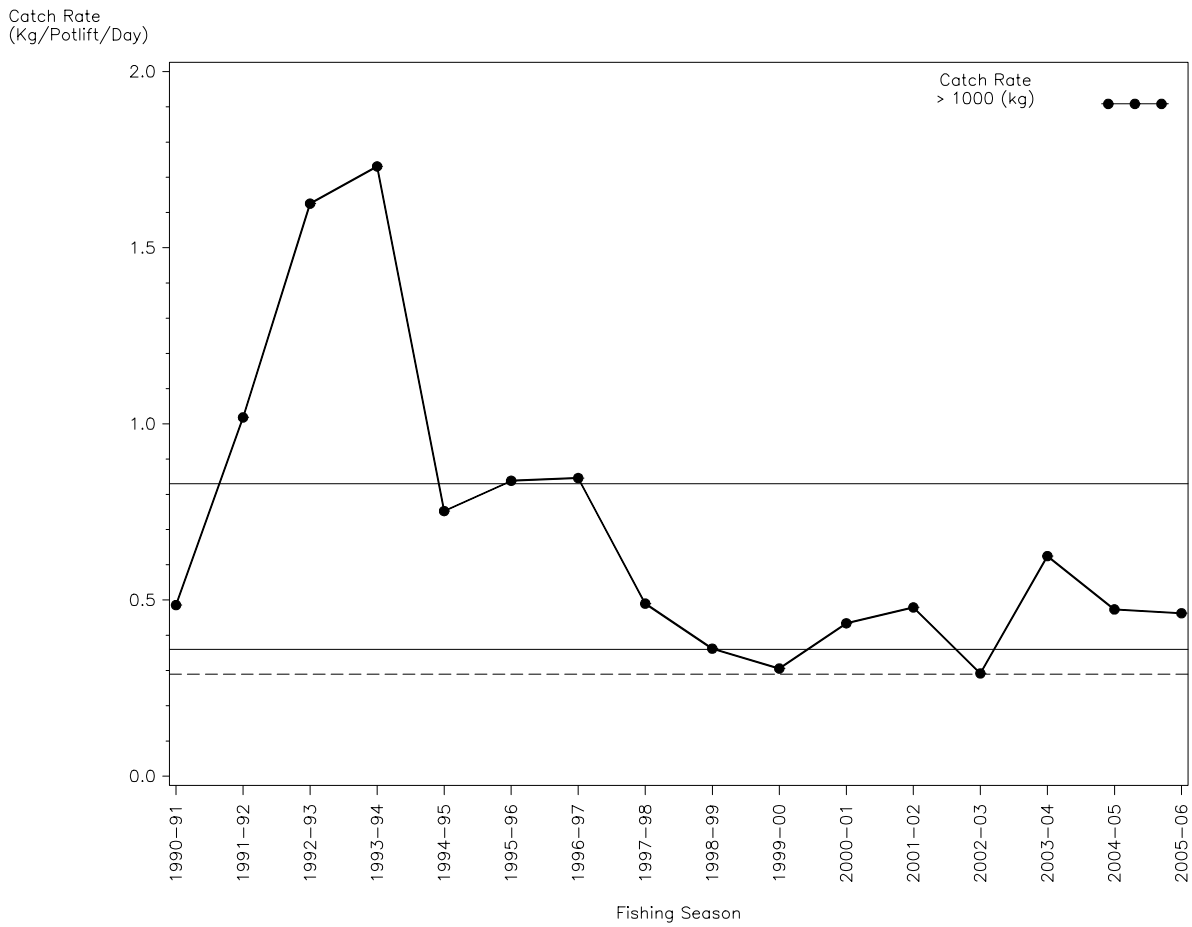

Figure 1. Catch rate (kg per 24 hour potlift) of fishers landing more than 1 tonne of giant crab in a licensing season. Horizontal lines represent target (upper) and limit (lower) reference points. Dashed horizontal line is the trigger point for the limit reference point.

TAC for 2007/08

The Victoria Giant Crab Fisheries Management Plan has established an annual TAC Forum where all licence holders and other stakeholders meet with Fisheries Victoria research, management and compliance staff to discuss the outcomes of the annual stock assessment workshop and other factors relevant to the TAC. The Forum, which has an independent Chair, provides TAC recommendations for rock lobster and giant crab to the Fisheries Co-Management Council (FCC) and to the Executive Director of Fisheries Victoria who advises the Minister.

