INTEGRATED FISHERIES MANAGEMENT

ALLOCATION REPORT - WESTERN ROCK LOBSTER RESOURCE

Prepared by the Integrated Fisheries
Allocation Advisory Committee
for the Minister for Fisheries,
current as at June 2006

Fisheries Management Paper No. 218

FEBRUARY 2007

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GOVERNMENT OF WESTERN AUSTRALIA

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CONTENTS

1 SUMMARY OF RECOMMENDATIONS

The recommendations in this allocation report are summarised below. At the end of each recommendation, the number of the page where the recommendation appears in the document is given.

Recommendation 1 **Page**

(a) That allocation in the Western Rock Lobster Fishery proceed on the basis of the information made available to the IFAAC as of May 2006, in accordance with Guiding Principle (iii)[1].

(b) That the Minister supports the IFAAC seeking further submissions from relevant parties and recommending to the Minister that the allocations be adjusted in the event that Department of Fisheries investigations suggest that the relationship between the mail survey and the phone diary survey used in the Allocation Report does not reflect the real relationship. **12**

Recommendation 2

That the allocations should be over the total area of the West Coast Rock Lobster Managed Fishery. **21**

Recommendation 3

That a consultative committee be formed to discuss and negotiate solutions to inter-sectoral conflict issues such as spatial and temporal separation. The committee should provide a report to the IFAAC on its recommendations within 12 months of its first meeting. **23**

Recommendation 4

That a re-allocation mechanism be developed and ready for implementation for the western rock lobster resource by 2009/2010 ..... **23**

Recommendation 5

That the Customary fishing initial allocation should be one tonne. **24**

Recommendation 6

That the recreational and commercial sector's allocations should be made on the predicted proportional catch shares in 2009/2010 (that is 4.9 per cent and 95.1 per cent respectively) **27**

Recommendation 7

That sectors should not be required to be managed to the recommended catch proportions prior to 2009/2010, subject to the total take not impacting on the sustainability of the stock. **27**

Recommendation 8

That the Department of Fisheries be requested to develop, in consultation with stakeholders over the next two years, the decision rules framework for management of western rock lobster allocations. This framework will need to be operational by 2009/2010 - the season in which the IFAAC has recommended allocations become binding. **29**

Recommendation 9

That the Executive Director of the Department of Fisheries be requested to develop, in consultation with stakeholders, the necessary institutional and governance arrangements to give effect to the Government's IFM policies contained in Guiding Principles vii[2] and x[3] (see section 3.1.3). **30**

Recommendation 10

That the Department of Fisheries be requested to give consideration to the necessary legislative changes and timelines to give effect to the future management of fisheries under IFM. **30**

[1] (iii) Decisions must be made on the best available information and where this information is uncertain, unreliable, inadequate or not available a precautionary approach will be adopted to manage risk to fish stocks, marine communities and the environment. The absence of or uncertainity in information should not be used as a reason for delaying or failing to make a decision.

[2] (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 involved if that group's catch increases above its allocation.

[3] (x) Managerial arrangement must provide users with the opportunity to access their allocation. There should be limited capacity for transferring allocations un-utilised by a sector for that sector's use in future years, provided the outcome does not affect resource sustainability.

1.1 Notes

The following notes provide additional information on the basis for some of the Committee's recommendations.

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 is providing advice on allocations of the western rock lobster resource that is currently permitted to be taken legally in 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).

Note 4:

The IFAAC has included recreational fishing by Indigenous people, as distinct from Customary fishing, as part of the broad recreational allocation, consistent with the Ministerial advice referred to in section 3.2.3.

Note 5:

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 6:

The IFAAC will make a recommendation to the Minister on inshore resource-sharing issues following receipt of the consultative committee's report.

Note 7:

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

Note 8:

The IFAAC notes that in the event that improved estimates of the recreational catch result in a change to the 4.9 per cent recreational allocation used to estimate the Customary take, there may need to be an adjustment to the allocation recommended for Customary fishing.

Note 9:

That the IFAAC endorses as a starting point the Department of Fisheries' proposed approach to managing allocations, using the five-year moving average as a performance indicator.

2 INTRODUCTION

This report, prepared by the Integrated Fisheries Allocation Advisory Committee (IFAAC), contains the committee's advice and recommendations to the Minister for Fisheries on allocations for the western rock lobster resource. The setting of explicit allocations to sectors (Customary, recreational and commercial) is integral to Integrated Fisheries Management (IFM) in Western Australia.

The IFAAC, consistent with its terms of reference (see section 3.1.4), commenced its investigations of allocations for the State's western rock lobster resource in late 2004. The process use by the IFAAC to develop its recommendations is explained below.

2.1 Process/consultation

The process the IFAAC has used to prepare this final report is summarised diagrammatically below.

Release of resource report by the Department of Fisheries in April 2005

▼

Investigation of allocation issues

▼

Release of draft allocation report by IFAAC in October 2005

▼

Public comment period November 2005 to March 2006

▼

Review of submissions

▼

Final report delivered to the Minister for Fisheries

Under the WA Government's policy on IFM (Paragraph 11, Appendix A), the Minister determines the process and timeframes for resolving allocations of each fish resource, 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 IFM report on the resource by the Department of Fisheries.

C. the IFM allocation process, which includes:

   Step 1. investigation of the allocation issue;

   Step 2. IFAAC settling a draft allocation report and releasing it for public comment;

   Step 3. IFAAC recommending allocations to the Minister for Fisheries; and

   Step 4. the Minister determining allocations.

D. determining mechanisms for future allocations between sectors.

In the case of western rock lobster, the first stage (point A above) of the process was unnecessary, as the Minister for Fisheries had 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, together with appendices H and I of this document (FMP No. 218) have 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 initial 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 in this step can be obtained from the sources provided in Appendix C.

The IFAAC's draft allocation report on western rock lobster was released in October 2005 as the basis for consultation. The IFAAC also arranged for public meetings to brief fishers and interested members of

the community on the committee's recommendations. The approach taken to consultation is provided in detail in Appendix D.

The approach the IFAAC took to dealing with the submissions that it received following the release of its draft report (Stage C, Step 2) is explained in the next section.

2.2 Submissions

The IFAAC received 47 submissions on its draft allocation report for western rock lobster that was released in October 2005 for public comment. A list of those people or organisations who made a submission are provided in Appendix E.

A reference is only made to submissions in the text of this report where necessary to provide further background to the IFAAC's deliberations or where it led to the Committee changing a recommendation contained in its draft allocation report.

Box 1 Fisheries Management Paper No. 192

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

Other key documents on the western rock lobster sustainability include the annual *State of the Fisheries Report* and the *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 of the particular fishery.

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 (overall) sustainable harvest level for western rock lobster (i.e. the catch taken by all sectors) in the range between 9,500 tonnes and 15,000 tonnes.

