

INTEGRATED FISHERIES MANAGEMENT

DRAFT ALLOCATION REPORT - WESTERN ROCK LOBSTER RESOURCE

A discussion paper prepared by the
Integrated Fisheries Allocation Advisory Committee
for public comment



OCTOBER 2005



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MAKING A SUBMISSION

Members of the public are invited to make written submissions on this draft allocation report.

Those making submissions are encouraged to make reference to the particular proposal or section of the report upon which they wish to comment. If you disagree with a particular proposal or section, please try to suggest alternative ways to address or resolve the issues identified in the report. Clear reasons should be included in your response, so that your views can be properly considered.

The Integrated Fisheries Allocation Advisory Committee (IFAAC) will consider the content of all submissions during the preparation of its final report to the Minister for Fisheries and make changes to its initial position as required. A summary of all the submissions will be provided to the Minister at the time IFAAC submits its final report to him.

After the submission period has closed, the IFAAC may write to stakeholders who have lodged a written submission, inviting them to speak to the committee in support of their submission.

The IFAAC encourages stakeholders and others to communicate among themselves in the preparation of their submissions and would appreciate the lodgement of joint submissions on particular issues, such as percentage shares.

If the IFAAC receives a submission that it considers requires further consultation, the committee will draw it to the attention of all those who have lodged a submission or expressed an interest in receiving information.

Submissions should be made prior to 20 January 2006 and sent to:

IFAAC
Locked Bag 39
Cloisters Square Post Office
PERTH WA 6850
Fax: (08) 9482 7224

As a matter of convenience the IFAAC would appreciate the lodgement of submissions electronically using the following email address ifaac@fish.wa.gov.au.

1 COMMITTEE'S DRAFT RECOMMENDATIONS

Recommendation 1.

That allocations should be over two regions of the West Coast Rock Lobster Managed Fishery – northern region (Zones A/B) and southern region (Zone C).

Recommendation 2.

That the western rock lobster management advisory process be reformed so as to encourage all sectors (commercial, recreational and indigenous) to discuss and negotiate inter-sectoral issues such as spatial and temporal separation, as well as processes for resolving intra-sectoral management issues. Outstanding matters as of 2009/2010 should be referred to the IFAAC to provide the Minister with advice on an appropriate resolution.

Recommendation 3.

Allocations should be based on the predicted proportional catch shares in 2009/2010.

Recommendation 4.

The customary fishing initial allocation should be one tonne.

Recommendation 5.

The recreational sector's allocation should be – based on the Department of Fisheries predictions of catch shares in 2009/2010 – 4.9 per cent overall and 7.5 per cent in the southern region (Zone C) and 0.9 per cent in the northern region (Zones A/B).

Recommendation 6.

The commercial sector's allocation should be – based on the Department of Fisheries predictions of catch shares in 2009/2010 – 95.1 per cent overall and 92.5 per cent in the southern region (Zone C) and 99.1 per cent in the northern region (Zones A/B).

Recommendation 7.

Sectors may take greater than their initial allocations without any penalty until 2009/2010 subject to compliance with sustainability criteria.

Recommendation 8.

A reallocation mechanism should be implemented for the western rock lobster resource, as a matter of priority but no later than 2009/2010.

Recommendation 9.

That the Executive Director of the Department of Fisheries develop, in consultation with stakeholders, the necessary regulatory structures to give effect to the Government's IFM policies contained in Guiding principles vii and x (see section 3.1.2).

1.1 Items Noted by IFAAC

Note 1:

The IFAAC notes the Minister for Fisheries' view that there should be an allocation for customary fishing and that customary fishing access rights should be given priority over all other fishing access.

Note 2:

The IFAAC notes the Minister's advice regarding an allocation for non-extractive users of the resource and in accordance with the Minister's position on this matter it will not be recommending an allocation to non-extractive users.

Note 3:

The IFAAC notes that allocations may need further adjustment in the future if more accurate information becomes available on the recreational catch, however the period for adjustment should not extend beyond 2009/2010. The IFAAC seeks submissions on how this might be carried out.

Note 4:

The IFAAC would welcome comments on relevant economic, social, cultural and environmental issues and how these might be incorporated into Integrated Fisheries Management (IFM).

Note 5:

The IFAAC is providing advice on allocations of the western rock lobster resource over the area that exists within the boundaries of the West Coast Rock Lobster Managed Fishery only (i.e. between Exmouth Gulf and Augusta extending seawards 200 nautical miles).

Note 6:

The IFAAC notes the Ministerial advice referred to in section 3.2.1 and has included recreational fishing by indigenous people, as distinct from customary, as part of the recreational allocation.

Note 7:

The IFAAC notes that historically there has been no access to western rock lobster for commercial aquaculture purposes and arrangements for access are contained in Ministerial Policy Guideline No.20 (Department of Fisheries, 2004).

Note 8:

The IFAAC welcomes further information as to the customary take of western rock lobster through submissions on this report. The IFAAC notes that the demands of IFM (IFM Government Policy, paragraph 18, Appendix A) will necessarily require more research and monitoring of the customary take.

Note 9:

That where a sector's allocation is less than 0.1 per cent of the total catch the IFAAC has adopted the approach of specifying the allocation by quantity rather than proportion.

Note 10:

The IFAAC notes that the Department of Fisheries has proposed that the performance indicator for a sector's catch should be the average of that sector's proportion of the catch over a three-year period.

2 INTRODUCTION

Integrated Fisheries Management (IFM) is an initiative aimed at addressing the issue of how fish resources in Western Australia can be best shared between competing users within the broad context of “Ecologically Sustainable Development”, or ESD.

The Minister for Fisheries established the Integrated Fisheries Management Allocation Advisory Committee (IFAAC), under Section 42 of the *Fish Resources Management Act 1994* (FRMA), in 2004 to investigate IFM resource allocation issues and make recommendations to him on optimal resource use.

The IFAAC has prepared this report, the first in a series, which documents the committee’s initial position on allocations for the western rock lobster resource, along with the reasons for its conclusions. This report follows the IFAAC’s preliminary investigation of the western rock lobster resource sharing issues and consultation with stakeholders.

The report is being released for a three-month public comment period to facilitate discussion and encourage comment on how the western rock lobster resource should be shared between competing users (commercial, recreational and indigenous). At the conclusion of the comment period, the IFAAC will consider all submissions and finalise its advice to the Minister for Fisheries on allocations for the western rock lobster resource.

The IFAAC expects to provide this advice in early 2006.

Following the receipt of the IFAAC’s advice, the Minister for Fisheries, consistent with the Government’s policy, will determine the allocations to sectors.



3 BACKGROUND

The most recent development in the management of fisheries in Western Australia is the introduction of IFM.

In summary, IFM involves:

- setting the sustainable harvest level (SHL) of each resource that allows for an ecologically sustainable level of fishing;
- allocating explicit catch shares for use by indigenous, recreational and commercial fishers;
- continual monitoring of each sector's harvested catch;
- managing each sector within its allocated catch share; and
- developing mechanisms to enable the reallocation of catch shares between sectors.

3.1 The IFAAC

The members of the IFAAC are Mr Murray Jorgensen (Chair), Mr Norman Halse and Professor George Kailis.

Murray Jorgensen has been Chair of the Forest Products Commission for the past four years and has demonstrated a strong background in natural resource management. Mr Jorgensen has a proven background in various business ventures as a chairman and consultant and has extensive experience in local government, including five years as Shire Clerk at the Shire of Manjimup and 10 years as Chief Executive Officer of the Town of Albany.

George Kailis is Professor of Management at the University of Notre Dame in Fremantle and is a Director of the MG Kailis Group. He has had extensive

experience on government, science and industry bodies at a state, national and international level. Professor Kailis is currently Chair of the Cockburn Sound Management Council, Chair of the Australian Seafood Industry Council Native Title Working Group, and a member of the Pearling Industry Advisory Committee. He has previously been Director of the Australian Fisheries Management Authority and the Fisheries Research and Development Corporation.

Norman Halse is a keen recreational fisher, conservationist and researcher. Mr Halse worked for Western Australia's Department of Agriculture for 40 years, his career culminating as that department's Director General. His conservation interests included serving as past President of the Conservation Council of WA, as Chairman of the National Parks and Conservation Authority and as a member of the Environmental Protection Authority. Mr Halse has a strong interest in recreational fishing, as demonstrated by his service as a past Chair, and current board member, of peak body Recfishwest.

3.1.1 Conflict of Interest

If a member had a conflict of interest in any matter to be considered by the IFAAC, the member disclosed the interest, the disclosure was recorded in the minutes of the committee and the member did not vote on the matter.

It should be noted that each member of the IFAAC holds a current recreational rock lobster licence and that George Kailis has an interest in the commercial rock lobster industry as a shareholder and Director of the MG Kailis Group.

3.1.2 Guiding principles

The Minister provided the IFAAC with the following *Guiding Principles and Terms of Reference*.

Government has adopted the principles, outlined below, as the basis for IFM (Appendix A). The IFAAC should ensure that any advice to the Minister for Fisheries is consistent with these principles:

- i. Fish resources are a common property resource managed by the Government for the benefit of present and future generations;
- ii. Sustainability is paramount and ecological requirements must be considered in the determination of appropriate harvest levels;
- iii. Decisions must be made on best available information and where this information is uncertain, unreliable, inadequate or not available, a precautionary approach adopted to manage risk to fish stocks, marine communities and the environment. The absence of, or any uncertainty in, information should not be used as a reason for delaying or failing to make a decision;
- iv. A harvest level, that incorporates total mortality, should be set for each fishery¹ and the allocation designated for use by each group should be made explicit;
- v. Allocations to user groups should account for the total mortality on fish resources resulting from the activities of each group, including bycatch and mortality of released fish;
- vi. The total harvest across all user groups should not exceed the prescribed harvest level. If this occurs, steps consistent with the impacts of each user group should be taken to reduce the take to a level that does not compromise future sustainability;
- vii. Appropriate management structures and processes should be introduced to manage each user group within their prescribed allocation. These should incorporate pre-determined actions that are invoked if that group's catch increases above its allocation;
- viii. Allocation decisions should aim to achieve the optimal benefit to the Western Australian community from the use of fish stocks and take account of economic, social, cultural and environmental factors. Realistically, this will take time to achieve and the implementation of these objectives is likely to be incremental over time;
- ix. Allocations to user groups should generally be made on a proportional basis to account for natural variations in fish populations. This general principle should not, however, preclude alternative arrangements in a fishery where priority access for a particular user group(s) may be determined. It should remain open to government policy to determine the priority use of fish resources where there is a clear case to do so; and
- x. Management arrangements must provide users with the opportunity to access their allocation. There should be a limited capacity for transferring allocations unutilised by a sector for that sector's use in future years, provided the outcome does not affect resource sustainability.

¹ Fishery is defined under the FRMA as one or more stocks or parts of stocks of fish that can be treated as a unit for the purposes of conservation or management; and a class of fishing activities in respect of those stocks or parts of stocks of fish.



3.1.3 The IFAAC's Terms of Reference

Taking into account the principles detailed above, the IFAAC is to investigate fisheries resource allocations issues, and provide advice and recommendations to the Minister on matters related to optimal resource use, and in particular provide advice on:

- i. allocations between groups (sectors) within the harvest limits determined for each fishery;
- ii. strategies to overcome allocation and access issues arising from temporal and spatial competition for fish at a local/regional level;
- iii. allocation issues within a fisheries sector as referred by the Minister for Fisheries;
- iv. more specific principles (than detailed above) to provide further guidance around allocation decisions for individual fisheries; and
- v. other matters concerning the integrated management of fisheries as referred by the Minister for Fisheries.

In the first instance, the Minister for Fisheries has requested the IFAAC to provide advice and recommendations on allocations pertaining to the West Coast Rock Lobster Managed Fishery, Abalone Managed Fishery (with emphasis on the Perth metropolitan fishery), and West Coast Demersal Finfish Fishery (with emphasis on dhufish, baldchin groper and snapper).

The IFM Government Policy released in October 2004 (Appendix A) has been the principal source of guidance for the IFAAC in developing its recommendations on sectoral allocations. The Minister for Fisheries has also provided the IFAAC with additional advice on various IFM issues, and IFAAC has taken this advice into account in its deliberations. These issues are discussed in section 3.2.

Under the IFM Government Policy (Paragraph 11, Appendix A), the Minister determines the process and timeframes for resolving allocations of each fish resources based on the advice of the IFAAC. The Minister has approved a four-stage IFM allocation process developed by the IFAAC (Appendix B).

The four stages involve:

- A. determining the need for a formal allocation process in a fishery;
- B. development of an Integrated Fisheries Management Report by the Department of Fisheries;
- C. the integrated fisheries allocation process, which includes:
 - Step 1. Investigation of the allocation issue;
 - Step 2. IFAAC settling a draft allocation report and releases it for public comment;
 - Step 3. IFAAC recommending allocations to the Minister for Fisheries;
 - Step 4. The Minister determining allocations; and
- D. determining mechanisms for future allocations between sectors.

Box 1 Fisheries Management Paper 192

An IFM report for the western rock lobster resource, *Fisheries Management Paper No.192 (FMP192)*, was released by the Department of Fisheries in April 2005. That paper includes a report on the sustainability of the fishery and a statement on the sustainable harvest level as required under the IFM Government Policy (see paragraphs 6 & 7, Appendix A) and information that addresses the broader requirements for reporting under an Ecologically Sustainable Development framework.

Other key documents on the western rock lobster sustainability include the *State of the Fisheries and Western Rock Lobster Sustainability Report* prepared by the Department of Fisheries for the Commonwealth Department of Environment and Heritage.

The Executive Director, Department of Fisheries, under the IFM policy has the responsibility for approving a sustainability report for each fishery which includes a clear statement on the sustainable harvest levels. The harvest levels for the western rock lobster resource are given in section 8.7 of FMP No.192. The Executive Director of the Department of Fisheries has set the sustainable harvest level for western rock lobster taken by all sectors as a range between 9,500 tonnes and 15,000 tonnes.

The objectives for the management of the commercial fishery are given in FMP No.192 (p.21). The biological objective is to:

Ensure the abundance of breeding lobsters is maintained or returned to, as the case may be, at or above the levels in 1980, which is estimated to be about 20 per cent of the unfished parental biomass.

In practice, the Department manages the exploitation rate of western rock lobster through the use of controls on fishing effort and biological controls (such as size limits, taking setose and tar spot), to ensure that the biological objective is met and catches are sustainable. Recently, a draft decision rules framework has been developed for the fishery, primarily aimed at ensuring that the breeding stock in each of the three management zones is above a certain level. For the commercial fishery, the management arrangements are provided in the *West Coast Rock Lobster Management Plan*. As the management system is based on input controls as distinct from output controls (quotas) there is no reference to a sustainable harvest level in the management plan.

The recreational rock lobster fishing sector is controlled by regulation. Under present management, there is no cap on the take of rock lobster by the recreational sector.

Further information on IFM can be obtained from the Department of Fisheries on (08) 9482 7333 or by visiting the website at: www.fish.wa.gov.au.

Source: Department of Fisheries, Government of Western Australia

In the case of the western rock lobster resource, the first stage (point A above) of the process was unnecessary, as the Minister for Fisheries has already requested that the IFAAC provide him with advice and recommendations on allocations.

The second stage of the process was completed in April 2005, when the Department of Fisheries released Fisheries Management Paper No.192, *Integrated Fisheries Management Report Western Rock Lobster Resource* (FMP No.192), (Department of Fisheries, 2005). FMP No.192 has been the principal source of information used by the IFAAC in its consideration of the allocations for the western rock lobster resource (see Box 1).