Members of the FFC's Rock Lobster and Giant Crab Fishery Committee attend the annual Stock Assessment Workshop and TAC Forum. All FCC Fishery Committees include a Conservation member.

The recognised peak bodies in Victoria for commercial, recreational and conservation interests are also invited to send representatives to the Workshop and Forum.

For the 2007/08 quota year, commencing on 1 April 2007, the TAC Forum has recommended that the TAC for giant crabs remains at 25 tonnes.

The final TAC will be determined by the Minister in early 2007, after further consultation with industry, as required under the *Fisheries Act 1995*.

By catch, discards and interactions with protected species

Fisheries Victoria commenced an on-board observer program for the rock lobster and giant crab fisheries during 2004/05. The primary aim of the program is to collect fishery independent information on bycatch, discards and interactions with protected species. The following is a summary of observations from the program.

Giant crabs

Increased numbers of undersize giant crabs were observed again during 2005/06. All were returned to the water alive. No dead giant crabs were observed.

Also, significant numbers of larger size crabs that had not been seen for a number of years were reported. Fishers are generally optimistic about the future.

By catch

Observed by-catch was very low with hermit crabs by far the most frequently caught species. Ninety eight percent of all by catch was returned alive after capture. The following table shows the by catch species observed from fishing vessels targeting giant crab during the 2005-06 licence season.

Species	Number	Number per potlift
Crab, Hermit	1,938	0.6601
Shark, Draughtboard	34	0.0116
Cod, Unspecified	11	0.0037
Morwong	10	0.0034
Leatherjacket	7	0.0024
Whiptail	6	0.0020
Eel, Conger	2	0.0007
Seahorse/Pipefish	2	0.0007
Crab, Other	2	0.0007
Ribaldo	1	0.0003
Trumpeter, Striped	1	0.0003
Trumpeter, Unspecified	1	0.0003
Perch, Unspecified	1	0.0003
Gurnard, Unspecified	1	0.0003
Shark, School	1	0.0003
Shark, School and Gummy	1	0.0003
Dory, Silver	1	0.0003
Ling, Rock	1	0.0003
Octopus	1	0.0003

19 species	2,022	Total

Threatened and endangered species

Monitoring of wildlife, including threatened and endangered species showed a high occurrence of sea birds and dolphins in the vicinity of giant crab fishing operations, but there were no observed interactions with boats or gear.

Species	Number	Occurrence (% of trips)	Number / hour
petrels, prions and shearwaters	2640	88	27
Albatrosses	500	91	5
Dolphins	389	59	<1
gannets and boobies	242	72	3
gulls, skuas, noddys and terns	62	13	<1
eared seals	10	16	<1
southern right whale	6	9	<1

By-Product

Licence holders report by-product in their daily catch logs. The following is a summary of the average by-product reported over the past five years.

Species	By-product (annual average kg 2001/02 – 2005/06)	Catch rate (kg/potlift)
Octopus	240	0.06
Cod, southern rock	142	0.04
Leatherjacket	133	0.03
Eel, conger	32	0.01
Morwong (unspecified)	12	<0.01

Compliance

As previously mentioned, a giant crab licence can only be held in conjunction with a western zone rock lobster licence. The vessels, operators and gear are common to both fisheries. Therefore, from a compliance viewpoint the rock lobster and giant crab fisheries are regarded as one fishery.

Under the Victorian Giant Crab and Rock Lobster Fishery Management Plans, a Compliance Strategy for the Victorian Rock Lobster and Giant Crab Fisheries has been developed. The strategy includes performance indicators and measures for compliance.

In the western zone of the fishery there were 79 at-sea inspections, 228 landing inspections and 18 post landing inspections (at processors or in transit) for a total of 325 inspections during 2005/06. No offences relating to giant crab were detected.

Review of the Management Plan

The Victorian Giant Crab Fisheries Management Plan was declared under the *Fisheries Act 1995* in June 2003. The plan remains in operation for five years, which includes a period of review. The Minister may amend a management plan at any time, following appropriate consultation, but there have not been any amendments to the giant crab plan. A new management plan is due to be declared by July 2008.

The new management plan will be prepared following a similar process to the current plan. Fisheries Victoria will have responsibility for preparing the plan, and the FCC will oversee the process to ensure that the requirements of the Act are met.