The objectives for the management of the commercial fishery are given in FMP No. 192 (page 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 of Fisheries manages the exploitation rate of western rock lobster through the use of controls on fishing effort and biological controls (such as size limits and preventing the take of setose and tar-spotted lobsters) 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

3 BACKGROUND

The introduction of Integrated Fisheries Management (IFM) is the most recent development in the management of fisheries in Western Australia. 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.

In summary, IFM involves:

- setting a 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 re-allocation of catch shares between sectors.

The WA Government, in its 2005 election commitments, listed western rock lobster as one of the first four fish resources to be brought under the IFM framework.

3.1 The Integrated Fisheries Allocation Advisory Committee

The Government released its IFM Policy in October 2004. The policy refers to the establishment of an IFAAC to provide the Minister for Fisheries with advice on allocations for fish resources (paragraph 8 to 13).

The Minister for Fisheries established the 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.

3.1.1 Membership

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

Mr McKiernan represented Western Australia in the Australian Parliament for nearly 18 years. During this time he served upon, and was Chair of a number of Senate and other Parliamentary committees. Mr McKiernan has considerable experience in interacting with community groups and stakeholders. He is a sessional member of the State Administrative Tribunal, a Justice of the Peace and a member of the board of the Disability Services Commission. Mr McKiernan replaced the inaugural IFAAC Chair Mr Murray Jorgensen on 1 March 2006.

George Kailis is Professor of Management and Executive Dean of the College of Business of the University of Notre Dame and is also 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 the Chair of the Australian Seafood Industry's Native Title Working Group, a member of the Pearling Industry Advisory Committee and is on the Federal Government's National Oceans Advisory Group. He has previously been a Director of both the Australian Fisheries Management Authority and the Fisheries Research and Development Corporation.

Mr 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.

3.1.2 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 meeting and the member did not vote on the matter.

It should be noted that two members and the previous Chairman of the IFAAC hold a current recreational rock lobster licence and that Professor George Kailis has an interest in the commercial rock lobster industry as a shareholder and Director of the MG Kailis Group.

3.1.3 Guiding principles

The Minister provided the IFAAC with the following *Guiding Principles and Terms of Reference.* The WA 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 the best available information and where this information is uncertain, unreliable, inadequate or not available, a precautionary approach will be 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 fishery[4] 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.

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.

3.1.4 The IFAAC's Terms of Reference

Taking into account the principles detailed above, the IFAAC is to investigate fisheries resource allocation issues, and provide advice and recommendations to the Minister on matters related to optimal resource use. In particular, the IFAAC is to 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).

[4] 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.

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 current and previous Ministers for Fisheries have 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.

3.2 Ministerial advice

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

3.2.1 Customary allocation

The then Minister for Fisheries, Kim Chance MLC, provided guidance with respect to the Customary fishing sector in a letter to the IFAAC (see Appendix F). 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

Paragraph 19 of the Government's IFM policy refers to formalising existing catch shares as a basis for future allocation discussions using the best available catch information over the five-year period of 1997-2001. There are a number of issues that are associated with using the 1997-2001 period to formalise catch shares including:

a. The quality and availability of catch data for some fish resources is poor for the period 1997-2001 (particularly for the recreational sector).

b. As time goes on, the period 1997-2001 will be increasingly further away from the date of determination of allocations.

c. It is arguable that paragraph 19 could be interpreted to simply mean that it is just a matter of estimating the catch shares over the period 1997-2001 using the available data and making determinations based on that calculation.

The IFAAC considered these issues and resolved to advise the Minister that the following approach should be adopted regarding paragraph 19 of the IFM Government policy:

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 3.1.3).

The Minister approved[5]

> *"...the IFAAC proceeding to consider allocations on the basis of its resolution."*

3.2.3 Allocation to the non-fishing sector

The current Minister for Fisheries, Hon Jon Ford JP MLC, has advised the IFAAC that he does not expect to be provided with a recommendation on allocations to non-extractive users of the resource. Specifically the Minister has advised the Committee that:

1. The IFM initiative was designed to determine allocations between commercial, recreational

[5] Extract from letter from the Minister to the IFAAC of 1 April 2005.

(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 G).

> **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.

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 3.1.3).
5. 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.
6. 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.

3.3.1 Data uncertainty

The IFAAC has used the Department of Fisheries' '*Best Estimates of the Western Rock Lobster Recreational Catch*' (Appendix H) and the long-term growth trends in recreational rock lobster catch (Appendix I) 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.

The Department of Fisheries does not believe that the existing recreational catch estimates should be relied upon to determine the allocation. The Department has recommended that the initial allocation should be based on the improved data gathered in 2006/07, 2007/08 and 2008/09 to estimate the catch shares (Department of Fisheries' submission on the Draft Allocation Report, Department of Fisheries website).

The IFAAC does not accept the Department of Fisheries position as it believes that it is important for a decision to be made (see section 3.3) and the position is inconsistent with the Guiding Principles (iii) which states in part that -

> *"The absence of, or uncertainty of in, information should not be used as a reason for delaying or failing to make a decision."*

The IFAAC has relied upon the models in Appendix I, based on long term trends in catch proportions over the period 1986/87 – 2003/04, to estimate the trend in catch shares. The IFAAC has accepted this methodology as the basis for estimating catch proportions.

The recreational catch estimates used to estimate catch proportions for the period 1986/87 to 2003/04 are based on a conversion factor between the mail and phone recall surveys (see section 4.2 for more discussion on conversion factors). If it were demonstrated there was an error made in estimating the conversion factor, then this would be sufficient justification for the IFAAC to warrant the adjustment of the initial allocations under IFM because the catch proportion estimates would have been incorrect.

In the event that the Department's investigations suggest that the conversion factor used in the models (Appendix I) needs to be updated, the IFAAC

will seek further submissions from relevant parties and recommend to the Minister that the allocations be adjusted. However, in the interest of certainty it should be noted that the IFAAC does not propose to alter the methodology to include catch data post-2003/04.

As there is a compelling public interest in the need to provide long-term certainty under IFM, this opportunity for adjustment should not continue indefinitely and a reasonable 'sunset period' up to 2009/10 should be sufficient for this purpose.

Recommendation 1:

That allocation in the Western Rock Lobster Fishery proceed on the basis of the information made available to the IFAAC as of May 2006, in accordance with Guiding Principle (iii). That the Minister supports the IFAAC seeking further submissions from relevant parties and recommending to the Minister that the allocations be adjusted in the event that Department of Fisheries investigations suggest that the relationship between the mail survey and the phone diary survey used in the Allocation Report does not reflect the real relationship.

3.3.2 Optimising benefit to the community

Guiding policy viii (see section 3.1.3) 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.

A social assessment of coastal communities hosting the western rock lobster fleet was published in January 2006 as Fisheries Management Paper No. 211 (Department of Fisheries, 2006b). However as a key objective of the study was to establish a database of social indicators that would contribute to the assessment of alternative management options for the commercial fishery, it has 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.