During its investigation of allocation issues (Stage C, Step 1 of the process – see above) the IFAAC sought written submissions from key stakeholders on issues related to allocation and provided an opportunity for them to make a verbal presentation to the committee. Stakeholder submissions can be obtained from the sources provided in Appendix C. The IFAAC acknowledges that not all stakeholders have had an opportunity to make submissions. The recommendations in this draft allocation report should be taken only as the **initial** view of the IFAAC, published to assist in debate and in guiding those interested in making a submission to the IFAAC.

3.2 Ministerial Advice

In addition to using the IFM Government Policy (Appendix A) in its deliberations, the IFAAC has been provided additional guidance by the Minister for Fisheries on an indigenous allocation; the reference period 1997–2001; and on allocations to non-extractive uses. This advice and the IFAAC's response are summarised below.

3.2.1 Customary allocation

The Minister for Fisheries provided guidance with respect to the customary fishing sector in a letter to the IFAAC (see Appendix D). The key point the Minister made in his letter was that he expected that the IFAAC would recommend some allocation for customary fishing of inshore species.

The Minister also noted that he supported recommendation 13 of the draft Aboriginal Fishing Strategy, which states:

Within any given fisheries allocation framework developed in Western Australia, customary fishing access rights should be given priority over all other fishing access, including commercial and recreational fishing.

Customary fishing was described by the Minister as the fishing activity of indigenous people who have a right (in accordance with Aboriginal law and customs) to fish in a customary manner. He commented further that not all indigenous people are permitted to undertake customary fishing in all areas of the state under Aboriginal law and custom.

Note 1:

The IFAAC notes the Minister for Fisheries' view that there should be an allocation for customary fishing and that customary fishing access rights should be given priority over all other fishing access.

3.2.2 Formalising catch shares over the period 1997–2001

The IFAAC at its meeting of the 6 January proposed the following approach in relation to Paragraph 19 of the IFM Government Policy regarding the dates to be used as a basis for developing recommendations on allocations:

1. The IFAAC will make an assessment of 1997–2001 catch shares, as a basis for future allocation discussions (Paragraph 19, IFM Government Policy, Appendix A).
2. In making its recommendation for allocation, the IFAAC will apply the broader principles in the IFM Government Policy, in particular Paragraph 5 (Paragraph 5 contains the Guiding Principles which are reproduced at section 3.1.2).

The Minister's response to the IFAAC's advice was*:

"...I approve of IFAAC proceeding to consider allocations on the basis of the resolution it made on the 6 January regarding this matter."

3.2.3 Allocation to the non-fishing sector

The Conservation Council of Western Australia suggested that there was a lack of clarity about the standing and role of the non-extractive sectors in the IFM allocation process.

The IFAAC sought guidance from the Minister for Fisheries on whether he expected that the committee would provide a recommendation on allocations to non-extractive users of the resource.

The Minister responded by advising that:

1. The IFM initiative was designed to determine allocations between commercial, recreational (including charter) and indigenous sectors that are extractive users; and
2. He was not seeking a recommendation from the IFAAC on allocations to non-extractive users of the resources (Appendix E).

Note 2.

The IFAAC notes the Minister's advice regarding an allocation for non-extractive users of the resource and in accordance with the Minister's position on this matter it will not be recommending an allocation to non-extractive users.

3.3 Additional Guiding Principles Adopted by the IFAAC

The IFAAC will, in accordance with its terms of reference, be making recommendations on initial allocations for western rock lobster to each of the sectors. Other allocation principles that the IFAAC has considered or that have been brought to the IFAAC's attention, in addition to those referred to previously (sections 3.1 and 3.2) that have a bearing on its deliberations, are discussed below.

The IFAAC was guided by the following principles in relation to considering allocation options. These principles may evolve over time into more generally accepted principles in relation to the IFAAC's tasks, but in the first instance they apply only for western rock lobster, which is a fishery, which is classified as 'fully exploited' (FMP No.192).

1. The approach should be pragmatic and incremental;
2. There was a need to make explicit allocations (as distinct from making a general statement of principle about how allocations should be made);
3. Allocations should not have the effect of merely deferring a decision indefinitely;
4. Recommendations that amount to a change to catch shares as assessed in the 1997–2001 period need to be explained on the basis of the 'Guiding Principles', (particularly Guiding principle viii, see section 3.1.2);

* Extract from letter from the Minister to the IFAAC of 1 April 2005.

5. That until there are re-allocation mechanisms, the IFAAC should be cautious in making recommendations that would have the effect of immediately and significantly impacting on a sector; and
6. Re-allocation mechanisms should be developed within a specified timeframe, which based on stakeholder comments should be set at not more than five years for western rock lobster.

3.3.1 Data uncertainty

The IFM Government Policy, 19 (Appendix A) states catch shares:

... will be formalised using the best available information during the five-year period from 1997–2001.

The IFAAC has used the Department's 'Best Estimates of the WRL Recreational Catch' (Appendix F) in its consideration of allocations. The IFAAC recognises that research will continue on the best method to estimate the recreational catch and, in future, it is possible that there may be a further modification of the recreational catch estimates for the reference period.

The IFAAC has interpreted the intention expressed in the quote above as that the *status quo* as at 1997–2001 should be the base of future allocation discussions. In the event that the estimates for this reference period are shown to have been in error, then this is a sufficiently relevant consideration to warrant the adjustment of the initial allocation under IFM. There is, however, also a compelling public interest in the need to provide long-term certainty under IFM. Accordingly, this opportunity for adjustment should not continue indefinitely and a reasonable 'sunset period' of five years should be sufficient for this purpose. The IFAAC would be interested in receiving submissions on how any such adjustment might be effected in practice.

Note 3.

The IFAAC notes that allocations may need further adjustment in the future if more accurate information becomes available on the recreational catch, however the period for adjustment should not extend beyond 2009/2010. The IFAAC seeks submissions on how this might be carried out.

3.3.2 Optimising benefit to the community

Guiding policy viii (see section 3.1.2) of the IFM Government Policy states:

Allocation decisions should aim to achieve the optimal benefit to the Western Australian community for the use of fish stocks and take account of economic, social, cultural and environmental factors. Realistically, this will take time to achieve and the implementation of these objectives is likely to be incremental over time.

The IFAAC notes that there is no quantitative assessment in FMP No.192 which assists in determining the optimal benefit to the Western Australian community taking into account economic, social, cultural and environmental factors.

The Executive Director of the Department of Fisheries stated that should the IFAAC require "information on strategies for optimising net economic benefits for the State then further work is required" then there is a possibility of commissioning a report on this topic. However, any such report would need to also deal with the problem of how to optimise social benefits. Formal quantitative assessment of social benefits is not yet commonly practiced.

A social study is underway as part of the review of the management arrangements for the commercial fishery, but the results are not available at this time. Given the focus of that study is on the commercial sector management arrangements, it may have limited application to the consideration of allocations between sectors.

No specific mention is made in FMP No.192 as to cultural factors, other than those relating to customary fishing.

Given that there will be no allocation for non-extractive users, the IFAAC is of the view that environmental factors should largely be taken into account through setting the sustainable harvest level (SHL) and other processes. The Conservation Council of Western Australia has raised some specific issues to do with environmental issues and made some suggestions regarding management changes. These have been referred to the Executive Director of the Department of Fisheries for consideration.

Although there is insufficient information available to enable a community benefit optimisation process for allocation between sectors in the western rock lobster fishery, the IFAAC recognises that it must give consideration to this issue. The western rock lobster commercial fishery is a very valuable fishery and creates economic benefit and social benefit to that section of the community involved in the industry.

In comparison the recreational fishery for western rock lobster involves a smaller economic activity but creates a social benefit to the larger number of people involved.

In the absence of appropriate information, the IFAAC did not find it possible to come to any conclusion on the comparative benefits of these two fisheries to the community as a whole.

The IFM process requires an allocation to each sector so that the responsibility for sustainable management can be fairly apportioned between sectors. Up until the present time the commercial sector has had to bear the prime responsibility for making any catch adjustments for sustainability management.

The recreational catch has been increasing over about the last fifty years but only reached 3.9 per cent of the total catch in 2002/03. In their preliminary submission, Recfishwest pointed out that as the Western Australian population grows, new fishers will want to participate in this fishery so the increase in recreational take can be expected to continue.

Nevertheless, the principles of Integrated Fisheries Management make it clear that specific shares for each sector should be determined. The stakeholders' views on this allocation reflected their interests but did not suggest any specific criteria that should be used to determine those shares.

This IFM allocation is seen as an essential first step that will facilitate progress toward the objectives outlined in the IFM Government Policy. The Government's policy recognises the problem of lack of information on social, economic, cultural and environmental factors (see Guiding principle viii, section 3.1.2).

Note 4.

The IFAAC would welcome comments on relevant economic, social, cultural and environmental issues and how these might be incorporated into IFM.

3.4 Description of the Fishery

The western rock lobster resource extends primarily over the continental shelf area off the west coast of Western Australia between Exmouth Gulf and Augusta. Exmouth Gulf and Augusta are the northern and southern boundaries of the commercial fishery – the West Coast Rock Lobster Managed Fishery (WCRLMF).

The WCRLMF is the area over which the IFAAC is providing advice on western rock lobster allocations. Although western rock lobster are found in lower densities along the south coast to the east of Augusta and occasionally north of Exmouth the committee will not be making allocations for that component of the resource as part of this process.

The WCRLMF is the most valuable single species fishery in Australia (worth between \$A200 and \$A400 million annually) with an average catch of around 11,000 tonnes.

To fish commercially in this fishery, a person must hold a WCRLMF licence. The number of these licences has been limited since 1963, when licence numbers and units of entitlement were frozen.

The commercial fishery is divided into three Zones – A, B and C. Zone A licensees may fish in Zone B from 15 November to 15 March.² The fishing season in the WCRLMF runs from 15 November to 30 June the following year, with Zone A open from 15 March to 30 June.

Commercial fishers are only permitted to use baited pots, which they usually haul daily.

The commercial fishery is managed using input controls. The primary management method is a limit on the total number of pots, which places an overall cap on effort. Entitlements are transferable under what is known as an Individually Transferable Effort system.

Holders of recreational rock lobster licensees are also permitted to take western rock lobster within the boundaries of the WCRLMF. In practice, the majority of recreational rock lobster fishing is targeted to near shore waters of less than 18 metres in depth, whereas the commercial fishery operates over the entire area. Recreational fishers may use pots or dive for lobsters, except in the Abrolhos Islands (Zone A) where pots are the only permissible method.

Note 5.

The IFAAC is providing advice on allocations of the western rock lobster resource over the area that exists within the boundaries of the West Coast Rock Lobster Managed Fishery only (i.e. between Exmouth Gulf and Augusta extending seawards for 200 nautical miles).

3.5 Description of the Sectors

3.5.1 Customary

The Minister for Fisheries used the term “customary fishing sector” to:

... describe the activity of indigenous people who have a right (in accordance with Aboriginal law and customs) to fish in a customary manner.

He added to the above description that:

Customary Fishing applies within a sustainable fisheries management framework to persons of Aboriginal descent; fishing in accordance with the traditional law and custom of the area being fished; and fishing for the purposes of satisfying non-commercial personal, domestic, ceremonial, educational or communal needs.

The National Native Title Tribunal (NNTT, 2005) drew attention to the distinction the Department of Fisheries makes between customary fishing by Aboriginal people and recreational fishing by Aboriginal people. It notes that under the Department’s construct of customary fishing, Aboriginal people are:

... taking marine resources for practices that reinforce cultural identity and tradition

and in Aboriginal recreational fishing, they are:

... exercising the same right as non-indigenous Australians to take fish, governed by the same laws and regulations.

The NNTT in their submission suggested that indigenous acceptance of what can be taken to be a narrow definition of what customary fishing represents was contingent on other strategies being in place to assist indigenous people to take advantage of opportunities in the marine sector. The NNTT also advised the IFAAC that the appropriateness of such a definition was part of ongoing discussions and negotiations at a national and state level.

² The industry is currently considering a change to the period to 15 November to 1 March.

The IFAAC accepts the view that a distinction can be drawn between customary fishing and recreational fishing by indigenous people; and that not all indigenous recreational fishers are fishing for customary purposes.

Note 6.

The IFAAC notes the Ministerial advice referred to in section 3.2.1 and has included recreational fishing by indigenous people, as distinct from customary, as part of the recreational allocation.

3.5.2 Recreational

Recreational fishing for rock lobster requires either a rock lobster recreational licence or an umbrella licence permitting access to all licensed recreational fishing activity.³ There is no limit to the number of recreational licences issued.

Licences are issued for a 12-month period from the date of issue on application and payment of \$31 for a specific rock lobster licence, and \$72 for an umbrella licence. In 2002–03, about 40,000 rock lobster recreational licences (around 27,000 specific and 13,000 umbrella) were issued, with about 71 per cent being used. Anyone other than holders of commercial fishing licences may apply for a recreational rock lobster licence.

The primary method used by recreational fishers to take western rock lobster is by pots; however recreational divers take about a third of the recreational catch. Pot fishers spend more time fishing than divers, although the catch rate of divers is about twice that of potting (FMP No.192, p.55).

Charter boat operators provide a platform for recreational divers to take rock lobsters. The same limits of eight lobsters per licensee per day and 16 lobsters per boat apply to charter boats and other recreational boats. The take of western rock lobster from dive charter boats is very small.

Further details of the recreational sector are available from FMP No.192.

3.5.3 Commercial

The IFAAC considers the commercial sector to comprise those operations that are of a commercial nature. For the western rock lobster resource, commercial operations include the wild capture sector and the aquaculture sector.

3.5.3.1 Commercial fishing sector

Commercial fishing for western rock lobster is managed under *The West Coast Rock Lobster Managed Fishery Management Plan 1993* (in conjunction with the *Fish Resources Management Act 1994* and regulations), with fishers having to hold a West Coast Rock Lobster Managed Fishery Licence.

There are currently 601 licensees, of which 545 operated their licence in 2004–05. There are 69,282 units allocated to licensees. Under current management arrangements this allocation allows for 56,813 pots to be used by licensees.

For each zone, the numbers of licences and pots that can be used are given in the Table 1 below.

Table 1: Numbers of Managed Fisheries Licences (MFLs) and Pots by Zone for the West Coast Rock Lobster Managed Fishery

Zone	MFLs	Pots
A/B	300	27,509
C	301	29,304
Total	601	56,813

Commercial fishery licences are renewed annually after licensees have paid the annual access fee. The fee was \$134 per unit for the 2004–05 season. Further details of the commercial fishing sector are provided in FMP No.192.

³ Aboriginal persons are not required to hold a recreational fishing licence under s. 6 of the FRMA

3.5.3.2 Aquaculture

The Department of Fisheries has made no reference in FMP No.192 to the aquaculture of western rock lobster. However, the Department has released Fisheries Management Paper No.122 *Opportunities for the Holding/Fattening/Processing and Aquaculture of Western Rock Lobster (Panulirus cygnus)* (DoF, 1998), which was designed to serve as a policy framework for dealing with future applications to hold/fatten/process and aquaculture western rock lobster and administer existing practices.

Subsequently, in 2004 the Department of Fisheries released Ministerial Policy Guideline No.20 *Assessment of Applications for Authorisations with Regards to Rock Lobster Aquaculture* (Department of Fisheries, 2004), which outlined matters the Minister considered important when assessing applications for authorisations and imposing licence conditions.

As the most promising approach to western rock lobster aquaculture is the grow-out of puerulus collected from the wild, *Ministerial Policy Guideline No. 20* made reference to the quantity of puerulus that could be harvested in any year (maximum of 300,000) and under what authority (Ministerial exemption).

There is no history of access to western rock lobster for a commercial aquaculture operation in Western Australia and the industry is yet to develop. The present focus of activity is on research and development. The Aquaculture Council of Western Australia, in its submission to the IFAAC, proposed that all IFM fish stock allocations need to make provision for both brood and seed stock.