The Executive Director will appoint a Steering Committee to provide him with recommendations and a draft plan. The Steering Committee will have an independent Chair and the FCC rock lobster and giant crab fishery committee and the recognised peak bodies for commercial, recreational and conservation interests in Victoria will be invited to participate. The review of the current giant crab management plan is likely to start before the end of 2007.

Department of Environment and Water Resources Recommendations
(formerly Department of Environment and Heritage)

Recommendation 1
Fisheries Victoria to advise DEW of any material change to the (fishery's) management arrangements that could affect the criteria on which EPBC decisions are based, within 3 months of that change being made.

There have been no changes to the Management Plan, or related documents or management arrangements, since the plan was declared in June 2003.

Recommendation 2
DPI to ensure that the Compliance Strategy currently being developed includes clear management actions and the means of measuring the performance of the strategy on a defined and regular basis. DPI to also ensure that the following issues are specifically addressed in the development of the Compliance Strategy for the fishery:

- *Compliance with pot number restrictions and the TAC*
- *Compliance with prescribed size limits*
- *Potential for and management of illegal catch*
- *Catch and effort data reliability (target species, by-catch and by-product)*

In Victoria there are very tight statutory links between the giant crab fishery and the rock lobster fishery. A Giant Crab Fishery Access Licence can only be held in conjunction with a western zone Rock Lobster Fishery Access Licence. The giant crab licence must specify the same boat and operator as the rock lobster licence to which it is linked and giant crabs are taken with the rock lobster pots specified on that rock lobster licence. There is no gear entitlement on a giant crab licence.

Because the boats, operators and gear are common to both the giant crab and rock lobster fishery, a single Rock Lobster and Giant Crab Compliance Strategy has been developed.

The strategy contains goals, objectives, performance indicators and performance measures, which include compliance with the TAC, LML and pot numbers. Management of illegal, unreported and unregulated catch is also addressed.

Compliance performance is assessed annually, and there is an annual compliance workshop. The outcomes are reported to industry at an annual Rock Lobster and Giant Crab Management Workshop.

Catch and effort data reliability for target species, by-catch and by-product is addressed in the research program.

Recommendation 3
In conducting its assessment of the compliance of the VGC fishery and its management arrangements with relevant government plans and policies, including threat abatement plans and strategies, recovery plans, by-catch policies and relevant international and regional regimes to which Australia is party, DPI to ensure that mechanisms to require compliance with any future plans or policies is developed and included in the management regime.

The Victorian Giant Crab Fishery Management Plan complies with known relevant government policies. The Victorian *Fisheries Act 1995* has provisions for management plans and regulations to be amended if required.

Recommendation 4
Within two years, DPI to develop and implement an ongoing monitoring and assessment program to quantify by-catch and discards to ensure that changes in by-catch quantity and/or composition can be detected and monitored over time to determine trends in giant crab discards for inclusion in stock assessments. Information is to be collected on an ongoing basis and independently validated.

A three year on-board observer program was implemented in 2004/05 to monitor discards, by-catch and wildlife interactions. A risk assessment will be conducted at the end of the program and an ongoing monitoring program may be developed as required, based on the outcomes of the risk assessment.

Recommendation 5
Within 12 months, the Giant Crab Fishery Assessment Group to review the research information needs and priorities to support management in the areas of sustainable use of the giant crab stock and protection of the ecosystem. In particular, analysis of research need in the areas including, but not limited to, recruitment to the fishery, fishing mortality, habitat characterisation and ecosystem impacts should be considered. A research strategy to address identified priority areas will also be developed and will include clear and achievable timeframes for implementation.

The Giant Crab Fishery Management Plan has a list of research priorities. (A copy of the Plan is available from the DPI website- www.dpi.vic.gov/fishing). This is taken from the Victorian Fisheries Co-Management Council's five-year Research Plan. Research needs and priorities are reviewed annually at the stock assessment workshop.

Due to the relatively low catch and value of the giant crab fishery, research resources and funds are limited, and research aimed at addressing all the recommendations at one time cannot be achieved.

Currently, the priority is the on-board observer program that is addressing by-catch, discards and protected species issues, as well as verifying catch and effort data. This has been identified as the highest priority for the fishery.