The IFAAC is of the view that environmental factors including allocations to non-extractive users should largely be taken into account when the Executive Director of the Department of Fisheries sets the sustainable harvest level.

The IFAAC recognises that under the Government policy it must give consideration to community benefit optimisation. In general, the commercial fishery for western rock lobster is a very valuable one and creates economic and social benefits to that section of the community involved in the industry. In comparison, the recreational fishery for western rock lobster involves smaller economic activity, but creates a social benefit to the relatively larger number of people that are involved in the fishery.

In the absence of appropriate information, the IFAAC was unable 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 borne 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.

Nevertheless, the principles of IFM make it clear that specific shares for each sector should be determined.

The proposed IFM allocation is seen as an essential first step that will facilitate progress toward the objectives outlined in the WA Government's policy on IFM. The policy recognises the problem of a lack of information on social, economic, cultural and environmental factors (see Guiding Principle viii, section 3.1.3).

3.4 Description of the Fishery

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

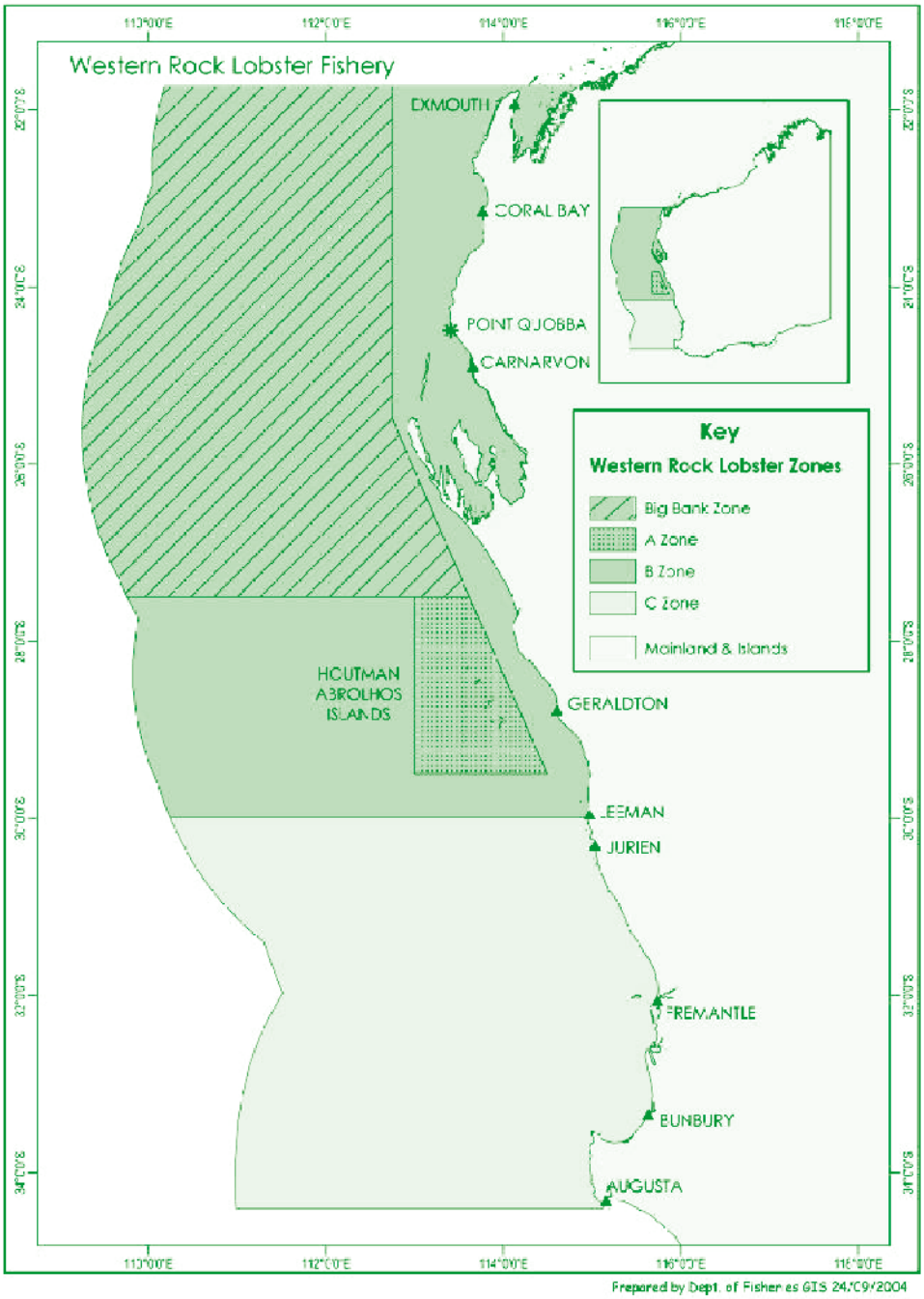
The WCRLMF is the area over which the IFAAC is providing advice on western rock lobster allocations. Although western rock lobsters are found in lower densities along the south coast to the east of Augusta and occasionally north of Exmouth, the IFAAC has not been requested to make recommendations for 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 (Figure 1). In an overall sense, the fishing season in the WCRLMF runs from 15 November to 30 June the following year, but the fishing season actually differs from zone-to-zone. Specifically:

- Zone A is open from 15 March to 30 June;
- Zone B is open from 15 November to 30 June of the following year, with a mid-season closure 15 January to 10 February; and

Figure 1 Management boundaries for the commercial West Coast Rock Lobster Managed Fishery.



- Zone C is open from 25 November to 30 June of the following year, with a three-day full moon closure in each month from February to 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 licences 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 3:

The IFAAC is providing advice on allocations of the western rock lobster resource that is currently permitted to be taken legally in 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 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 put in place to assist Indigenous people to take advantage of opportunities in the marine sector. The NNTT has also advised the IFAAC that the appropriateness of such a definition was part of ongoing discussions and negotiations at a national and state level.

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 4:

The IFAAC has included recreational fishing by Indigenous people, as distinct from Customary fishing, as part of the broad recreational allocation, consistent with the Ministerial advice referred to in section 3.2.3.

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.[6] There is no limit to the number of recreational rock lobster licences issued.

Licences are issued for a 12-month period from the date of issue on application and payment of $32 for a specific rock lobster licence and $75 for an umbrella licence (which covers all licensed recreational fisheries, including rock lobster). In 2003/04, about 47,345 rock lobster recreational licences were issued, with 33,600 (about 71 per cent) being used (FMP No. 192, p.55). Anyone other than holders of commercial fishing licences may apply for a recreational rock lobster licence.

[6] Aboriginal persons are not required to hold a recreational fishing licence under section 6 of the FRMA.

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. Charter boats and recreational boats are limited to eight lobsters per licensee per day and a maximum of 16 lobsters per boat per day. The take of western rock lobster from dive charter boats is very small.