As it may be some time before a viable commercial operation is established, and the most promising approach is through the collection of puerulus – a totally protected fish under the FRMA, the IFAAC does not intend to recommend an allocation to the aquaculture sector.

Note 7.

The IFAAC notes that historically there has been no access to western rock lobster for commercial aquaculture purposes and arrangements for access are contained in *Ministerial Policy Guideline No. 20* (Department of Fisheries, 2004).

4 CATCH INFORMATION

The principal source of data that the IFAAC has used in considering its advice on allocations is *FMP No.192*. Important additional information has become available to the IFAAC since the release of *FMP No.192* and is given in the Department of Fisheries' paper entitled *Best Estimates of the Western Rock Lobster Recreational Catch* (Appendix F).

The Department of Fisheries has also provided estimates of the recreational proportion of the catch, given certain assumptions which are described in the paper entitled *Long-Term Growth Trends In Recreational Rock Lobster Catch* (Appendix G).

4.1 Customary

The Department of Fisheries did not provide any specific information as to customary fishing (see section 3.4.1 for definition) for western rock lobster in *FMP No.192*.

The NNTT has kindly provided to the IFAAC a research report on indigenous fisheries on the west and south-west coasts (Wright, 2005). An appendix to that report contained references to customary fishing in the south-west of Western Australia. Except for one single and relatively recent reference, there was no specific mention of the take of western rock lobster.

The IFAAC therefore has no specific information available to it at this stage on the catch from customary fishing.

Note 8.

The IFAAC welcomes further information as to the customary take of western rock lobster through submissions on this report. The IFAAC notes that the demands of IFM (IFM Government Policy, paragraph 18, Appendix A) will necessarily require more research and monitoring of the customary take.



4.2 Recreational

The recreational catch of western rock lobster is described in *FMP No.192*, mostly in terms of the data obtained from the mail surveys that have been carried out from 1986/87.

Data were available from 1986/87 to 2003/04 at the time of preparing this report. However, it was stated in *FMP No.192* that it was believed that a more accurate estimate of the recreational catch was provided by the phone diary survey method which had been carried out on two occasions – 2000/01 and 2001/02 – and which is being carried out again in 2004/05.

At the request of the IFAAC, on 10 May 2005 the Executive Director of the Department of Fisheries provided the committee with a paper from the Research Division – *Best Estimates of the Western Rock Lobster Recreational Catch* (Appendix F). This research paper indicated that the mail survey over-estimated the recreational catch by a factor of 1.90 (SE: 0.3). It is argued that this over-estimation results from a combination of recall and non-response bias.

The Department's position is that:

... the best estimates of the recreational catch of western rock lobster over the last 17 years are obtained by using the mail survey data which has been suitably adjusted using the calculated level of bias.

The estimates of the recreational catch by zone using the adjusted data are given in Table 2 opposite.

Table 2: Recreational catch estimates in tonnes, from each zone within the Western Rock Lobster Managed Fishery from 1996/97 to 2003/04

Season	Zones		
	Zone A/B	Zone C	Total
1996/97	41	121	161
1997/98	63	192	255
1998/99	61	268	329
1999/00	53	340	392
2000/01	38	259	296
2001/02	53	234	287
2002/03	63	406	468
2003/04	59	369	428

The IFAAC notes that because these surveys are based on randomly sampling recreational licence holders, the recreational catch may be slightly underestimated, as indigenous recreational fishers are able to take western rock lobster without holding a licence.

4.3 Commercial

The commercial catch information is given in *FMP No.192*. The sources of data for the commercial fishery are statutory monthly returns that are validated against voluntary daily logbooks (filled out by around a third of the fleet) and information provided by rock lobster processors. The commercial catch by zone for the period since 1997/98 is provided in Table 3 over the page (source: *FMP No.192*, Table 4, p.52⁴).

⁴ The catch data for 1996/97 has been added to this table for consistency and Big Bank included in the Zone B catch.

Table 3: Commercial fishing catches, in tonnes, from each zone within the Western Rock Lobster Managed Fishery from 1997/98 to 2003/04

Season	Zones			
	Zone A	Zone B	Zone C	Total
1996/97	1,824	3,619	4,458	9,901
1997/98	1,792	3,582	5,104	10,478
1998/99	1,945	4,197	6,867	13,009
1999/00	1,714	4,197	8,203	14,433
2000/01	1,672	3,504	6,089	11,273
2001/02	1,634	2,815	4,517	8,983
2002/03	1,713	3,254	6,420	11,387
2003/04	1,884	3,520	8,160	13,564

4.4 Catch shares

The following table (Table 4) provides data on the recreational catch as a proportion of the total catch for the period from 1996/97–2000/01 (full data is provided in Appendix F).

Table 4: Estimated recreational western rock lobster catch as a percentage of the total catch for zones A/B and C and all zones.

Season	Recreational % of the catch		
	Zone A/B	Zone C	ALL Zones
1996/97	0.7	2.6	1.5
1997/98	1.2	3.6	2.4
1998/99	1.0	3.8	2.5
1999/00	0.8	4.0	2.6
2000/01	0.7	4.1	2.5
2001/02	1.2	4.9	3.1
2002/03	1.2	5.9	3.9
2003/04	1.1	4.3	3.1

Source: Best estimates of the western rock lobster catch (Appendix F)

The estimates of the recreational proportion of the total western rock lobster catch in the reference period, 1996/97–2000/01 (IFM Government Policy, paragraph 19, Appendix A) for all regions has ranged between 1.5 per cent and 2.6 per cent, with an average of 2.3 per cent (Table 4).

For the three seasons that data is available since 2000/01, the recreational proportion of the catch has increased to between 3.1 per cent and 3.9 per cent of the total catch. The recreational proportion of the catch is predicted to decline from 3.5 per cent to 2.6 per cent over the period 2004/2005 to 2006/07 (Appendix F).

The estimates of the recreational proportion of the catch in the reference period for Zones A/B combined have ranged between 0.7 per cent and 1.2 per cent, with an average of 0.9 per cent (Table 4). For Zone C the estimates have ranged between 2.6 per cent and 4.1 per cent, with an average of 3.6 per cent.

Recreational fishers in Zone C take a higher proportion of the total catch than in Zones A/B combined. On average, over the period 1997 to 2001 recreational fishers took 3.6 per cent of the catch in Zone C, compared with 0.9 per cent in Zones A/B. This is to be expected, given that the majority of the population lives in the Perth metropolitan area (within Zone C).

For the three seasons that data is available since 2000/01, the recreational proportion of the catch in Zone C has ranged between 4.3 per cent and 5.9 per cent, and in Zones A/B between 1.1 per cent and 1.2 per cent.

The recreational proportion of the catch is predicted to decline from 5.4 per cent to 4.7 per cent in Zone C over the period 2004/05 to 2006/07 (Appendix F). The expected proportion in Zone A/B is stable at between 0.9 per cent and 1 per cent.

The IFAAC notes that most of the recreational fishing activity is in waters shallower than 18 metres.

Incorporating the adjustment for the phone diary method, the recreational catch has been estimated to be approximately 12.5 per cent of the commercial catch in the Perth metropolitan and Rottnest areas waters, increasing to 35 per cent of the commercial catch in waters shallower than 18 metres (FMP No.192, p.59).



5 ALLOCATION OPTIONS

In determining its draft recommendations on the allocations, the IFAAC was mindful that its recommendations are being made for the purposes outlined in section 3.1.2 and not for sustainability purposes which the Minister for Fisheries and the Executive Director have responsibility for under the *Fish Resources Management Act 1994* (FRMA).

As a precursor to providing its advice on the actual allocations, the IFAAC considered that it needed to resolve the following issues, as they had been raised by stakeholders in their submissions:

- the spatial scale of allocations at the macro level (i.e. should the allocations be by zone or all zones combined?);
- the question of whether there should be small-scale and/or temporal allocations; and
- the method of setting allocations.

Each issue is discussed below.

5.1 Spatial allocation options

Currently, the commercial fishery is divided into three zones for management purposes: Zones A and B (in the north) and C (in the south). Commercial fishing entitlements are fixed for the northern and the southern zones.

Generally, the same management rules apply to all three zones apart from a few exceptions, such as the maximum size rule for western rock lobsters (105mm in the north and 110mm in the south).

The IFAAC understands that this situation is likely to change in the near future when proposed changes to reduce fishing effort by about 15 per cent in the north are expected to be introduced for sustainability reasons. These changes in management for the north,

separate to that of the south, represent a significant shift in management direction – moving from a whole-of-fishery basis to management on a zone basis.

The recreational fishery for western rock lobster is not managed by zone. The same recreational rules apply across the whole of the commercial fishery apart from the exception mentioned above.

The metropolitan coast from Mandurah to Two Rocks would appear to best represent the major western rock lobster recreational fishery. However, the IFAAC decided that the creation of a separate fishing region for the area would impose substantial problems for commercial fishers and the Department of Fisheries as the management agency.

In the IFAAC's view, at the macro scale, the pragmatic options are to either set the allocations across the whole of the West Coast Rock Lobster Managed Fishery or to provide for an allocation for two regions, i.e. by a northern region (Zones A/B) and a southern region (Zone C). Each option is discussed below.

5.1.1 Allocation over the whole of the west coast rock lobster managed fishery

Under this option, proportional catch shares would be set across the whole of the fishery.

The Department of Fisheries has a preference for this option because it has the following advantages:

- Management can respond efficiently and effectively to circumstances as they change;
- Costs could be contained at a reasonable level – other options are more expensive to implement;
- There would be minimal disruption to current management to implement allocations;

- There would be minimal additional recreational fishing information requirements as information would only be required at a whole of fishery level;
- Recreational licensing does not need to be carried out on a zone basis; and
- Anti-competitive issues do not arise.

None of the major stakeholders supported this option.

5.1.2 Allocation based on regions

Under this option, proportional catch shares would be set for the northern region (Zones A/B) and the southern region (Zone C) of the West Coast Rock Lobster Managed Fishery.

Of the total recreational catch (across the whole West Coast Rock Lobster Managed Fishery) using the 2003/04 catch estimates (Table 2, section 4.2), 14 per cent is taken in the north and 86 per cent is taken in the south⁵.

It could be expected that with a growing population in the Perth metropolitan area, the proportion of the recreational 'take' in the south will be greater than 86 per cent in the future.

Allocations by zone have the advantage of limiting the impact management action in one region would have on recreational fishers in the other region.

The IFAAC anticipates that the move towards separate management by zone for the commercial fishery will continue and allocations by zone would be conducive to this management approach. The IFAAC also identified that management by zone would be more likely to facilitate the development and implementation of re-allocation mechanisms over time.

For instance, under a scenario where the recreational sector sought an increased catch share in Zone C as the result of increasing participation and needed to acquire access to commercial fishery entitlements it would be appropriate to remove the commercial entitlements from that zone.

The key commercial and recreational representative bodies support an allocation by region.

The Department of Fisheries in its submission (Appendix C for source) commented that an allocation by zone is:

... more complicated to manage in that separate estimates of the recreational catch would be needed for the north and south regions. It also has the disadvantage that future management may need to be regionally (zone) based rather than a whole-of-fishery.

In the verbal submission by Mr Peter Millington (Director of Fisheries Management Services) it appeared to the IFAAC that, notwithstanding the comment above, the main concern with the Department of Fisheries was the creation of a multiplicity of smaller and novel zones, rather than the major zones on which the commercial fishery is already based.

The IFAAC has been advised by the Department of Fisheries that it would incur additional costs of about \$15,000 per annum as a consequence of allocations being made by regions.

Discussion

Although the IFAAC does not have a role in managing allocations, as this is an operational matter for the Department of Fisheries, the management implications of allocations are a practical consideration that the IFAAC needs to be aware of in determining its advice on allocations.

⁵ The Department of Fisheries in their submission reported that the average has been 20% in the North and 80% in the South over the last 10 years

In moving to a more complicated management model (two regions) for recreational fishing, the committee needed to be convinced that the advantages were sufficient to outweigh the disadvantages. The advantages of moving to a regional allocation are that it is:

- Consistent with the management arrangements that already exist for the commercial fishery;
- Complements the draft decision rules framework for the fishery which relates to managing the breeding stock above a certain level in each zone;
- Based on the comments by WAFIC and Recfishwest to the IFAAC, it is likely that – in the longer term – it may be easier to implement a reallocation mechanism under regional management; and
- It has the support of the major stakeholders.

Some of the disadvantages of moving to a regional allocation are:

- There could be additional costs mainly associated with monitoring and compliance of around \$15,000; and
- In the long term recreational licensing may become more complicated.

Given the relative advantages and disadvantages, the IFAAC concluded that at this stage an allocation by region was its preferred spatial scale of allocation at the macro level.

The IFAAC acknowledges that neither option addresses the issues of temporal and spatial competition at a local/regional level.

Recommendation 1.

That allocations should be over two regions of the West Coast Rock Lobster Managed Fishery – the northern region (Zone A/B) and the southern region (Zone C).

5.1.3 Small scale spatial and/or temporal allocations

Under its terms of reference the IFAAC is required to, among other things, provide advice on strategies to overcome allocation and access issues arising from temporal and spatial competition for fish at a local/regional level (see section 3.1.2).

All major stakeholders have referred to the issue of spatial and temporal competition in Zone C for inshore “white” lobsters during November/January as a major resource sharing conflict. In a comment in its submission, Recfishwest provided the following description of the issue:

...that the resource sharing issue with western rock lobsters is essentially an inshore, C Zone, “whites” problem.

The Western Rock Lobster Council (WRLC) also identified:

... significant spatial conflict during the “whites” run in C Zone...

One obvious strategy to overcome competition or this type of resource sharing issue, given that virtually all recreational lobster fishing is carried out in only a small part of the area fished by the commercial industry and in relatively short periods of time, is to use spatial and temporal closures to eliminate the conflict.

Recreational lobster fishing is carried out in water less than 18 metres deep and is concentrated on the Perth metropolitan coast, plus some much smaller concentrations of activity at Jurien Bay, Dongara and Geraldton.

If recreational fishers continue to operate in a small part of the fished area, they can be expected to increasingly compete with one another other so that even over a long period it is not likely they will take a large proportion of the catch.

The Recreational Fishing Advisory Committee has proposed that the IFAAC should consider implementing the following small spatial closures as a way of resolving resource-sharing conflicts:

- a three-nautical mile closure between Hillarys and Two Rocks;
- a closure around Boullanger Island (off Jurien Bay); and
- increasing the Rottneest closure to 1,500 metres.

In its submission, Recfishwest requested the IFAAC to propose:

...explicit directions to accommodate the inshore take of the less valuable “whites” in the early part of Zone C by spatial management. ... Recognition must be given to the importance of recreational fishing near major access points, especially in Zone C.

Given the very seasonal nature and limited area of recreational fishing, it may be possible to introduce spatial closures such as those described above for limited periods of time. In return, recreational fishers could seek to introduce other management measures to restrict their fishing effort if it proved that they were exceeding their allocation at the regional level.

The Department of Fisheries’ advice is that spatial and temporal solutions would be costly to implement from a compliance viewpoint, given that commercial western rock lobster fishing vessels currently are not required to have a Vessel Monitoring System (VMS) installed and generally there is a lack of global positioning devices on recreational fishing vessels.

Given the submissions from most stakeholder groups, the IFAAC has formed a view that genuine resource sharing conflict does exist in some inshore areas, particularly in Zone C in the November to January period. The IFAAC believes there may be merit in supporting recreational fishing priority areas created by spatial or temporal exclusions of commercial fishers. However, FMP No.192 does not provide sufficient information to assess the impact of introducing the closure.