Recommendation 6
Develop and implement, in conjunction with other relevant jurisdictions where possible, a robust stock assessment model that incorporates reliable information on stock recruitment relationships and is informed by independent information to facilitate the setting of annual TAC and determination of stock status.

Stock assessment is currently based on CPUE data. The Victorian Giant Crab Management Plan contains limit and target reference points, performance measures, management triggers and TAC decision rules. There is an annual stock assessment meeting and a TAC setting Forum.

Preliminary results from a length-structured model developed under a Tasmanian FRDC project were presented at the 2006 Stock Assessment Workshop using data from the Victorian giant crab fishery. However, further work is required, including updating growth data from Victorian tag recaptures, before this model can be used for assessment purposes.

The growth data will be updated in time for the 2007 stock assessment, however the model is still in the developmental stage and it is likely to be a few years before it can be used for stock assessment and TAC setting purposes.

Recommendation 7
DPI to seek and participate in a formal and regular dialogue with other Australian jurisdictions responsible for managing giant crab fisheries to ensure research and management arrangements are complementary. All available information regarding removals of target and by-product species by other jurisdictions and sectors (including Commonwealth trawlers) is to be fully accounted for in stock assessments.

As occurs with all major fisheries, there is regular communication with other jurisdictions and management arrangements are generally complementary.

All available information is being considered in developing the new model.

A tri-State meeting between South Australia, Tasmanian and Victoria was held in Melbourne in October 2006 to discuss by-catch risk assessment for the rock lobster fishery, and other issues. It has been agreed that there will be an annual meeting of the three States to discuss management issues for both rock lobster and giant crab fisheries.

Recommendation 8
DPI to implement within twelve months a mandatory system for the reporting of all interactions with protected species. An education program for fishers on species recognition, interaction minimisation/mitigation measures and the importance of reporting is to be developed in conjunction with the reporting system.

DPI has worked with the Victorian industry to develop a Code of Practice for minimising wildlife entanglements, particularly whales, in rock lobster/giant crab gear. This was introduced in 2004/05. The code mainly relates to the way in which fishing gear is set, with particular attention to the length of the pot lines. Excessive rope on the surface has been identified the most likely cause of known whale entanglements in Victoria. DPI is monitoring the uptake of the Code of Practice, and most fishers are complying.

Fisheries Victoria is proposing to introduce a mandatory reporting process for all interactions with protected species, similar to the program that is in place for Commonwealth fisheries. Licence holders will be provided with forms in their daily catch logs for reporting the details of any interactions. Fisheries Victoria will collate the data on these forms and provide a monthly report to DEW on behalf of the licence holders.

These new forms will be introduced in April 2007 at the start of the new licensing year. The fishing industry is aware of these new forms through discussions between Fisheries Victoria and the peak body, Seafood Industry Victoria.

Recommendation 9
DPI to conduct an ecological risk assessment focussed on interactions of the fishery with by-catch and protected species, ecological communities, deepwater habitats and the marine environment to confirm assumptions tat the fishery poses minimal risk to these components. The risk assessment should also include assessment of the risks of ghost fishing by lost or discarded giant crab pots in the fishery. Performance measures, targets and responses for the ongoing management of high risk areas will also be developed.

A risk assessment will be conducted at the conclusion of the on-board observer program.

Victoria also participated in the Commonwealth risk assessment process relating to the introduction of Marine Protected Areas (MPAs) in Commonwealth waters. The outcomes of this process will be used to inform any Victorian risk assessment.

Due to the relatively low catch and value of the fishery, research resources are limited and research funding aimed at meeting all of the recommendations at the one time can not be achieved..

Recommendation 10
DPI to collaborate with the Tasmanian DPIWE and AFMA in any future research or data collection programs to assess the impact of harvest and incidental damage to giant crabs and their habitat by trawling activity in giant crab fishing grounds.

Through regular discussion and collaboration with other agencies on rock lobster research programs, Victoria is aware of the giant crab habitat mapping work being done by Tasmania, and the joint work being done by Tasmania and CSIRO, in relation to trawling activity on giant crab grounds off the west coast of Tasmania.

Victoria has offered to assist if required, but so far the study is confined to Tasmanian waters and assistance has not been sought. The conflict between trawlers and giant crab boats appears to be predominantly a Tasmanian issue. Victoria is monitoring the situation.