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

3.5.3 Commercial

The IFAAC considers the commercial fishing 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, and 69,282 units are 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 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, which was $134 per unit for the 2004/05 season. Further details of the commercial fishing sector are provided in FMP No. 192.

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 WA. 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 has chosen not to recommend an allocation to the aquaculture sector. If in the longer term an aquaculture industry emerges that is based on harvesting wild animals, then some policy development within the context of IFM may be required.

Note 5:

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

In accordance with WA Government Policy paragraph 5 (iii), the IFAAC is obliged to use the best available catch information and is directed that uncertainty in relation to that information should not be used as a reason for delaying or failing to make a decision.

The principal source of data that the IFAAC has used in considering its advice on allocations is FMP No. 192. Important additional information became available to the IFAAC after 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 H). 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 I).

4.1 Customary

The Department of Fisheries did not provide any specific information as to Customary fishing (see section 3.5.1 for definition) for western rock lobster in FMP No. 192. The National Native Title Tribunal has helpfully 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 of western rock lobster by Customary fishing.

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 the IFAAC prepared its draft allocation 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 repeated 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 H). This research paper indicated that the mail survey over-estimated the recreational catch by a factor of 1.90.

It is argued that this over-estimation of the catch in the mail survey results from a combination of recall and non-response bias.

The Department of Fisheries' 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 Department provided the IFAAC with the results of the 2004/05 recreational catch surveys in January 2006 (see Appendix J). Unexpectedly, the adjustment factor from the mail to the phone recall survey for 2004/05 was estimated to be 3.6, giving an adjustment factor of 2.23 when combined with the factor estimates from 2000/01 and 2001/02.

The recreational catch estimate was lower than expected, due to a lower than expected participation rate and fewer than expected days fished by participants in the phone diary survey.

Given the results from the 2004/05 phone diary survey, the Department formed the view that the 1.9 adjustment factor should continue to be used as an interim arrangement to estimate the recreational catch from the mail survey estimate until more reliable estimates of the recreational catch were available. The Department added that at least another five years of comparisons would be required to obtain a reliable estimate of the adjustment factor.

Further, the Department advised in its submission on the Draft Allocation Report (available from the Department of Fisheries – see reference 2006a) that the initial allocation should be based on the improved data gathered in 2006/07, 2007/08 and 2008/09 to estimate the catch shares for the 2009/10 season.

For a discussion of the implications of the Department's advice regarding the adjustment factor please see section 3.3.1 (of this document) that discusses data uncertainty.

The estimates of the recreational catch by zone from 1996/97 to 2003/04 using the adjusted data based on the 1.9 adjustment factor are given in Table 2.

Table 2 Recreational catch estimates in tonnes, from each zone within the West Coast 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.52[7]).

[7] 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 West Coast 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

An indication of the long-term trend in the recreational and commercial catches of western rock lobster is illustrated in Figure 2. The trends are shown by a five-year moving average catch using the data available from 1986/87, used by the Department in estimating catch proportions (see Appendix I).

Figure 2 illustrates that there has been a long-term increase in the catch of both sectors. Although there has been a trend for the percentage of the catch taken by the recreational sector to increase over time, there has also been a trend for the catch of the commercial sector to increase by a greater amount than that of the recreational sector.

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 H).

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

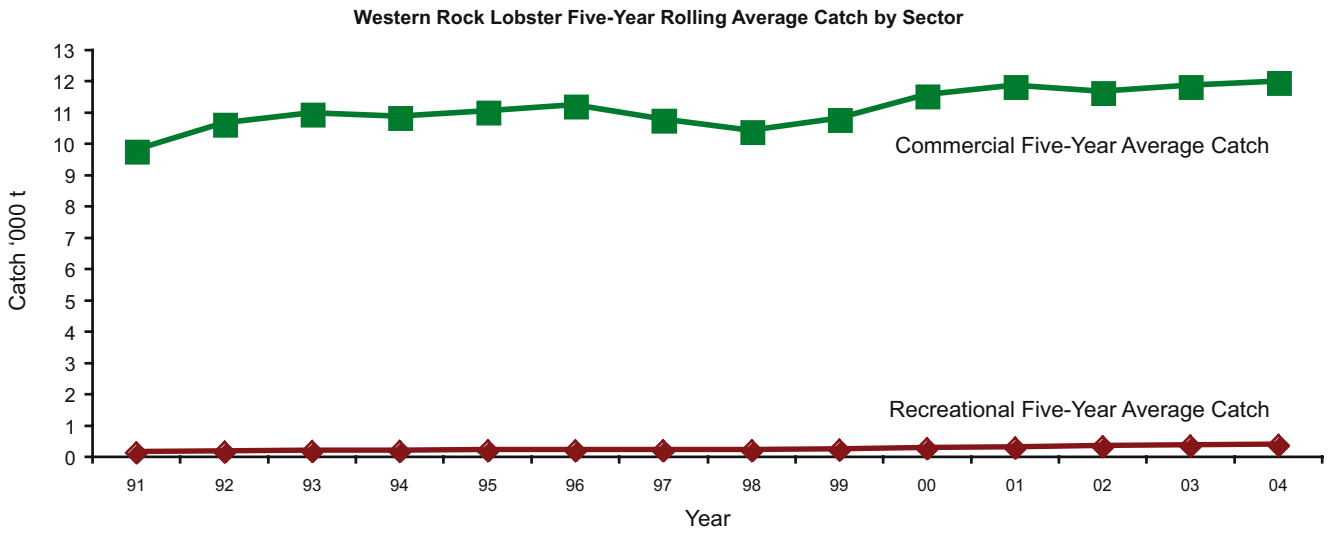
Season	Recreational % of the catch		
	Zone A/B	Zone C	ALL Zones
1996/97	0.7	2.6	1.5
1997/98	1.2	3.6	2.4
1998/99	1.0	3.8	2.5
1999/00	0.8	4.0	2.6
2000/01	0.7	4.1	2.5
2001/02	1.2	4.9	3.1
2002/03	1.2	5.9	3.9
2003/04	1.1	4.3	3.1

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 zones 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.

Figure 2 Long-term trends in the catch taken by the commercial and recreational sectors.



The recreational proportion of the catch is predicted to decline from 3.5 per cent to 2.6 per cent over the period 2004/05 to 2006/07 (Appendix H) because the recreational proportion of the catch declines in years of lower stock availability (source: FMP No. 192, p.64).

Recreational fishers in Zone C take a higher proportion of the total catch than in Zones A/B combined. On average, over the period 1996/97 to 2000/01 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).

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 H), but it is expected to be relatively stable at between 0.9 per cent and 1.0 per cent in Zones A/B.

The IFAAC notes that most of the recreational fishing activity for western rock lobster is in waters shallower than 18 metres. Incorporating the correction factor for the phone diary method, the recreational catch has been estimated to be approximately 13 per cent[8] of the commercial catch in the Perth metropolitan and Rottnest Island areas, increasing to 37 per cent[9] of the commercial catch in waters shallower than 18 metres (FMP No. 192, p.59).