The IFAAC also noted that there has not been a thorough analysis of the management implications and compliance costs.

In the absence of the above information, the IFAAC concluded that it would be inappropriate to recommend fine scale spatial and/or temporal allocations in its initial allocation recommendation. Such a decision could have significant impacts on stakeholders and the requirement to investigate the merits of each case could significantly delay the implementation of IFM for the western rock lobster resource.

The IFAAC’s view is that once the initial allocation under IFM has been determined, local conflicts such as those on in-shore reefs near population centres and the “whites run” in November/January are more likely to be able to be resolved. The IFAAC expects that when sectors are assured of their share of the resource that conflict such as the “whites run” can be resolved through negotiation.

Both the Western Australian Fishing Industry Council (WAFIC) and the Western Rock Lobster Committee (WRLC) support this view, stating that initial allocations:

...should (eventually) act to create incentives for sector groups to achieve their aspirations through better use of allocated shares rather than constantly lobbying for Government intervention to expropriate other sector’s shares.

Recfishwest, in addressing the principles for resource allocation, provides a useful insight on this issue.

It stated that:

The extent to which the IFAC (sic) considers the spatial and temporal implication of its determination needs careful consideration. While the allocation process must be aware of issues such as the importance of the inshore “whites” rock lobster catch in C zone as a part of the allocation question, the extent to which this is the role for applied management after the allocation has been made has yet to be fully defined.

Both WAFIC and the WRLC supported and encouraged the development of forums where genuine negotiations can occur between parties to resolve resource sharing conflicts, and for sectors to maximise the benefits from their allocation. The Recreational Fishing Advisory Committee (RFAC) referred to some of the shortcomings in the current consultative framework under IFM.

Recommendation 2.

That the western rock lobster management advisory process be reformed so as to encourage all sectors (commercial, recreational and indigenous) to discuss and negotiate inter-sectoral issues such as spatial and temporal separation, as well as processes for resolving intra-sectoral management issues. Outstanding matters as of 2009/2010 should be referred to the IFAAC to provide the Minister with advice on an appropriate resolution.

5.2 Proportional catch share options

There are a number of methods that can be used to determine the allocations for the commercial and recreational sectors at the regional level. The following four options were considered by the IFAAC:

1. at the average proportion over the period 1997–2001 (reference period);
2. at the average proportion of the last three seasons (*status quo*);
3. at the proportion it is expected to be in 2009/2010, allowing for growth in line with the long-term trend in recreational catch share; and
4. at a proportion which will allow for long-term growth in population and estimated growth in recreational activity.

Each of these options is discussed in the context of what the allocations would be at a regional level and all regions combined.

5.2.1 Option 1 – at the average proportion over the period 1997–2001

The IFM Government Policy states that catch shares should be formalised over the period 1997–2001 and an allocation based on this criteria could be considered to be consistent with the policy (paragraph 19 Appendix A). Using the best available data, this would equate to the following allocations for the recreational sector for each of the regions (see Table 4, p19):

South	3.6 per cent
North	0.9 per cent
Overall	2.3 per cent

Introducing these allocations could be quite disruptive for the recreational sector in the southern region, as the Department's prediction is that without the implementation of IFM the recreational sector's proportion of the catch in the southern region would be 4.7 per cent in 2006/07 (Table 2 Appendix F).

To manage the recreational sector to 3.6 per cent (which is a 23 per cent reduction in proportional share, based on the estimated 2006/07 proportion) would require an immediate and substantial reduction in recreational fishing effort.

As the Department's predicted recreational proportional share for the "northern region" in 2006/07 (0.9 per cent) is the same as the allocation under this option, it is likely that no change in recreational fishing effort would be required for the northern region in 2006/07 if this option were adopted.

The WRLC has proposed this option be adopted for the initial allocation, and this option is also supported by WAFIC. However, the WRLC acknowledges that to facilitate a smooth transition to IFM there:

... may be a case to reallocate a small percentage of the commercial sector's share of lobsters in the southern zone to the recreational sector.

5.2.2 Option 2 – at the average proportion of the last three seasons (2001/02–2003/04)

As the Department of Fisheries proposes a three-year average to monitor the recreational catch, this average could be used to set the proportion now as it accounts for recent increases in recreational catches and represents the *status quo*. The average of the last three seasons (2001/02 to 2003/04 Table 4, p19) would result in the following allocations for the recreational sector for each of the regions:

South	5.0 per cent
North	1.2 per cent
Overall	3.4 per cent

The period 2001/02 to 2003/04 includes the 2002/03 season in which the recreational sector (in both regions) has taken the highest proportion of the catch that it has taken historically, as a proportion of the overall catch.

Over the next two seasons (2005/06 and 2006/07) the overall catch is predicted to decline, as is the recreational proportion of the catch (from 3.3 per cent to 2.6 per cent). However, in the southern region the recreational proportion of the catch is expected to increase in 2005/06 to 5.6 per cent and then decline to 4.7 per cent in 2006/07 (Table 2, Appendix F).

In the northern region the recreational proportion of the catch is expected to decrease in 2005/06 to 1.0 per cent and then decline to 0.9 per cent in 2006/07.

Allocations based on this option would not seem to disadvantage the recreational sector in the 2006/07 season.

If this allocation option were introduced for the 2006/07 season, the commercial sector, based on the Department's estimate, would exceed its allocation in that season. Given the requirement under IFM for a sector to be managed within its "prescribed allocation" (Guiding principle vii, see section 3.1.2) some adjustments may be necessary for that period.

5.2.3 Option 3 – at the proportion catch shares are expected to be at the introduction of a re-allocation mechanism (2009/2010)

The difficulty with the options above is that their introduction in 2006/07 will result in the need for immediate management intervention, ahead of the development and agreement between the sectors and Government on a reallocation mechanism. It should also be noted that the commercial fishery is in the middle of a major management review. The review is expected to be completed by the end of 2006.⁶ If the outcome of the review is that the fishery should move from an input to an output management regime, then it is likely to take several years to implement such a change.

The IFAAC believes in the principle of endeavouring to avoid recommendations that would have the effect of immediately and significantly impacting on a sector before there is a re-allocation mechanism available and this has relevance to the western rock lobster allocation.

The IFAAC is of a view that a pragmatic and incremental approach, in accordance with the principles developed earlier, would be to delay the implementation of a proportional allocation decision until an appropriate re-allocation mechanism is adopted.

The growth in participation in recreational rock lobster fishing has meant that the recreational proportion of the catch is already significantly higher than during the 1997/2001 reference period.

The IFAAC has received advice from the Department of Fisheries that the recreational proportion of the total catch in Zone C will be relatively stable, and that the recreational catch in absolute terms will be relatively low, until 2007/2008. Given this advice, it is the IFAAC's view that it is likely that any adjustment to the commercial sector's fishing effort prior to 2009/2010 would be the result of an increase in commercial effort rather than an increase in recreational effort.

⁶ In March 2002 the Minister informed the industry of the review process and timeframes.

Box 2 Alternative method of calculating the catch shares by region in 2009/2010

The following method is an alternative way of estimating the proportional catch shares by region in 2009/2010 to that used by the Department of Fisheries. The method is based on the Department's 2009/2010 estimate of the catch proportion for all regions combined (Appendix G) and the following information extracted from FMP No.192 and other sources.

Information

The estimated recreational proportion of the catch for all regions in 2009/2010 = 4.9 per cent. (Table 1, Appendix G)

Over the last 10 years:

The average total catch from all sectors = 11,500 tonnes

The estimated average commercial catch = 10,936 tonnes

The estimated average recreational catch = 564 tonnes

The average proportion of the commercial catch taken in each region by the commercial sector over the period 1997 to 2004 was:

For the northern region – 46 per cent

For the southern region – 54 per cent

The recreational catch in 2009/2010 using the estimate in Table 3 from Appendix G would be:

For the northern region – 53 tonnes

For the southern region (564t – 53t) – 511 tonnes

Estimates

Based on the above information the commercial catch can be estimated for each of the regions by multiplying the estimated total catch of each sector by the estimated regional proportion. The recreational catch proportion for each region can then be calculated by dividing the recreational catch by the total catch.

	North	South	Combined
Commercial catch (tonnes)	5,031	5,906	10,937
Recreational catch (tonnes)	53	511	564
Total Catch (tonnes)	5,084	6,417	11,501
Recreational proportion (%)	1.0	8.0	4.9

This method of estimating the proportion of the recreational catch provides higher estimates of the recreational catch proportion by region when compared with the modelling techniques used by the Department i.e. for the northern region 1.0% compared with 0.9%, and for the southern region 8.0% compared with 7.5%.

Source: Department of Fisheries, Government of Western Australia

The IFAAC has therefore proposed proportional allocations for 2009/2010 as this is the first year in which a re-allocation mechanism could be reasonably expected to be available. This timeframe is within the five-year timeframe specified by the IFAAC (see section 3.3, point 6).

It should be noted that the concept of setting a target above the 1997/2001 level is supported by both Recfishwest and RFAC.

Based on the analysis provided by the Department of Fisheries (Appendix G) the proportion of the recreational sector's catch in 2009/2010 would be:

South	7.5 per cent
North	0.9 per cent
Overall	4.9 per cent

The IFAAC notes that there are other methods that could be used to estimate the proportion of the recreational catch in each of the regions in 2009/2010. An example of an alternative method is provided in Box 2.

Although this option is likely to result in a lower percentage allocation under IFM for the commercial sector than options 1 and 2, effective implementation of IFM under it will, in the long term, improve the certainty surrounding management arrangements for the commercial sector.

For the period up to 2009/2010 the commercial fishery should not be disadvantaged, provided there is no significant decrease in the commercial sector's effort, as the recreational proportion of the total catch is predicted to decrease at least for the next two seasons.

The IFAAC is of the view that Option 3 is unlikely to impact significantly on the commercial fishery until 2009/2010. Although there is a difference between relative catch shares in 1997–2001 to that projected for 2009/2010, there is an offsetting benefit to the commercial sector from improved certainty as to its catch share.

Given the above, the IFAAC has formed the view that Option 3 does not appear to require a full investigation of “optimal benefits” (see section 3.3) relating to the shift in catch shares.

5.2.4 Option 4 – at a proportion which will allow for long term growth in population and estimated growth in recreational fishing activity.

Recfishwest has proposed that the recreational sector be allowed to grow incrementally until it reaches a proportional take of twice its current “real” catch share or its projected catches after 20 years, whichever is the greatest, to accommodate the natural growth in the recreational sector. Based on the latest information on catches from the Department of Fisheries, an overall allocation of 8 per cent of the sustainable harvest level for the resource would be equivalent to about twice its current catch share.

The RFAC has proposed a higher initial allocation of 10 per cent for recreational fishers across the fishery, or alternatively if there is an allocation by zones, of 20 per cent of the catch in Zone C and 5 per cent of the catch in Zone B.

Recfishwest proposes that should recreational catches not meet these levels, the commercial sector would not be expected to pay a contribution for the “share” it would have caught.

Implementation of Recfishwest's and RFAC's proposals would result in the following allocations:

	Recfishwest	RFAC
South	Not available	20 per cent
North	Not available	5 per cent
Overall	8 per cent	10 per cent

The IFAAC was mindful that any target needed to be a realistic and meaningful so that the allocations would represent the likely sector shares within a reasonable timeframe (say five years). If the target were set too high – for example 8 per cent (Recfishwest) or 10 per cent (RFAC) – on current growth projections the implementation of IFM would effectively be deferred for many years.

This is not seen by the IFAAC as being consistent with IFM principles or the Government’s intention in relation to the implementation of IFM.

In addition, it is arguable that the Recfishwest and RFAC propositions would amount to a significant change to catch shares compared with the 1996/97–2000/01 reference period. Accordingly, any such significant change would need to be fully justified in terms of achieving an “optimal benefit to the Western Australian community” (Guiding principle viii, see section 3.1.2.). As noted above, *FMP No.192* only includes general information as to social, economic and other issues.

Discussion

A summary of each of the four options is provided in Table 5 below:

Table 5: Recreational sector’s proportional allocation for each allocation option by region.

Region	Recreational Sector’s Proportion of the Catch (%)				
	Option 1 (96/97–00/01) WAFIC & WRLC	Option 2 (01/02–03/04)	Option 3 (2009/2010)	Option 4	
				Recfishwest (20 years)	RFAC
South	3.6	5.0	7.5	NA	20
North	0.9	1.2	0.9	NA	5
Overall	2.3	3.4	4.9	8	10

Of the four options discussed above, the IFAAC prefers Option 3, that is setting the proportional catch shares at what they are expected to be in 2009/2010. This represents an incremental and pragmatic approach that produces an allocation that will be binding in a reasonable timeframe, while allowing a transition period that should not significantly disadvantage either sector and the development and implementation of a reallocation mechanism.

Setting the allocation at this level should create the environment that will subsequently encourage negotiation between sectors to address resource-sharing conflicts, such as the competition on the “whites run” in Zone C.

Recommendation 3.
Allocations should be made on the predicted proportional catch shares in 2009/2010.

6 ALLOCATIONS

6.1 Customary

The IFAAC has taken a pragmatic approach to determining the allocation for customary fishing, given the advice from the Minister for Fisheries (Appendix D) and the policy of, on one hand, making a priority allocation and, on the other, the lack of data available on the customary fishing for western rock lobster.

The Department of Fisheries has estimated the proportion of indigenous people that reside in coastal areas between Kalbarri and Augusta to be about 1.7 per cent. Assuming that the indigenous population participate in recreational fishing at the same rate as the non-indigenous population, the take by indigenous people would be equivalent to about 1.7 per cent of the recreational take.

Part of this 1.7 per cent would be attributed to recreational fishing by Aboriginal people, while part would be attributed to customary fishing by Aboriginal people.

The part of the 1.7 per cent attributed to customary fishing by Aboriginal people is estimated by the Department of Fisheries to be approximately 10 per cent, based on departmental officers' discussions with stakeholders. In other words, it is assumed that 10 per cent of rock lobster fishing by Aboriginal people is for customary purposes, while the other 90 per cent is for recreational purposes.

An allocation of 0.17 per cent of the recreational proportion of the catch would be equivalent to 0.0085 per cent of the total catch, assuming an allocation of 4.9 per cent to the recreational sector under option three of Table 5.

The IFAAC believes that notwithstanding Guiding principle ix (see section 3.1.2), as this a very small percentage of the western rock lobster catch it should

adopt a pragmatic approach to setting the allocation for customary fishing, in accordance with the IFAAC's Additional Guiding Principle 1 (see section 3.3).

The principle that the IFAAC has adopted to deal with this matter is to make allocations as a *quantity* of the catch where the take is less than 0.1 per cent of the proportion of the total catch. In this case, as the catch fluctuates considerably for western rock lobster, the average catch over the last 10 years of 11,500 tonnes was considered to be appropriate to use as a basis to calculate the allocation.

Using this method, an allocation of 1 tonne (0.0085 per cent of 11,500 tonnes) would be the initial priority customary allocation for the indigenous sector, noting that this will be subject to review as more information becomes available on customary fishing by indigenous people.

In the absence of better evidence the IFAAC considers this would be a reasonable starting point for an initial allocation for customary purposes for western rock lobster. The IFAAC acknowledges that other species may be attributed a different proportion for customary fishing. In making a judgment about this proportion, in this case the IFAAC's focus was on establishing an allocation in the first instance, which could be validated over time and readjusted if necessary.

It is important to note that as the customary fishing allocation (as recommended) is a separate and very small allocation that is currently unreported, it will have no substantive impact on the initial allocations of the western rock lobster resource to the commercial and recreational fishing sectors.

Note 9

That where a sector's allocation is less than 0.1 per cent of the total catch, the IFAAC has adopted the approach of specifying the allocation by *quantity* rather than proportion.