[8] The figure was reported as 25 per cent in FMP No. 192 - the IFAAC applied the adjustment factor of 1.9 from Appendix H to arrive at the 13 per cent estimate.

[9] The figure was reported as 70 per cent in FMP No. 192 - the IFAAC applied the adjustment factor of 1.9 from Appendix H to arrive at the 37 per cent estimate.

5 KEY ALLOCATION ISSUES

In determining its recommendations on the allocations, the IFAAC was mindful that its recommendations are being made for the purposes outlined in section 3.1 and not for sustainability purposes, the later for which the Minister for Fisheries and the Executive Director have responsibility 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 key issues:

- the spatial scale of allocations at the macro level (i.e. should the allocations be by major regions - north and south - or over the entire fishery?);
- whether there should there be smaller scale spatial and/or temporal allocations; and
- the introduction of a re-allocation mechanism.

Each key issue is discussed below.

5.1 Allocations at the macro level

A 'whole-of-fishery' allocation versus an allocation for two regions (north and south) was a major consideration for the IFAAC that required resolution prior to moving forward to consider the actual allocations.

5.1.1 Background

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 each zone.

Until recently the same management rules have applied 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 management arrangements have changed recently, with the introduction of commercial management packages aimed at reducing fishing effort for sustainability reasons by about 15 per cent in the north and five per cent in the south. These management changes represent a significant shift in management direction – moving from a whole-of-fishery basis to management on a zonal basis.

The recreational fishery for western rock lobster is not managed by zone, with the same recreational rules applying across the whole of the fishery with the exception mentioned above of the maximum size rule. The recreational sector was not required to reduce its fishing effort when the recent reductions to the commercial sector's fishing effort were introduced.

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 south.

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. The metropolitan coast from Mandurah to Two Rocks would appear to best represent the major western rock lobster recreational fishery.

The establishment of a Perth metropolitan zone, which would suit the needs of the recreational sector, was considered and rejected because there was a lack of information to determine the potential impacts.

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

Under an overall whole-of-fishery option, the commercial sector would continue to be managed on a zonal basis while the recreational sector would be managed on whole-of-fishery basis. This arrangement would not preclude different management arrangements applying between commercial fishing zones for the recreational sector as it does now (e.g. the differing maximum size), but the catch taken by each sector should be managed to the overall allocation. Some consideration would need to be given to the impact the proposed management changes could have on catch shares.

Under the catch shares-by-region option, the commercial and recreational sector would be allocated different proportions in the northern region (Zones A/B) and the southern region (Zone C) of the West Coast Rock Lobster Managed Fishery.

5.1.2 Discussion

In moving to a more complicated management model (two regions) for recreational fishing, the IFAAC needed to be convinced that the advantages were sufficient to outweigh the disadvantages. A discussion of the advantages and disadvantages of the two approaches and other relevant matters on this issue are provided below.

Some of the advantages of allocations by two regions were that it:

- limits the impact that management action in one region would have on recreational fishers in the other region;
- is more likely to facilitate the development and implementation of re-allocation mechanisms over time; and
- complements the draft decision rules framework for the fishery, which relates to managing the breeding stock above a certain level in each zone.

Some of the disadvantages of allocations by two regions were:

- In the long term, recreational licensing may become more complicated (e.g. different bag limits and fishing periods may apply to different zones).
- The cost of estimating the recreational catch would increase substantially if a precise estimate of the recreational catch was required for the northern region.
- The addition of new layers of complexity in management and compliance that currently do not exist in the recreational sector.

The IFAAC also took into account the following factors:

- There was support for a two-region model from the commercial sector, but mixed views from the recreational sector. The Department of Fisheries supported a single region approach (Department of Fisheries 2006a).
- A whole-of-fishery allocation provides the flexibility to change to regional allocations in the future if necessary.

An advantage that a two-region allocation may have over a whole-of-fishery allocation when a market mechanism for re-allocation is implemented is that the trades would be restricted to the entitlement held within the appropriate region. The IFAAC considered this issue and formed a view that, on balance, a whole-of-fishery allocation approach would be preferable, with the proviso that the trading of allocations for the recreational sector resulted in:

- tangible and direct benefits in the areas of greatest concern and a linked mechanism for spatial trade-off against purchases; and
- trade-offs that dealt with the significant areas of resource sharing conflicts.

In practice, if the recreational sector was negotiating over a trade with the commercial sector it would be unlikely to agree to a trade unless it could be assured that the benefits of a transaction would flow to its sector.

In summary, the IFAAC resolved to recommend an allocation over the entire fishery, given the:

- benefits of a two-region model were not considered to be sufficiently significant at this stage;
- proviso that the recreational sector realises the direct benefits of any trading of allocations; and
- flexibility to change to regional allocations in the future remained an option under an allocation over the entire fishery.

The IFAAC acknowledges that neither a whole-of-fishery allocation or an allocation by region adequately addresses the issues of temporal and spatial competition at a local level.

Recommendation 2

That the allocations should be over the total area of the West Coast Rock Lobster Managed Fishery.

5.2 Smaller 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 3.1.4).

The IFAAC has been advised by major stakeholders that the issue of spatial and temporal competition in Zone C for inshore 'white' lobsters during November/January is a major resource-sharing conflict. 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."*
>
> *"...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."*

The Western Rock Lobster Council (WRLC) identified:

> *"... significant spatial conflict during the 'whites' run in C Zone..."*

One obvious strategy to overcome competition or this type of resource-sharing issue is to use spatial and temporal closures to eliminate the conflict, 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.

Recreational lobster fishing is carried out in water less than 18 metres deep and is concentrated on the Perth metropolitan coast, with some much smaller concentrations of activity occurring at Jurien Bay and Geraldton (Fig. 18, FMP No. 192, p61).

If recreational fishers continue to operate in a small part of the fished area, they can be expected to increasingly compete with one another so that even over a long period the recreational catch is likely to plateau.

Given the very seasonal nature and limited area of recreational fishing for rock lobsters, it may be possible to introduce spatial closures for limited periods of time. This approach may require the recreational sector to introduce other management measures to restrict their fishing effort if it proved that they were exceeding their allocation.

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 system (GPS) devices on recreational fishing vessels. The IFAAC also noted that there has not been a thorough analysis of the management implications and compliance costs for a closures of this kind.

Given the advice from stakeholder groups on the source of conflict and the submissions from the recreational sector on proposals to create recreational priority fishing areas, the IFAAC has formed a view that a genuine resource sharing conflict does exist in some inshore areas of 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 these closures.

The IFAAC believes that once the commercial and recreational sectors are assured of their shares of the resource, there is a much better chance of resolving conflicts such as over the "whites run" through negotiation.