Recommendation 4.

The customary fishing initial allocation should be one tonne.

6.2 Recreational

The Department of Fisheries has advised the IFAAC that the recreational proportion of the catch is predicted to be 4.9 per cent overall and 0.9 per cent in the northern region and 7.5 per cent in the southern region in 2009/2010 (Table 5). This is 0.3 per cent below the current recreational proportion of the catch (Option 2 in Table 5) in the north and 2.5 per cent above in the south. Whilst the allocation allows for some growth, it is anticipated that these allocations could be expected to require management to reduce recreational effort or shifts in sector shares within a reasonable timeframe.

Recommendation 5.

The recreational sector's allocation should be – based on the Department of Fisheries predictions of catch shares in 2009/2010 – 4.9 per cent overall and 7.5 per cent in the southern region (Zone C) and 0.9 per cent in the northern region (Zones A/B).

6.3 Commercial

Given the allocation for the recreational sector in section 6.2, it follows that the allocation for the commercial sector should be 95.1 per cent overall and 92.5 per cent in the southern region and 99.1 per cent in the northern region.

Recommendation 6.

The commercial sector's allocation should be – based on the Department of Fisheries predictions of catch shares in 2009/2010 – 95.1 per cent overall and 92.5 per cent in the southern region (Zone C) and 99.1% in the northern region (Zones A/B).

6.4 Decision rules prior to 2009/2010

The IFAAC notes that management arrangements must provide users with the opportunity to access their allocation (Guiding principle x, see section 3.1.2) and should be introduced to manage each user group within their prescribed allocation (Guiding principle vii, see section 3.1.2).

Provided users have the opportunity to access their allocation prior to 2009/2010, the IFAAC does not expect that sectors should be required to be managed to the recommended levels prior to 2009/2010, subject to the total take not impacting on the sustainability of the stock.

In practice, this may mean that the commercial sector would take greater than 92.5 per cent of the catch in Zone C in line with the Department's prediction that the recreational proportion of the catch will decline over the next two seasons (Appendix F). However, given that the proportion is being set above the reference period and the current level, allowing the commercial sector to take greater than 92.5 per cent in Zone C in the period up to 2009/10 would offset to some extent the impact of setting the proportion at the predicted level in 2009/2010.

Recommendation 7.
Sectors may take greater than their initial allocations without any penalty until 2009/2010 subject to compliance with sustainability criteria.

6.5 Reallocation

The implementation of a reallocation mechanism is integral to the IFM process. In particular, the reallocation mechanism will be essential for meeting the objective of optimal use over time.

The proposed recommended arrangements are contingent on the implementation of an appropriate mechanism as soon as possible but no later than 2009/10. It should be noted that should such a mechanism not be adopted, then each sector would be expected to be managed with in its catch share from that time forward in accordance with Guiding principle vii (see section 3.1.2.).

The IFM Government Policy (paragraph 16, Appendix A) states that:

Priority will be given to investigating the potential development of a market-based system to achieve reallocations, along with due consideration of social equity considerations, as soon as practical ...

A number of stakeholders made reference to market-based reallocation mechanisms in their submissions.

The use of market systems could have application in more than one of the possible allocation approaches discussed above. Market-based mechanisms could have immediate application in the western rock lobster fishery because there is already an established market for the sale or leasing of catching rights in the fishery.

Another characteristic of the rock lobster fishery, which makes it a possible candidate for a market-based system, is that the recreational sector already has a formal license system in place, which would enable contributions to be collected towards an appropriate fund.

For example, the way such a system could work is that if after 2009/2010 the recreational sector had exceeded its IFM allocation, the Government on behalf of the recreational sector could go into the market and trade commercial pot entitlements equivalent to what was required to allow for additional recreational catch share. The process would work in reverse if the commercial sector exceeded its allocation of the catch share.

The WRLC, in its submission, has proposed that the reallocation model could have the following features:

- two-way based on a review of socio-economic considerations over time;
- market-based trading effort between sectors, using a conversion factor between sectors;
- government entering the market on behalf of recreational fishers; and
- government managing the purchase of recreational effort by the commercial sector.

In order to ensure that a reallocation mechanism is introduced within a reasonable timeframe, the IFAAC will be cooperating with the Department of Fisheries to develop, as a matter of priority, a reallocation mechanism for consideration by the Minister.

Recommendation 8.
A reallocation mechanism should be implemented for the western rock lobster resource, as a matter of priority, but no later than 2009/2010.

7 OTHER ISSUES

7.1 Monitoring allocations

The IFAAC recognises that the lower percentage of the rock lobster catch taken by recreational fishers, based on the adjusted data, may surprise some stakeholders because the information that has been used until very recently (March, 2005) is from the unadjusted mail survey results (see section 4.2). A few years ago the mail survey results were actually adjusted upwards in at least some presentations, so that even higher percentages would have been quoted at times. When allocations are being considered, the IFAAC believes it is important that stakeholders have clarity about these matters.

At this stage, the phone diary survey method is believed to provide the most accurate estimate of the recreational catch. However, the IFAAC acknowledges that more accurate methods may be developed over time. Should this be the case, the IFAAC believes the stakeholders should be consulted prior to the adoption of new survey techniques.

The Department of Fisheries in its submission referred to the difficulty of year-to-year variation in data as exploitation and catches shares change, simply due to changing abundance from recruitment and the spatial distribution of each sector across the fishery. The IFAAC's view is that it was never intended that resource reallocation needs to respond on a real-time basis but deal with trends in the utilisation of fish towards making long-term adjustments between sectors to reflect long-term changes.

The challenge will be to find a set of principles/ performance indicators that account for year-to-year variation in catches so as to attempt to set longer term adjustment business rules for each of the sectors.



7.2 Management of allocations

The two relevant policies regarding management of allocations are:

Guiding Principle vii (see section 3.1.2) states that:

Appropriate management structures should be introduced to manage each user group within their prescribed allocation. These should include predetermined actions that are invoked in that group's catch increases above its allocation.

And Guiding principle x (see section 3.1.2) states that:

Management arrangements must provide users with the opportunity to access their allocation...

The IFAAC realises that management is a role of the Minister and the Department of Fisheries. However, as stakeholders have referred to these issues, the IFAAC has provided a brief discussion of them and a recommended way forward.

All major stakeholders have referred to the need to have appropriate management structures in place to take advantage of the opportunities that IFM will provide to sectors.

The NNTT has, in particular, identified:

...the absence of a means for consistent informed input from indigenous people is a major impediment to the development an effective IFM system.

The Department of Fisheries' management functions are often carried out in consultation with stakeholders' representatives and through Ministerial advisory committees. For instance, the Rock Lobster Industry Advisory Committee (RLIAC) is the statutory committee under section 29 of the FRMA established to provide advice to the Minister for Fisheries on rock lobster management issues.

The RFAC is another statutory committee established under section 33 of the FRMA that provides advice to the Minister for Fisheries on all recreational fisheries, including rock lobster.

Representative bodies such as Recfishwest, the WRLC and the Western Rock Lobster Development Association also provide "input" into western rock lobster management issues.

One of the outcomes expected to flow from the determination of allocations under the IFM process is that each sector takes a greater responsibility for maximising the benefit from their allocation. The recreational sector in particular may also be expected to benefit from more direct involvement in the management of their allocation. Appropriate structures also need to be in place in relation to customary participation.

The existing management structures may not be the most appropriate for these purposes and there is a need to determine what changes, if any, are required to current institutional arrangements. For this reason the IFAAC supports a review of management structures and institutions to determine whether there is need for change to enable the sectors to have more involvement in the development of future management arrangements under IFM.

The IFAAC in section 7.4 has made a recommendation on the management of allocations up to 2009/2010 but acknowledges that further policy development is required and that the management of the allocations beyond 2009/2010 requires considerable policy development. The IFAAC encourages the Department of Fisheries to, in consultation with stakeholders, commence developing the appropriate management structures and management arrangements that will deal effectively with these important matters as soon as possible.

Recommendation 9.
That the Executive Director of the Department of Fisheries develop, in consultation with stakeholders, the necessary regulatory structures to give effect to the Government's IFM policies contained in Guiding principles vii and x (see section 3.1.2).

7.3 Broader legislative arrangements

The WAFIC has made the point, in its submission to the IFAAC, that incorporation of decisions around allocations and policies adopted by Government through legislation is extremely important, as it demonstrates to the community that the Government is serious about this initiative. Further, WAFIC argues that the implementation of allocation decisions in legislation will also provide added security and confidence to sectors about their access to their share of the resource and proposes the introduction of a Ministerial Policy Guideline.

This view is consistent with the IFM Government Policy (paragraph 9, Appendix A), which states that:

Allocation processes will be developed in the context of policy guidelines set by the Minister. In the longer term, it may be desirable to amend the FRMA to incorporate allocation processes.

The IFAAC considers that this is a matter that is already covered by the Government Policy on IFM, which was released in 2004 and the timing of the development of a Ministerial Policy Guideline is a matter for the Minister for Fisheries.

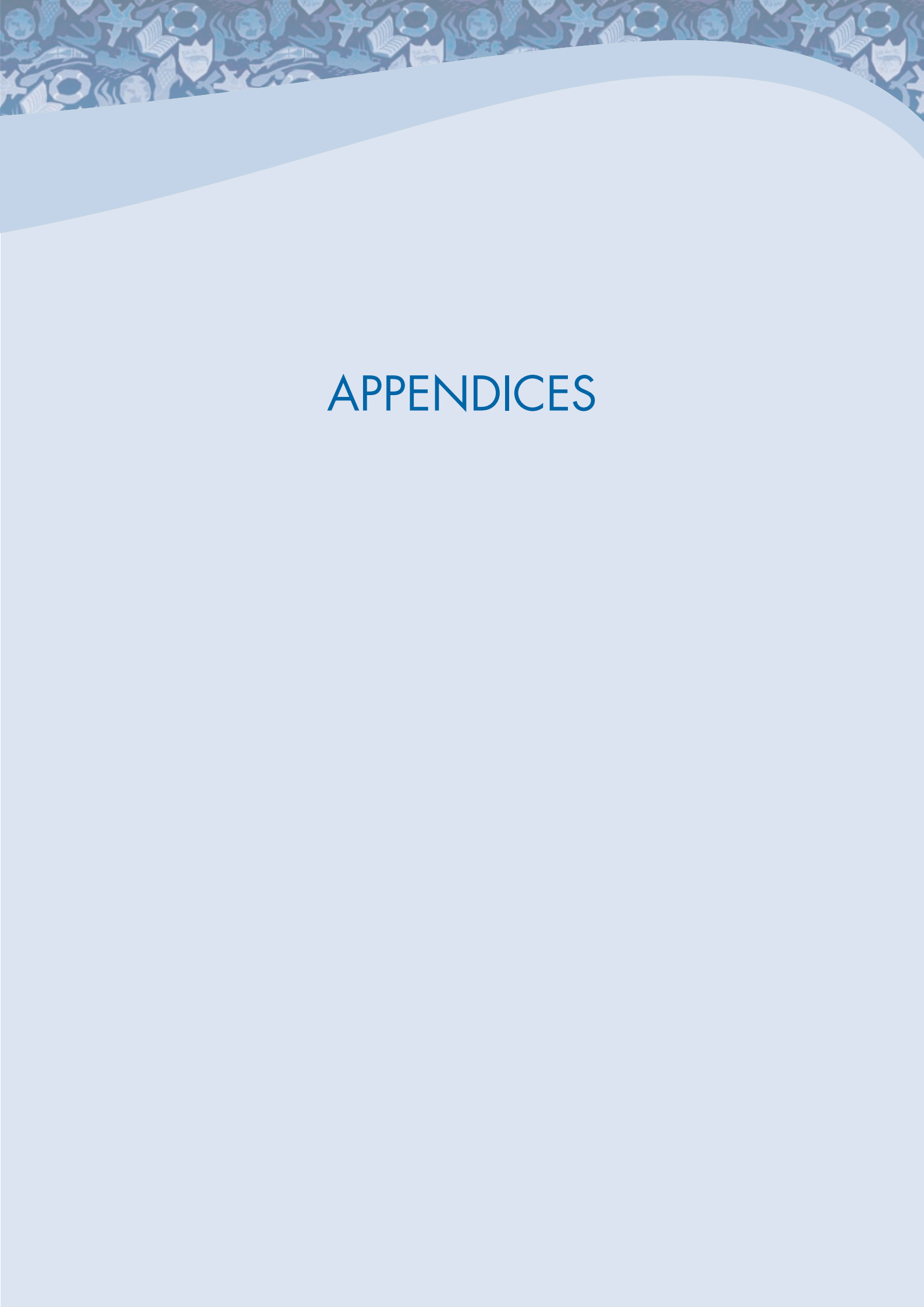
Recommendation 10

The IFAAC recommends the Department of Fisheries give consideration to the necessary legislative changes and timeline to effect the future management of fisheries under IFM.



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APPENDICES

APPENDIX A

Integrated Fisheries Management – Government Policy 1 October 2004

General

1. The Government is committed to the implementation of an integrated management system for the sustainable management of Western Australia's fisheries.
2. The integrated management system will be open and transparent, accessible and inclusive and flexible.

Information requirements

3. The development and funding of an appropriate research and monitoring program encompassing all user groups is essential to provide the necessary information for sustainability and allocation issues to be addressed under an integrated framework. This program will be progressively phased-in over a number of years as more fisheries are brought under the integrated management framework.
4. The Department of Fisheries will, in consultation with user groups, investigate options for standardising catch information between sectors, noting that the scale for data collection and reporting must be appropriate for each particular fishery.

Guiding principles for management

5. The following principles will be adopted (by incorporating them into either legislation, Ministerial Policy Guidelines or policy as appropriate) as the basis for integrated fisheries management.
 - i) Fish resources are a common property resource managed by the Government for the benefit of present and future generations.

- ii) Sustainability is paramount and ecological requirements must be considered in the determination of appropriate harvest levels.
- iii) Decisions must be made on best available information and where this information is uncertain, unreliable, inadequate or not available, a precautionary approach adopted to manage risk to fish stocks, marine communities and the environment. The absence of, or any uncertainty in, information should not be used as a reason for delaying or failing to make a decision.
- iv) A harvest level, that incorporates total mortality, should be set for each fishery¹ and the allocation designated for use by each group should be made explicit.
- v) Allocations to user groups should account for the total mortality on fish resources resulting from the activities of each group, including bycatch and mortality of released fish.
- vi) The total harvest across all user groups should not exceed the prescribed harvest level. If this occurs, steps consistent with the impacts of each user group should be taken to reduce the take to a level that does not compromise future sustainability.
- vii) Appropriate management structures and processes should be introduced to manage each user group within their prescribed allocation. These should incorporate pre-determined actions that are invoked if that group's catch increases above its allocation.

¹ Fishery is defined under the FRMA as one or more stocks or parts of stocks of fish that can be treated as a unit for the purposes of conservation or management; and a class of fishing activities in respect of those stocks or parts of stocks of fish.

- viii) Allocation decisions should aim to achieve the optimal benefit to the Western Australian community from the use of fish stocks and take account of economic, social, cultural and environmental factors. Realistically, this will take time to achieve and the implementation of these objectives is likely to be incremental over time.
- ix) Allocations to user groups should generally be made on a proportional basis to account for natural variations in fish populations. This general principle should not however preclude alternative arrangements in a fishery where priority access for a particular user group(s) may be determined. It should remain open to government policy to determine the priority use of fish resources where there is a clear case to do so.
- x) Management arrangements must provide users with the opportunity to access their allocation. There should be a limited capacity for transferring allocations unutilised by a sector for that sector's use in future years, provided the outcome does not affect resource sustainability.

More specific principles to provide further guidance around allocation decisions may also be established for individual fisheries.