Given the importance of this issue and that there is not currently a suitable inter-sectoral forum for recreational and commercial fishers (see also Recommendation 9), the IFAAC believes that it should provide advice on the process and timeframes for negotiations. Accordingly, the IFAAC recommends the establishment of a consultative committee to report to it, within 12 months of its first meeting, on its recommendations for addressing resource sharing conflicts by using spatial and temporal arrangements. The proposed terms of reference and membership of the committee are contained in Appendix K.

The IFAAC, after consideration of the report from the proposed consultative committee, will make a recommendation to the Minister on how to address this resource access conflict through spatial and temporal separation of the sectors.

Recommendation 3

That a consultative committee be formed to discuss and negotiate solutions to inter-sectoral conflict issues, such as spatial and temporal separation. The committee should provide a report to the IFAAC on its recommendations within 12 months of its first meeting.

> Note 6:
>
> The IFAAC will make a recommendation to the Minister on inshore resource sharing issues following receipt of the consultative committee's report.

5.3 Re-allocation

The establishment of a re-allocation mechanism is integral to the implementation of IFM and to the achievement of optimal benefits to the Western Australian community. A re-allocation mechanism is necessary because, over time, optimal allocations will vary. In the absence of a re-allocation mechanism under paragraph 18 of the WA Government's policy on IFM, sectors would be required to be managed within their allocated catch shares.

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 re-allocations, along with due consideration of social equity considerations, as soon as practical ..."*

The re-allocation mechanism is referred to in the IFAAC's Additional Guiding Principles 5 and 6, which are reproduced below for convenience:

> *"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 (principle 5).*
>
> *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 (principle 6)."*

A market-based mechanism has 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 allocations are implemented the recreational sector had exceeded its IFM allocation, then the Government on behalf of the recreational sector could go into the market and trade for commercial pot entitlements equivalent to what was required to allow for additional recreational catch share. The system would work in reverse if the commercial sector exceeded its allocation of the catch share.

The recreational sector in their submissions raised significant objection to meeting the total cost of purchasing additional shares of the rock lobster resource that were required only by an increase in the recreational fishing population.

The Department has informed the IFAAC that a re-allocation mechanism could be introduced by 2009/10, which is within the five-year period specified by IFAAC in its guiding principles.

To ensure that a re-allocation mechanism is introduced within this timeframe, the IFAAC will be cooperating with the Department of Fisheries to develop, as a matter of priority, a re-allocation mechanism for consideration by the Minister.

Recommendation 4

That a re-allocation mechanism be developed and ready for implementation for the western rock lobster resource by 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 F) 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 of the total coastal population. Assuming that the Indigenous population participates 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 3.1.3), as this is a very small percentage of the western rock lobster catch, the committee 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 Customary allocation.

Using this method, an allocation of one tonne (0.0085 per cent of 11,500 tonnes) would be the initial priority Customary allocation for the Indigenous sector. This will be subject to review if 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 7:

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

Note 8:

The IFAAC notes that in the event that improved estimates of the recreational catch result in a change to the 4.9 per cent recreational allocation used to estimate the Customary take, there may need to be an adjustment to the allocation recommended for Customary fishing.

Recommendation 5

That the Customary fishing initial allocation should be one tonne.

6.2 Recreational and commercial sectors

The IFAAC detailed four options[10] in its draft allocation report that could be used to determine the allocations for the commercial and recreational sectors. The four options were:

Option 1: *Allocations at the average proportion over the period 1997– 2001.*

Option 2: *Allocations at the average proportion of the last three seasons (status quo).*

Option 3: *Allocations at the proportion it is expected to be in 2009/10, allowing for growth in line with the long-term trend in recreational catch share.*

Option 4: *Allocations at a proportion which will allow for long-term growth in population and estimated growth in recreational activity.*

A summary of the recreational proportional allocations that would result from each of the four options under a whole-of-fishery allocation is provided in Table 5 below.

The submissions received on the draft allocation report provided a mixed response on their preferred option. Recreational fishers almost universally supported Option 4. The Western Rock Lobster Council strongly supported Option 1, whilst the Zone C Professional Fishermen's Association preferred Option 2. Some stakeholders agreed with Option 3 with provisos.

The IFAAC has considered the submissions on the draft allocation report and provides the following discussion on each of the options and the merits of implementing each option in the context of the WA Government's policy on IFM and the IFAAC's Guiding Principles.

6.2.1 Option 4

Option 4 is based on the principle that the recreational sector's catch proportion should continue to grow until it reaches a limit. Recfishwest 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 eight per cent of the sustainable harvest level for the resource would be equivalent to about twice the recreational sector's current catch share.

Recfishwest proposed 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.

The RFAC, in its submission on the draft allocation report, has now proposed a higher initial allocation of 20 per cent for recreational fishers across the fishery.

A number of submissions from the recreational sector on the draft allocation report supported the principle of continued growth in the recreational sector up to a certain limit. The limits proposed varied, but ranged up to 20 per cent.

The Recfishwest and RFAC propositions and other submissions from the recreational sector would, if adopted, amount to a significant change to catch shares compared with the 1996/97-2000/01 catch shares.

The IFAAC in developing its additional guiding principle 3 – *"Allocations should not have the effect of merely deferring a decision indefinitely"* (section 3.3) - was mindful that any target needed to be a realistic and meaningful, so that the allocations would represent the likely sector shares within a specified timeframe (say, five years). If the target was set too high, on current growth projections, the implementation of IFM would in fact be deferred for many years.

The Government policy is predicated on determining an allocation, monitoring the take of the sectors and managing each sector's take within their allocation in such a way that will not compromise future sustainability of the fishery. Setting the allocation for

Table 5 The recreational sector's whole-of-fishery proportional allocation for each allocation option discussed in the draft allocation report.

Recreational Sector's Proportion of the Catch (%)				
Option 1 (96/97–00/01) WAFIC & WRLC	**Option 2 (01/02–03/04)**	**Option 3 (2009/10)**	**Option 4**	
			Recfishwest (20 years)	**RFAC[11]**
2.3	3.4	4.9	8	10-20

[10] A detailed description of the four options is contained in the draft allocation report.

[11] RFAC in its initial submission proposed a 10 per cent proportional allocation, but in its submission on the draft allocation report proposed a 20 per cent proportional allocation.

the recreational sector well above the current levels would be inconsistent with IFAAC's guiding principle 3 and the WA Government's IFM policy commitment to the implementation of an integrated management system for the sustainable management of Western Australia's fisheries. Therefore the IFAAC believes that Option 4 should not be adopted or recommended.

6.2.2 Options 1 and 2

The IFAAC believes that strictly adhering to implementing paragraph 19 (i.e. Option 1) of the Government Policy to determine the allocations is taking a narrower view than the more pragmatic approach the IFAAC proposed to the Minister as appropriate. The Minister has endorsed the IFAAC taking a broader view to considering allocations, as outlined in section 3.2.2.

One of the considerations that the IFAAC believes is important is the principle (section 3.3) of endeavouring to avoid recommendations that may have the effect of impacting on a sector before the option of a re-allocation mechanism becomes available.