Sustainable harvest levels

6. A sustainability report will be prepared for each fishery in accordance with the 'Policy for the implementation of ecologically sustainable development for fisheries and aquaculture in Western Australia'.
7. The Executive Director, Department of Fisheries, will approve a sustainability report for each fishery, which includes a clear statement on the harvest level.

Allocation processes

8. An Integrated Fisheries Allocation Advisory Committee will be established under s42 of the *Fish Resources Management Act 1994 (FRMA)* to investigate resource allocation issues and make recommendations on optimal resource use to the Minister for Fisheries including:
 - i) allocations between groups within the harvest limits determined for each fishery;
 - ii) strategies to overcome allocation and access issues arising from temporal and spatial competition at a local/regional level;
 - iii) allocation issues within a sector as referred by the Minister for Fisheries;
 - iv) more specific principles to provide further guidance around allocation decisions for individual fisheries; and
 - v) other matters concerning the integrated management of fisheries as referred by the Minister for Fisheries.
9. Allocation processes will be developed in the context of policy guidelines set by the Minister. In the longer-term, it may be desirable to amend the FRMA to incorporate allocation processes.
10. The Integrated Fisheries Allocation Advisory Committee will generally comprise a chairperson and two members.
11. The Minister will be responsible for determining the process and timeframes for resolving allocation issues in each fishery based on advice from the Integrated Fisheries Allocation Advisory Committee.
12. The Minister will provide a statement of decision on announcement of his determination in an allocation matter.

13. The Minister may make public the Committee's report at the same time his statement of decision is released.

Compensation

14. Where a reallocation of resources from one user group to another results in demonstrable financial loss to a licensed fisherman, in principle there should be consideration of compensation. Compensation may take various forms and desirably does not necessarily involve the payment of money. The Department of Fisheries will review the scope of the *Fisheries Adjustment Scheme Act 1987* to ensure it contains sufficient flexibility to encompass these principles under an integrated management system.
15. Cases for compensation should be assessed on their merits.
16. Priority will be given to investigating the potential development of market based systems to achieve reallocations, along with due consideration of social equity considerations, as soon as practical. Clearly, consideration of any market based system will be based on its merit.
17. No compensation should be payable where adjustments are made for sustainability reasons.
19. It is important to formalise existing shares as a basis for future allocations discussions. These will be formalised on the basis of proportional catch shares using the best available information during the five year period from 1997 to 2001.
20. Recreational fishing plans for the West Coast and Gascoyne regions will be implemented with effect from 1 October 2003 to provide a more effective framework for managing recreational fisheries. A review of the North and South Coast regions is also underway.
21. A review of the commercial wetline fishery has commenced. Management outcomes must involve the removal of excess fishing capacity from the fishery and the establishment of a dedicated commercial fishery with clear entry criteria and an appropriate limit on catch in each bioregion.

Funding

Effective sectoral management

18. The Government is committed to introducing more effective management across all fisheries. The implementation of more effective sectoral arrangements in which the catch of a sector can be contained is an essential first step in the introduction of a new integrated management system within which allocation issues may be addressed. In the interim, each sector will continue to be managed responsibly within current catch ranges and should the catch of a sector alter disproportionately to that of other sectors, the Minister will take appropriate management action to address this.
22. The initiative can be commenced within the 2004/05 budget however resourcing requirements will increase as more fisheries are brought under a integrated framework. Future funding will be considered through the Government budget process.
23. The Government will consider seeking greater contributions from all users over time corresponding to growing certainty/security over access as allocation models are implemented in each fishery.

APPENDIX B

INTEGRATED FISHERIES ALLOCATION ADVISORY COMMITTEE

Integrated Fisheries Management Allocation Process

Introduction

Government Policy 2004 on Integrated Fishery Management (IFM) states that the Minister will determine the process and timeframes for resolving allocation in each fishery based on the advice of the Integrated Fisheries Allocation Advisory Committee (IFAAC).

A. Determining the Need for a Formal Allocation process in a Fishery

The Minister for Fisheries has requested that IFAAC begin with the Western Rock Lobster Fishery, Abalone Fishery and the West Coast Demersal Finfish Fishery.

In the future the IFAAC will consult broadly as to fisheries that should be included in the IFM process and advise the Minister for Fisheries accordingly.

B. Development of an Integrated Fishery Management Fishery Report – Department of Fisheries

The setting of sustainable harvest levels is fundamental to ensure sustainable management. An Integrated Fisheries Management Fishery Report will be prepared by the Department of Fisheries for each fishery that is to be subject to the IFM process (IFM Government Policy, 2004, paragraphs 6 & 7).

The reports will contain details such as:

- The current management practices within the fishery;
- Historical catch levels or estimates of catch taken by each sector;

- The biology of the fish species involved;
- The sustainable harvest level of the resource; and
- Other relevant data such as regional employment, economic and social/lifestyle issues.

In short the report should be a robust summary of the facts about the fishery.

The Department, in developing these reports, will consult with the key stakeholder groups. The IFM report will be approved by the Executive Director, Department of Fisheries and will include a clear statement of the sustainable harvest level.

C. The Integrated Fisheries Allocation Process.

Step 1 – Investigation of the allocation issue

IFAAC will receive the IFM Report and then conduct preliminary investigations into the allocation issue by:

- Seeking submissions and consulting with the peak stakeholder groups such the Western Australian Fishing Industry Council, Recfishwest, Conservation Council of Western Australia and bodies representing Indigenous interests.
- Drawing on the knowledge, data, technical material and experience available with regard to the particular fishery both from the Department of Fisheries and as appropriate from other sources.
- Identifying areas of agreement and disagreement between the different parties.

As part of its considerations, IFAAC may request the Department of Fisheries to further advise on the ecological, economic and social impacts of any proposed change in resource allocation. Following these actions, IFAAC will formalise its initial position.

Step 2 – IFAAC settles draft allocation report and releases for public comment.

Once IFAAC has come to an initial position with regard to allocation, this will be documented, along with the reasons for its conclusions, and will recommend to the Minister that it be released as a ‘draft allocation paper’ for public comment, inviting submissions.

This stage in the process will allow those involved in fishing, managing and researching the fishery, as well as those in the wider community who may have a specific interest in this fishery to provide additional input. Depending on the circumstances of the particular fishery, IFAAC may hold or ask Departmental Officers to undertake meetings in relevant metropolitan and regional locations to enable industry, recreational fishers and community members to input their views into the IFAAC process.

The comment period will be normally for a period of three months.

Step 3 – IFAAC recommends an allocation to the Minister for Fisheries

Once the comment period has closed, and IFAAC has considered the submissions received IFAAC will finalise its position and submit a final allocation report to the Minister.

Step 4 – Determination by the Minister (IFM Government Policy, 2004, paragraph 12)

The Minister for Fisheries is responsible for considering the recommendations of IFAAC and determining the allocations. The allocations are likely to be fixed for a period of about five years.

The Minister has agreed to provide a statement of decision on announcement of his determination in an allocation matter. The Minister may make public IFAAC’s report at the same time as his statement of decision is released. **(IFM Government Policy, 2004, paragraphs 11, 12 & 13)**

D. Mechanisms for future allocations between sectors (IFM Government Policy 16)

The Toohey report states that the ‘Community expectations and demands over the use of fish resources will change over time so an integrated framework must allow for adjustments in allocations to occur, both within and between sectors’. IFM Government Policy paragraph 16 states that priority will be given to investigating the development of a market based system to achieve reallocations, along with social equity considerations, as soon as practical.

IFAAC proposes to investigate possible mechanisms, consult with stakeholders on proposals through a public process and provide advice to the Minister on preferred options. In formulating its recommendations IFAAC will have regard to Government Policy Paragraphs 14 to 17.

APPENDIX C

Source for Stakeholder submissions to the IFAAC

Aquaculture Council of Western Australia

Contact: Mr Dan Machin
Phone: 9492 8814

Charter Boat Owners & Operators Association

Contact: Mr Rick Reid
Phone: 0418 992 383

Department of Fisheries

<http://www.fish.wa.gov.au/docs/op/op021/fop021.pdf>

National Native Title Tribunal

Contact: Guy Wright
Phone: 9268 9700

Recfishwest

<http://www.recfishwest.org.au/SubIFMLobsterFMP192.htm>

Recreational Fishing Advisory Committee

Contact: Doug Bathgate
Phone: 9482 7332

WA Fishing Industry Council

http://www.wafic.com.au/images/139-IFAAC_WRL_WAFIC_submission_12_May_2005.pdf

Western Rock Lobster Council

<http://www.rocklobsterwa.com/>

APPENDIX D



**MINISTER FOR AGRICULTURE, FORESTRY AND FISHERIES;
THE MIDWEST, WHEATBELT AND GREAT SOUTHERN
LEADER OF THE GOVERNMENT IN THE LEGISLATIVE COUNCIL**



Mr Murray Jorgensen
Chairman
Integrated Fisheries Allocation
Advisory Committee
C/- Department of Fisheries
The Atrium
168-170 St George's Terrace
Perth WA 6000

Dear Murray

As IFAAC moves forward in its deliberations on specific fisheries, I believe it is important for me to provide you with some guidance on my thinking with respect to the customary fishing sector.

Let me start by clarifying my use of the term "customary fishing sector". I use this term to describe the fishing activity of indigenous people who have a right (in accordance with aboriginal law and customs) to fish in a customary manner. Customary fishing applies within a sustainable fisheries management framework to persons of Aboriginal descent; fishing in accordance with the traditional law and custom of the area being fished; and fishing for the purpose of satisfying non-commercial personal, domestic, ceremonial, educational or communal needs.

It is important to differentiate between the activity and the people, as not all indigenous people are permitted to undertake customary fishing under aboriginal law and custom.

The involvement of the customary fishing sector in the sustainable management of fisheries has been the subject of a number of different research and consultative processes over recent years and the government has invested significantly in participating in these processes to ensure the smooth development of recognised indigenous participation in relevant fisheries.

Of relevance are:

1. The National Indigenous Technical Working Group (NITWG), which include statements that indigenous fishing be recognised and protected within management arrangements. The National Indigenous Technical Working Group flowed out of the Indigenous Fishing Conference held in Perth in 2003 and Commonwealth, State and Territory governments; indigenous groups; and commercial and recreational fishing interests have now approved its findings.

Of particular significance is principle 4 from NITWG, which states:

"Recognition of customary fishing will translate, wherever possible, into a share in the overall allocation of sustainable managed fisheries."

11th Floor, Dumas House, 2 Havelock Street, West Perth, Western Australia 6005
Phone: (08) 9213 6700 Facsimile: (08) 9213 6701

2. The Aboriginal Fishing Strategy, which I have supported and which is currently before Cabinet, contains the following recommendation.

“Recommendation 13: Within any given fisheries allocation framework developed in Western Australia, customary fishing access rights should be given priority over all other fishing access, including commercial and recreational fishing.”

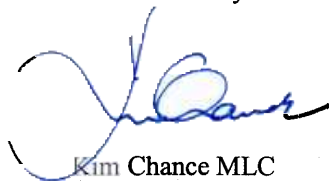
3. The National Recreational and Indigenous Fishing Survey (NRIFS), to which we contributed, provided data on indigenous fishing activity in the Kimberley region of Western Australia. Although not relevant to the fisheries you are currently considering, it was the first large-scale survey of customary fishing and it gave recognition to that fishing as a legitimate activity.

It is IFAAC’s responsibility to provide advice on allocations to the various sectors. I request that IFAAC be mindful of the Government’s position of giving priority to a customary fishing allocation. In the case of inshore fish resources, such as rock lobster and abalone, I am sure you would recognise that coastal indigenous communities would have been accessing these resources long before white settlement and that it is likely that this access continues, albeit at a low level.

I am aware that there is no data on the customary take of fish off Western Australia apart from that obtained through the NRIFS and that this makes allocation to customary fishing a difficult matter to consider. Nevertheless, given the importance of fishing in the life of coastal indigenous people, I would expect to see some allocation recommended by IFAAC for customary fishing of inshore species.

I wish you well in your deliberations.

Yours sincerely



Kim Chance MLC
MINISTER FOR AGRICULTURE, FORESTRY AND FISHERIES

08 DEC 2004

APPENDIX E



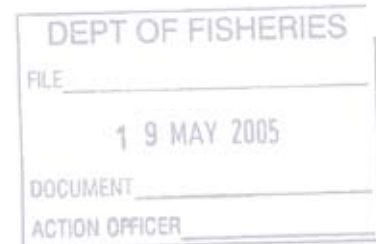
HON JON FORD JP MLC
Minister For Fisheries; the Kimberley,
Pilbara And Gascoyne



17 MAY 2005

Ref: 21-296

Mr Murray Jorgensen OAM
Chair
Integrated Fisheries Allocation Advisory Committee
3rd Floor, The Atrium
168 St Georges Terrace
PERTH WA 6000



Dear Murray

Thank you for your letter of 22 April concerning the role of the conservation sector in the Integrated Fisheries Management (IFM) process.

IFAAC sought my guidance on what role I see for the conservation sector in the IFM process, and in particular, whether I expect the committee to provide a recommendation on allocations to non-extractive uses of the resource.

In replying to your request it is worth considering the objects of the *Fish Resources Management Act 1994* (FRMA) which are to conserve, develop and share fish resources of the State for the benefit of future generations.

Other particular objects of the FRMA, which are relevant to the conservation of fish are set out below:-

- to conserve fish and protect their environment;
- to ensure that the exploitation of fish resources is carried out in a sustainable manner;
- to achieve optimum economic, social and other benefits from the use of fish resources; and
- to enable the allocation of fish resources between users of those resources.

The Government's approach to the management of marine resources is somewhat complex. The conservation of fish resources and the protection of their environment, the sustainable exploitation of fish resources and allocation of fish resources between users of the fish resources is the responsibility of the Minister for Fisheries and is administered by the Department of Fisheries. Some conservation of fish resources and their environments is also achieved through the establishment of marine reserve and marine parks under the *Conservation and Land Management Act 1984*, (CLMA), which is administered by the Department of Conservation and Land Management. Fishing is banned in marine protected areas such as sanctuary zones; special purpose zones under the CLMA legislation and under some Fish and Fish Habitat Protection Areas established under the FRMA. Under the FRMA large areas are protected from fishing through spatial and temporal closures. For instance in the rock lobster fishery the fishing season is limited and some areas are protected from fishing.

14th Floor, May Holman Centre, 32 St Georges Terrace, Perth WA 6000
Telephone (08) 9425 4200 Facsimile (08) 9425 4244

The concerns and views of the conservation sector were identified in the Report to the Minister for Agriculture, Forestry and Fisheries by the Integrated Fisheries Management Review Committee ('The Toohey Report'):

'...major concerns of conservation groups was that fisheries managers tended to view sustainability as the relationship between fish stocks and fishing activity. Little or no consideration appeared to be given to wider ecological requirements of other fish or animal species (eg birds, animals) or importance of healthy fish stocks in the wider ecosystem.'

'The conservation sector argued that wider ecological requirements must be incorporated into the calculation of sustainable catch [Sustainable Harvest Level] (which is then used as a basis for allocations to consumptive user groups) or a specific allocation set aside ... to meet these requirements'

'Spatial allocations may also be required in the form of no take areas to meet other requirements, such as preservation of representative habitats, establishment of scientific reference areas, viewing purposes for which fishing may negatively impact (for example dive ecotourism) or for fishery management reasons (closures to protect breeding fish or nursery areas).'

The Department shares the conservation sector's concerns with respect to a healthy marine ecosystem, however, the Department believes that the environmental approval under the Commonwealths *Environmental Protection And Biodiversity Conservation Act 1999* for the major fisheries demonstrated that the broader ecological needs are being addressed under the existing management arrangements. In the case of the rock lobster fishery this view is supported by the fact that the fishery was the first to receive Marine Stewardship Council accreditation.