Both Options 1 and 2 are similar in that they could have an immediate impact on management of a sector, albeit that Option 1 could impact on the recreational sector and Option 2 could impact on the commercial sector, in the short term.

The introduction of Option 1 in 2006/07 may require immediate management intervention well ahead of the development and agreement between the sectors and Government on a re-allocation mechanism that is proposed for introduction in 2009/10. The recreational sector may be required to significantly reduce its take, given that growth in participation in recreational rock lobster fishing has resulted in the recreational proportion of the catch now being estimated to be significantly higher[12] than during the 1997 – 2001 period.

Similarly, the introduction of Option 2 in 2006/07 may result, in the short term, in the need for management intervention to reduce the commercial sector's fishing effort because it is expected to exceed its projected allocation. In the medium term, it may require management of the recreational sector to reduce its catch.

The immediate introduction of allocations will not allow sufficient time for "the implementation of appropriate management structures and processes" to manage the recreational sector within its allocation and the development of decisions rules (see Recommendation 9 and Government Policy paragraph 5 vii).

On balance, the IFAAC's view is that adopting Option 1 or 2 is inconsistent with the IFAAC's guideline 6.

6.2.3 Option 3

Option 3 is the IFAAC's preferred option.

The IFAAC has proposed proportional allocations for 2009/10 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).

The IFAAC formed a view that Option 3 represents a pragmatic and incremental approach, in accordance with Government Policy and the additional guiding principles adopted by the IFAAC (section 3.3).

The adoption of Option 3 provides for an allocation that will be binding in a reasonable timeframe, while allowing a transition period that should not significantly disadvantage either sector and allows for:

- the development and implementation of a re-allocation mechanism;
- the formation of a consultative committee to discuss and negotiate solutions to inter-sectoral conflict issues, such as spatial and temporal separation (Recommendation 3); and
- the establishment of suitable governance and institutional arrangements (Recommendation 9).

Based on the analysis provided by the Department of Fisheries (Appendix I), the proportion of the recreational sector's catch in 2009/10 would be 4.9 per cent. For the period up to 2009/10, the commercial fishery should not be disadvantaged as the recreational proportion of the total catch is predicted to decrease for the next two seasons.

For the period after 2009/10, the commercial sector, although disadvantaged to the extent that the proportion allocated to it is less than its catch share over the period 1997 – 2001, has an offsetting benefit arising from the increased certainty and quality of their rights through the proper implementation of IFM.

The recommended arrangements are based on allowing a reasonable time for implementation of an appropriate market-based re-allocation system (2009/10). It should be noted that in the absence

[12] 3.0 per cent in 2004/05 compared with 2.3 per cent over the period 1997-2001.

of action being taken for re-allocation under a market mechanism, then each sector would be expected to be managed within its catch share in accordance with Guiding Principle vii (see section 3.1.3).

In summary, although the recreational sector will have their total catch explicitly restricted for the first time, they will not suffer any immediate management consequences and there would be a mechanism for increasing their share consistent with IFM through a mechanism to be developed by 2009/10.

In relation to the commercial sector, they also should not suffer management consequences as a result of the allocation recommendation until 2009/10 at the earliest. In addition, although there is a difference between relative catch shares in 1997–2001 to that projected in 2009/10, there is an offsetting benefit to the commercial sector from improved certainty, including their share of the resource arising from the restriction placed on growth of the recreational catch by the implementation of IFM.

Out of the four options presented in the draft allocation report, the IFAAC believes that, on balance, Option 3 is, as discussed above, more closely aligned to Government policy and to the IFAAC's guiding principles than the other options.

Recommendation 6

That the recreational and commercial sector's allocations should be made on the predicted proportional catch shares in 2009/10 (that is 4.9 per cent and 95.1 per cent respectively).

6.3 Decision rules prior to 2009/10

The IFAAC notes that management arrangements must provide users with the opportunity to access their allocation (Guiding Principle, x - see section 3.1.3) and these arrangements should be introduced to manage each user group within their prescribed allocation (Guiding Principle vii, see section 3.1.3).

Until 2009/10, the Executive Director of the Department of Fisheries should manage the sectors according to broad IFM principles, in particular to paragraph 18 of the WA Government's policy on IFM.

Provided users have the opportunity to access their allocation prior to 2009/10, the IFAAC does not expect that sectors should be required to be managed to the recommended levels prior to 2009/10, subject to the total take not impacting on the sustainability of the stock.

This may mean that the commercial sector will take greater than 95.1 per cent of the total catch, in line with the Department of Fisheries' prediction that the recreational proportion of the catch will decline over the next two seasons (Appendix H). It is the IFAAC's view that allowing the commercial sector to take greater than 95.1 per cent in the period up to 2009/10 would offset to some extent the impact of setting the proportion at the predicted level in 2009/10.

Recommendation 7

That sectors should not be required to be managed to the recommended catch proportions prior to 2009/10, subject to the total take not impacting on the sustainability of the stock.

7 OTHER ISSUES

7.1 Monitoring allocations

The main issue with monitoring allocations is obtaining an accurate estimate of the recreational catch. The method used by the Department of Fisheries involves surveying recreational fisheries by mail at the end of the season and then adjusting the estimate obtained using the results from a telephone diary survey of fewer people.

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 telephone 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 has advised the IFAAC that it will improve the estimates of the recreational catch based on the current survey methodology and implement field validation to check for bias of the estimates. The IFAAC understands the importance of having accurate estimates of the recreational catch in order to monitor catch shares, and appreciates the Department of Fisheries undertaking to improve the recreational catch estimates.

7.2 Management of allocations

The two relevant Government principles regarding management of allocations are:

Guiding Principle vii (see section 3.1.3) 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 if that group's catch increases above its allocation."*

and Guiding Principle x (see section 3.1.3) states that:

> *"Management arrangements must provide users with the opportunity to access their allocation…"*

The IFAAC acknowledges that under the IFM Guiding Principles, ongoing management of allocations is the role of the Minister and the Department of Fisheries. However, stakeholders in their submissions on allocation have emphasised the importance to them of clarity as to future arrangements.

The Department of Fisheries has referred to the difficulty of managing allocations on a year-to-year basis. For example, there can be significant variations in catch shares from year-to-year, due to changing abundance from recruitment or resulting from transient changes in the spatial distribution of effort of the sectors across the fishery.

The Department has proposed that allocation management decision rules be developed by expanding the decision rules framework that has been developed for sustainability in the commercial sector. A five-year moving average has been recommended as the performance indicator for catch shares, with a one per cent (of the overall sustainable harvest level) tolerance around the catch shares.

The IFAAC interprets this to mean that, in any one year, if a sector's catch share is within plus or minus one per cent of its allocation, then typically remedial action would not be required.