Particular fisheries also have extensive "no-take" areas to cater for recruitment processes, habitat protection or to effect spatial separation between user groups. These have often arisen through the public consultation process leading to the creation or amendment to a Fisheries Management Plan and/or associated rules. This avenue will continue to be open for comment by the conservation sector.

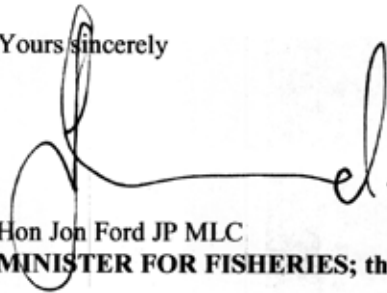
The Department of Fisheries' position is that the creation of no take areas to meet other requirements, such as the preservation of representative habitats, establishment of scientific reference areas and for viewing purposes for which fishing may negatively impact, will be accommodated through the reservation processes such as Marine Park Planning or Fish and Fish Habitat Protection areas. Such closures to fishing for demersal and sedentary species result in a reduction in the Sustainable Harvest Level (SHL) for a particular species.

The Executive Director, Department of Fisheries, will take the effective 'spatial allocations' to these non-extractive uses into account when he approves the SHL for a particular fishery resource. The Executive Director currently does not intend to seek public input into the setting of the SHL, as this is appropriately set based on expert advice from the Director of the Fisheries Research Division. The SHL does implicitly take into account the wider ecological requirements. If the setting of the SHL is an issue for the

conservation sector then it is open to them to contact the Executive Director to discuss its concerns. They of course should be fully engaging with the marine parks planning process to ensure that its position is considered in the Government's consideration of new marine parks.

In summary, the Integrated Fisheries Management initiative is designed to determine allocations between commercial, recreational (including charter) and indigenous sectors that are extractive users. I am not seeking recommendation from IFAAC on allocations to non-extractive uses of the resource.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jon Ford', written over a faint, light-colored watermark of the same signature.

Hon Jon Ford JP MLC
MINISTER FOR FISHERIES; the KIMBERLEY, PILBARA AND GASCOYNE

APPENDIX F

[This letter and following data was sent to key stakeholders]

Dear

Best Estimates of the Western Rock Lobster Recreational Catch

In the *Integrated Fisheries Management Report: Western Rock Lobster Resource* (Fisheries Management Paper No. 192) the Department provided estimates of the recreational catch based on both the Department of Fisheries mail survey and the phone diary survey.

The Integrated Fisheries Allocation Advisory Committee (IFAAC) has asked me to provide a brief paper on the preferred survey methodology and best estimate of recreational catch. The Department's response to this request is attached. I have copied it to you so that you can consider it in the finalisation of any submission you may make to IFAAC.

The attached indicates that the phone diary survey provides the most accurate estimate of recreational catch. The Research Division has adjusted past mail survey estimates of the recreational sector catch taking into account the bias that was identified in the mail survey results. The Department's Research Division's advice is that the basis for such an adjustment is sound because it is believed that the mail survey results from the past are still valid in showing historical trends, but they need adjustment to show the actual levels of catch more accurately.

Of course, the adjustment hasn't changed the actual (physical) size of the catch by the recreational sector – it just provides a more accurate estimate of its magnitude.

The Department will be proposing in its submission to IFAAC that the adjusted recreational catch estimate should be used as the basis for framing IFAAC's draft allocation recommendations to the Minister for Fisheries. The Department will also recommend that allocation decisions should specify the method of estimation used to determine the allocation and track performance against them over time.

Yours sincerely

PETER ROGERS
EXECUTIVE DIRECTOR

10 May 2005

BEST ESTIMATES OF THE WESTERN ROCK LOBSTER RECREATIONAL CATCH

Research Division, Department of Fisheries, 2005

Background

The catch of western rock lobster (WRL) by the recreational sector has been estimated using a number of methods during the last 20 years. These include creel surveys, mail surveys, phone recall surveys and phone diary surveys. Each of these estimation methods has advantages and disadvantages both related to the costs of undertaking the surveys in order to produce an estimate with appropriate levels of precision, but also in terms of the differences in the level of bias associated with the estimation methodology (i.e. how accurate is the method).

The estimation method with the longest time series is the end of season mail survey, which has been in operation for the past 17 years. This method involves the distribution of letters to a random selection of licence holders requesting they return information on their catch and effort for the past season. Such surveys, which require individuals to recall their activities over about a 12-month period, are now known to produce recall biases in the estimates they generate (generally overestimating by a factor of about 2) and are also affected by non-response bias (respondents fishing activity may be different to non-respondents fishing activity). The bias is, however, generally consistent through time and therefore the changes in the calculated estimates among years can provide an accurate record of the trend in catches.

Methods

Determination of the level of bias

In two separate years, a phone diary survey was undertaken with a random selection of licence holders concurrent with the mail survey. These diary-based surveys provide more accurate estimates because of the combination of the very low non-response rate, plus they involve individuals filling in a diary of their fishing activities who are then called once a month to

obtain the data. This greatly reduces the recall bias. The diary method generated estimates that were about half the level of the mail survey – which is consistent with the expected bias of the mail surveys (a similar level of bias has also been found for the Tasmanian recreational lobster fishery).

From the two comparisons, a correction factor of 1.90 (SE: 0.3) was determined using a linear regression method. However, as there are only two data points, this value should be treated as preliminary. A further comparison year will be available after the 2004/05 season, following which there will be a recalculation of the correction factor.

Results

Historical Catches

Given the above result, the best estimates of the recreational catch of WRL over the last 17 years are obtained by using the mail survey data which have been suitably adjusted using the calculated level of bias. These data are shown below in Fig. 1.

The recreational catch, like the commercial catch, undergoes relatively large fluctuations amongst years depending upon the relative level of recruitment that occurred three to four years previously (as measured by the puerulus settlement index). There has, however, been an underlying long-term trend for increased recreational catches, which have risen about four-fold over this period due to a long-term increase in effort (about 4% per year). Thus, the recreational catch (using the adjusted mail survey results) has increased from about 120 tonnes in the mid 1980s to levels that currently exceed 400 tonnes (Table 1).

The percentage of the total WRL catch taken by the recreational sector has also increased from about 1% in the mid 1980s to levels that now exceed 3%. During the reference period (1997/98–2001/02) the recreational take varied between 2.3–3.1% of the total lobster catch (Fig. 2). In Zone A&B, the recreational catch has remained almost constant at about 1% of the total for these zones whereas the recreational catch in Zone C displays both annual variations and a longer term increase from 2% in the mid 80s to the current levels of 5–6% (Fig. 3).

Forecasted Catches

The relationships between puerulus settlement indices (combined with expected levels of effort) and both the recreational and commercial catches three to four years later have been developed and are reported annually in the State of Fisheries Reports. The predictions for the three year period for which puerulus settlement is currently available suggest that the recreational catch will be at relatively similar levels in 2004/05, at about 460 tonnes, but will decline in each of the following two years given the lower puerulus settlement levels that occurred during the 2001–2004 period.

Thus, whilst the proportion of the total catch caught by the recreational sector is likely to increase to approximately 3.5% in 2004/05, this will, assuming no major management changes, probably decline in the following years to levels below 3%.

Management Implications

Given the current methods used for monitoring the size of the WRL spawning stock, the changes in the two estimates of recreational catch have virtually no impact on the assessment of the current status of this stock. Therefore, there will be no direct flow-on management implications from these adjustments.

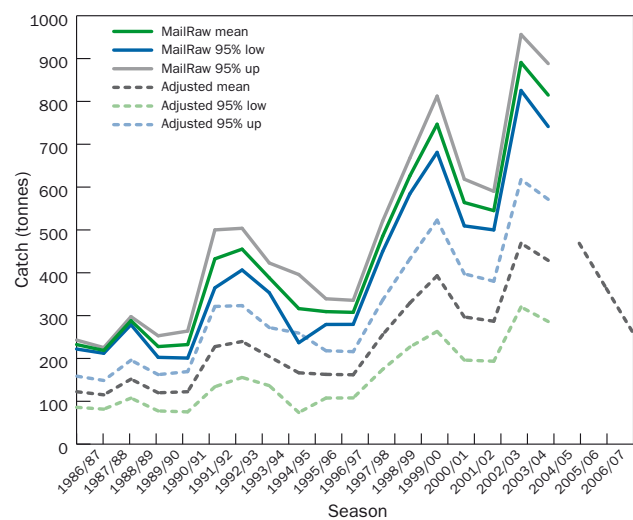


Figure 1 Plots of the recreational catch estimates (thick lines) for western rock lobster based upon both the ‘raw estimates’ from the mail survey and the adjusted estimates calculated from the ‘phone diary based’ correction factor. The 95% confidence intervals are also presented (thin lines). The forecast recreational catches for 2004/05–2006/07 are based on puerulus settlement levels for the period 2001–2004.

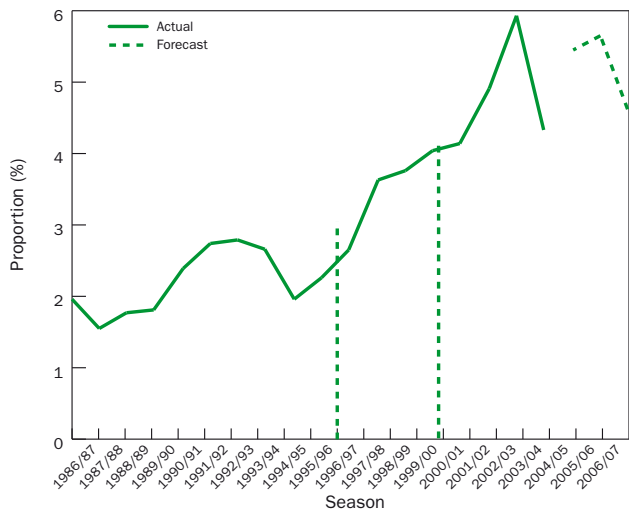


Figure 2 The proportion (%) of the total western rock lobster catch taken by recreational fishers using the adjusted recreational catch estimates. The two vertical dotted lines indicate the reference period 1997–2001. The forecast percentages are based on the expected commercial and recreational catches for the next three seasons (2004/05–2006/07 see above).

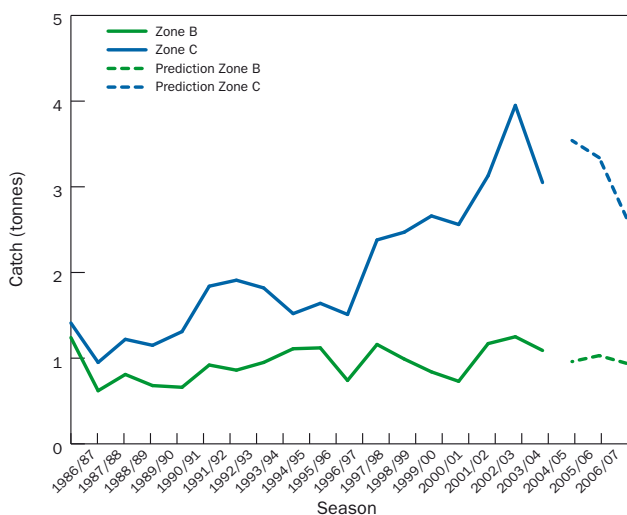


Figure 3 The proportion (%) of the total western rock lobster catch taken by recreational fishers using the adjusted recreational catch estimates in Zones B and Zone C. The forecast percentages are based on the expected commercial and recreational catches for the next three seasons (2004/05–2006/07). Note the recreational catch in Zone A is minimal and is included in zone B.

Table 1 The best estimates of the total recreational lobster catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data. The data for 2004/05–06/07 (in italics) are projected data based upon puerulus settlement data and expected levels of effort and applying the correction factor to the projections given in Table 11 of the IFM report (which were rounded to the nearest 100 tonne).

Year	Recreational Catch (tonnes)	% of total lobster catch
1996/97	161	1.5
1997/98	255	2.4
1998/99	329	2.5
1999/00	392	2.6
2000/01	296	2.5
2001/02	287	3.1
2002/03	468	3.9
2003/04	428	3.1
<i>2004/05</i>	<i>474</i>	<i>3.5</i>
<i>2005/06</i>	<i>368</i>	<i>3.3</i>
<i>2006/07</i>	<i>263</i>	<i>2.6</i>

Table 2 The best estimates of the total recreational lobster catch levels and their proportion of the total lobster catch for Zones A&B and C calculated using the adjusted mail survey data. The data for 2004/05–06/07 (in italics) are projected data based upon puerulus settlement data and expected levels of effort and applying the correction factor to the projections given in Table 11 of the IFM report (which were rounded to the nearest 100 tonne).

Year	Recreational Catch (tonnes)		% of total lobster catch	
	Zone C	Zones A&B	Zone C	Zones A&B
1996/97	121	41	2.6	0.7
1997/98	192	63	3.6	1.2
1998/99	268	61	3.8	1.0
1999/00	340	53	4.0	0.8
2000/01	259	38	4.1	0.7
2001/02	234	53	4.9	1.2
2002/03	406	63	5.9	1.2
2003/04	369	59	4.3	1.1
<i>2004/05</i>	<i>421</i>	<i>53</i>	<i>5.4</i>	<i>0.9</i>
<i>2005/06</i>	<i>316</i>	<i>53</i>	<i>5.6</i>	<i>1.0</i>
<i>2006/07</i>	<i>210</i>	<i>53</i>	<i>4.7</i>	<i>0.9</i>

APPENDIX G

Long-Term Growth Trends In Recreational Rock Lobster Catch Research Division, Department of Fisheries, 16 June 2005

List of figures

Figure 1 Estimated recreational catch for western rock lobster (solid line). 95% confidence intervals have also been included. Forecasts have been included for seasons 2004/05 to 2007/08 (dashed line).

Figure 2 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 3 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 4 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 5 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 6 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 7 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Figure 8 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone B. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

List of tables

Table 1 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data. The data for 2004/05–2007/08 are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87–2003/04.

Table 2 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data for zone C. The data for 2004/05–2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87–2003/04.

Table 3 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data for zone B. The data for 2004/05–2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87–2003/04.

Long-term growth trend in recreational rock lobster catch

Draft 14 June 2005

Background

This document provides the Fisheries Research advice on expected long-term trends in the percent of recreational catch as requested by IFAAC in their letter of 10 June 2005.

Methods

Information on puerulus settlements at Alkimos up to 2004/05, have been used to predict the recreational and commercial catch to 2007/08. The 2004/05 Alkimos puerulus settlement data also provides a preliminary indicator of the recreational catch in 2008/09, as most of the seasons catch taken by the recreational sector is made in the early part of the season (Nov–Jan). Unlike predictions for the recreational sector, predictions for the commercial catch require *both* the 2004/05 and 2005/06 puerulus settlement. Since the 2005/06 puerulus settlement is not available it has not been possible to predict the commercial catch in 2008/09.

IFAAC has also requested information on 2009/10 and 2010/11. The only comment that can be made on the recreational catch in 2009/10 is that the puerulus settlement in 2005/06 will be a part-contributor to this catch and that the Leeuwin Current during 2005 affects the level of settlement in 2005/06. Given that the Leeuwin Current in 2005 has been of average strength then we can expect an average level of settlement in 2005/06.

There is no basis for predicting the recreational rock lobster in 2010/11 based on puerulus settlement data. Thus estimates of percent recreational catch for 2008/09 to 2010/11 are based on the long-term trend in growth of the recreational effort under the current level of management and average puerulus settlement based on last 10 years.

The prediction of the expected trend in percent of recreational catch has been based on the following data sets (as requested by IFAAC): (a) 1986/87–2003/04 actual catches; (b) 1996/97–2007/08 using actual and predicted catches. The 1986/87–2007/08 data set using actual and predicted catches has also been analyzed. The 1996/97–2001/02 data set was considered too short a time series to provide a basis for predicting the trend in percent recreational catch.

The relationship examined to assess the trend in percent of recreational catch (P_{cat_t}) with the annual trend (T) and the puerulus settlement 3 and 4 years ($P_{t-3,t-4}$) before was:

$$P_{cat_t} = \exp(a + b*T + d*\log(P_{t-3,t-4})) \quad (1)$$

The analysis has been undertaken for the whole fishery and by Zones A/B combined and Zone C.

The recreational catch data in this document are all based on the mail survey data adjusted for the recall bias that has been estimated from the phone diary survey.

Results

Overall fishery

The puerulus data for 2004/05 indicates an improvement in recreational catch is expected in 2007/08 and 2008/09 after the expected predicted low catch of about 260 t in 2006/07 (Fig. 1). The trend in percent recreational catch also shows an increase in 2007/08. The predicted percentages for 2004/05 to 2007/08 based on puerulus settlement are also shown.

The relationship based on equation 1 and the 1986/87 to 2003/04 data indicates that the time trend is significant but the puerulus settlement is not significant (Fig. 2) for the proportion of catch that is recreational. The expected percentages for 2008/09 to 2010/11 are based on the long-term trend in effort and assuming average puerulus settlement and the current management rules (Table 1).

Time trend being “significant” indicates it is helpful in “prediction” whilst puerulus settlement “not significant” means that it is not.

Forecasts were made using the model constructed from data of seasons 1986/87 through to 2003/04 since it provides a reasonable number data points to estimate required coefficients and this series also represents real data.

The relationship based on equation 1 and the 1986/87 to 2007/08 and 1996/97 to 2007/08 actual and predicted data indicates that the time trend and the puerulus settlement are significant (Fig. 3 and 4 respectively). The expected recreational percentages for 2008/09 to 2010/11 are based on the long-term trend and assuming average puerulus settlement.

Zones A/B and C

The proportion of catch that is recreational for Zone C shows a similar trend to the whole fishery catch data due to the removal of a relatively constant catch in the Zones A/B (Fig. 5 to 7). The relationship based on equation 1 and the 1986/87 to 2003/04 data indicates that the time trend is significant but the puerulus settlement is not significant (Fig. 5). The expected percentages for 2008/09 to 2010/11 are based on the long-term trend and assuming average puerulus settlement and the current management rules (Table 2). Note that the proportion of recreational catch in Zone C (Figs. 5 to 7) is substantially higher than for the whole fishery (Figs. 2 to 4). This is because most of the recreational catch is made in this Zone, but on average only half of the commercial catch occurs in Zone C.

The recreational catch for Zones A/B does not show any significant trend based on the 1986/87 to 2003/04 data and hence the mean catch (53 t) representing 0.94%(+/- 0.40 confidence limits) provides a reasonable indicator of future catches under average puerulus settlement, no increase in effort and the current management rules (Fig. 8, Table 3).

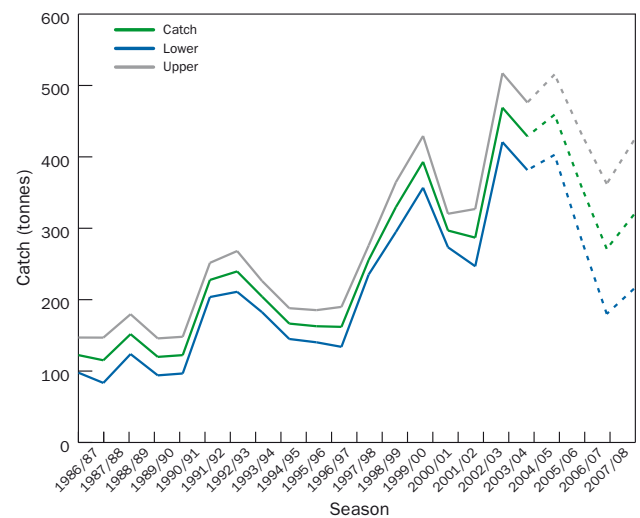


Figure 1 Estimated recreational catch for western rock lobster (solid line). 95% confidence intervals have also been included. Forecasts have been included for seasons 2004/05 to 2007/08 (dashed line).

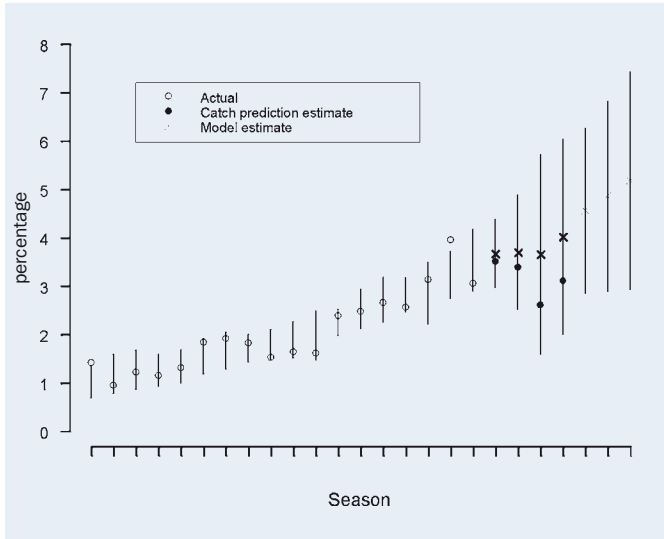


Figure 2 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log34Alk)$

Parameters:

	Value	Std. Error	t value
a	-0.147367	0.1675280	-0.879657
b	0.063977	0.0102768	6.225380
d	0.058069	0.0605989	0.958252

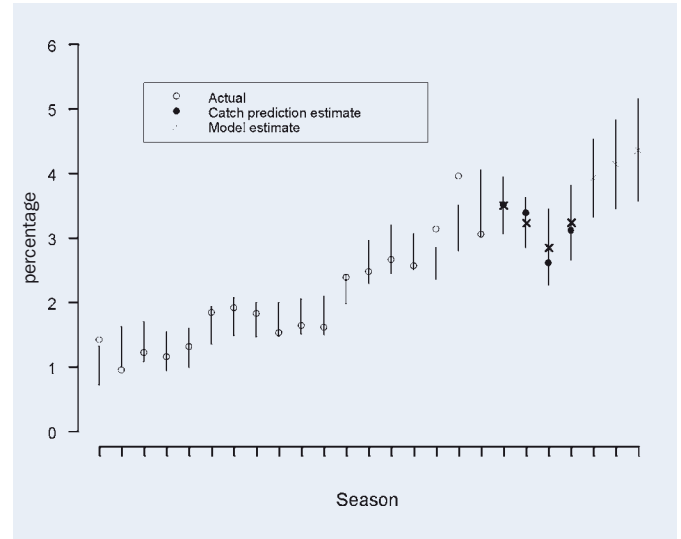


Figure 3 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log34Alk)$

Parameters:

	Value	Std. Error	t value
a	-0.2768800	0.13983300	-1.98008
b	0.0520754	0.00536996	9.69754
d	0.1352060	0.03278680	4.12378

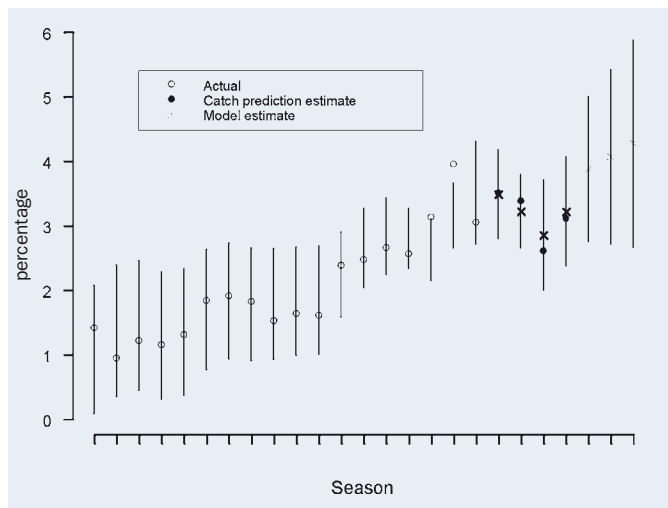


Figure 4 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log_{34}Alk)$

	Value	Std. Error	t value
a	-0.2079070	0.3479620	-0.597498
b	0.0492245	0.0137591	3.577600
d	0.1303040	0.0492811	2.644100

Table 1 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data. The data for 2004/05–2007/08 are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87–2003/04.

Season	Recreational Catch (tonnes)	% of total lobster catch
1996/97	161	1.5
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2001/02	287	3.1
2002/03	468	3.9
2003/04	428	3.1
2004/05	474	3.5
2005/06	368	3.3
2006/07	263	2.6
2007/08	320	3.1
2008/09	?	4.6
2009/10	?	4.9
2010/11	?	5.2

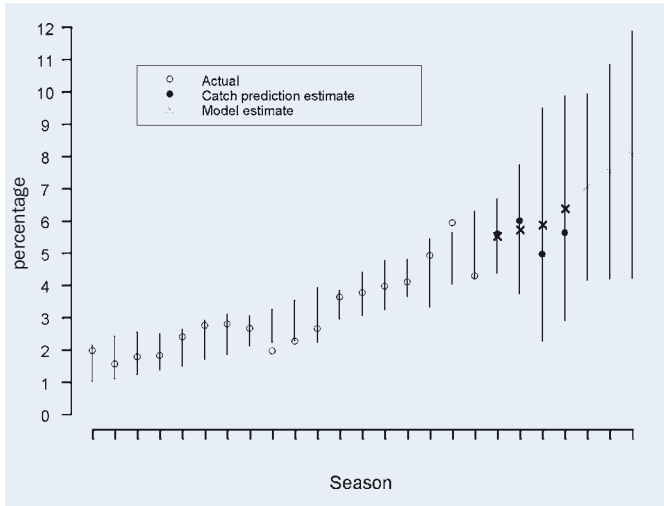


Figure 5 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log34Alk)$

Parameters:

	Value	Std. Error	t value
a	0.3300490	0.1812870	1.82059
b	0.0660851	0.0112898	5.85351
d	0.0306277	0.0659951	0.46409

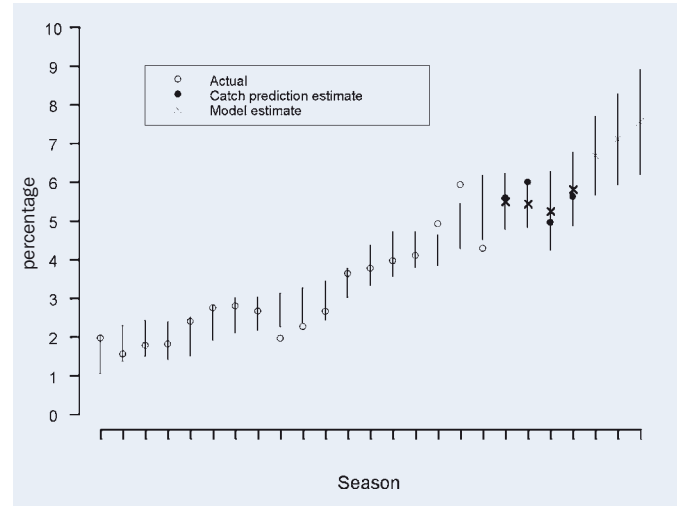


Figure 6 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log34Alk)$

Parameters:

	Value	Std. Error	t value
a	0.2416010	0.14531200	1.66264
b	0.0614556	0.00553944	11.09420
d	0.0736918	0.03241170	2.27362

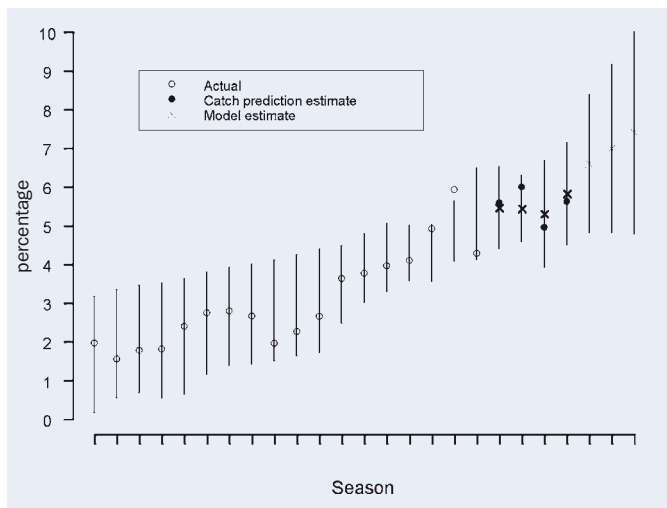


Figure 7 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim \exp(a + b * t + d * \log34Alk)$

Parameters:

	Value	Std. Error	t value
a	0.3447650	0.3340140	1.03219
b	0.0579312	0.0131528	4.40448
d	0.0631223	0.0461166	1.36875

Table 2 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data for zone C. The data for 2004/05–2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87 – 2003/04.

Season	Recreational Catch (tonnes)	% of total lobster catch
1996/97	121	2.6
1997/98	192	3.6
1998/99	268	3.8
1999/00	340	4.0
2000/01	259	4.1
2001/02	234	4.9
2002/03	406	5.9
2003/04	369	4.3
2004/05	421	5.4
2005/06	316	5.6
2006/07	210	4.7
2007/08	270	5.6
2008/09	?	7.0
2009/10	?	7.5
2010/11	?	8.0

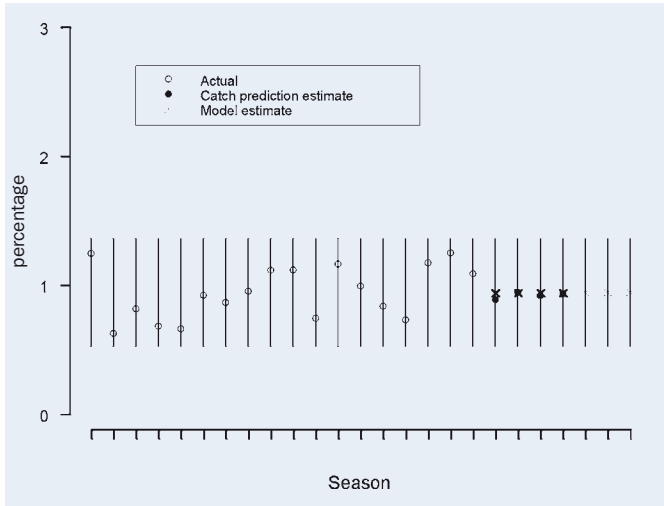


Figure 8 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone B. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

Formula: $p.cat \sim intercept$

Coefficients:

	Value	Std. Error	t value	Pr(> t)
(Intercept)	0.9415	0.0491	19.1839	0.0000

Table 3 Estimates of recreational catch levels and their proportion of the total lobster catch calculated using the adjusted mail survey data for zone B. The data for 2004/05–2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09–2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87–2003/04.

Season	Recreational Catch (tonnes)	% of total lobster catch
1996/97	41	0.7
1997/98	63	1.2
1998/99	61	1.0
1999/00	53	0.8
2000/01	38	0.7
2001/02	53	1.2
2002/03	63	1.2
2003/04	59	1.1
<i>2004/05</i>	53	0.9
<i>2005/06</i>	53	1.0
<i>2006/07</i>	53	0.9
<i>2007/08</i>	53	0.9
<i>2008/09</i>	53	0.9
<i>2009/10</i>	53	0.9
<i>2010/11</i>	53	0.9



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