The IFAAC generally endorses the Department of Fisheries' proposed approach. In its view, it was never intended that resource re-allocation would occur on a 'real time' basis, but that the processes adopted would deal with trends in the utilisation of fish resources over time, reflecting long-term and enduring changes not short-term fluctuations. It is recognised that it will be a significant challenge to find a set of principles/performance indicators that incorporate the best and latest information in relation to year-to-year variation in catches, while setting in place longer-term decision rules and adjustment processes.

Although the IFAAC supports the use of a five-year moving average and a one percent tolerance, the IFAAC also recommends that a broader decision rules framework for managing allocations be developed in consultation with stakeholders over the next two years. This framework will need to be operational by 2009/10 - the season that the IFAAC has recommended allocations become binding.

In making this recommendation, the IFAAC notes that a reliable estimate of catch shares will be required for each season commencing with the 2005/06 season, so that by the end of the 2009/10 season a robust five-year moving average is available to decision makers.

Recommendation 8

That the Department of Fisheries be requested to develop, in consultation with stakeholders over the next two years, the decision rules framework for management of western rock lobster allocations. This framework will need to be operational by 2009/10 - the season in which the IFAAC has recommended allocations become binding.

Note 9:

That the IFAAC endorses as a starting point the Department of Fisheries' proposed approach to managing allocations, using the five-year moving average as a performance indicator.

7.3 Governance and institutional arrangements

In its draft allocation report, the IFAAC recommended (Recommendation 2) that:

> *"the western rock lobster management advisory process be reformed so as to encourage all sectors (commercial, recreational and Indigenous) to discuss inter-sectoral issues ... as well as resolving intra-sectoral management issues."*

The need to have appropriate management structures in place to take advantage of the opportunities that IFM will provide to sectors is generally supported by all major stakeholders.

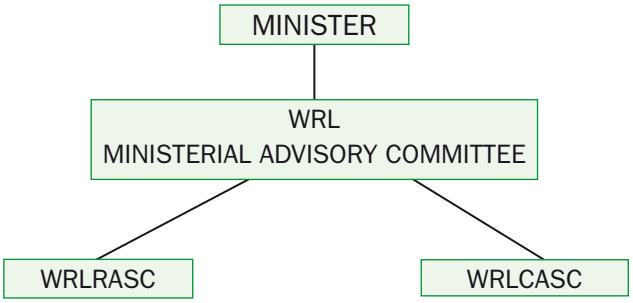
One of the positive outcomes expected to flow from the determination of allocations under the IFM process is that each sector will take a greater responsibility for maximising the benefit from their allocation.

The recreational sector in particular may also be expected to benefit from more direct involvement in the management of its allocation. Appropriate structures also need to be in place in relation to Customary participation.

The existing management structures are not the most appropriate for these purposes and there is a need to change the current institutional arrangements.

The Department of Fisheries has proposed that there is a need for a body to provide advice on a whole-of-fishery basis to the Minister and has proposed a restructure of RLIAC and its membership for this purpose. Sectors are also expected to take more responsibility for providing advice on the management needs of their particular sector.

The IFAAC supports a change to the institutional arrangements and has provided a preliminary view below on the type of structure that could operate under an IFM framework.



The IFAAC proposes the establishment of a 'Western Rock Lobster Management Advisory Committee' (a body proposed to replace RLIAC). This body would be supported by two sector subcommittees - a 'Western Rock Lobster Recreational Advisory Subcommittee' (WRLRASC) and a 'Western Rock Lobster Commercial Advisory Subcommittee' (WRLCASC). The sector advisory subcommittees would be representative-based and include representatives from bodies such as Recfishwest and the Western Rock Lobster Council.

In the event that an issue relates to one sector only, the Minister may choose to seek advice directly from one of the subcommittees. For example, advice could be sought directly from the WRLCASC on cost recovery or marketing.

The IFAAC in section 6.3 has made a recommendation on the management of allocations up to 2009/10, but acknowledges that further policy development is required and that the management of the allocations beyond 2009/10 requires considerable policy development.

The IFAAC recommends that the Department of Fisheries, in consultation with stakeholders, commence developing the necessary institutional and governance arrangements that will deal effectively with these important matters as soon as possible.

Recommendation 9

That the Executive Director of the Department of Fisheries be requested to develop, in consultation with stakeholders, the necessary institutional and governance arrangements to give effect to the Government's IFM policies contained in Guiding Principles vii and x (see section 3.1.3).

7.4 Broader legislative arrangements

The Western Australian Fishing Industry Council (WAFIC), in its earlier submission to the IFAAC, argued 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, the 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 WA Government's 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

That the Department of Fisheries be requested to give consideration to the necessary legislative changes and timelines to give effect to the future management of fisheries under IFM.

8 REFERENCES

Department of Fisheries, 2004, *Assessment of Applications for Authorisations with Regards to Rock Lobster Aquaculture,* Ministerial Policy Guideline No. 20, Perth, Western Australia, p.9.

Department of Fisheries, 2005, *Integrated Fisheries Management Report Western Rock Lobster Resource*, Fisheries Management Paper No. 192, Perth, Western Australia, p.101.

Department of Fisheries, 2006a, *Submission to IFAAC on the Draft Allocation Report for the Western Rock Lobster Resource*, [online], Fisheries Occasional Paper No. 36, Department of Fisheries, http://www.fish.wa.gov.au/docs/op/op036/index.php?0602, [Date accessed 9 June 2006].

Department of Fisheries, 2006b, *A Social Assessment of Coastal Communities Hosting the Western Rock Lobster Fishing Fleet*, Fisheries Management Paper No. 211, Perth, Western Australia, p.73.

Fisheries WA, 1998, *Opportunities for the Holding/Fattening/Processing and Aquaculture of Western Rock Lobster (Panulirus cygnus)*, Fisheries Management Paper No. 122, Perth, Western Australia, p.22.

National Native Title Tribunal, 2005, *National Indigenous Fishing Technical Working Group*, website: www.nntt.gov.au, Accessed June, 2005.

Wright, G, 2005, *An Overview of the Evidence for Indigenous Fisheries on the West and South Coasts of Western Australia*, National Native Title Tribunal, Research Report, p.11.

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 will be 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 fishery[1] and the allocation designated for the 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 predetermined 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

[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.

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 re-allocation 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 re-allocations, 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.

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.

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

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 ALLOCATION PROCESS

INTRODUCTION

Government Policy 2004 on Integrated Fisheries 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 FISHERIES 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; and
- 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 contribute their views to 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, PARAGRAPH 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 re-allocations, 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

STAKEHOLDER SUBMISSIONS IN STEP 1 OF THE IFAAC ALLOCATION PROCESSES

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

www.fish.wa.gov.au/docs/op/op021/fop021.pdf

National Native Title Tribunal

Contact: Guy Wright

Phone: 9268 9700

Recfishwest

www.recfishwest.org.au/SubIFMLobsterFMP192.htm

Recreational Fishing Advisory Committee

Contact: Doug Bathgate

Phone: 9482 7332

WA Fishing Industry Council

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

Western Rock Lobster Council

www.rocklobsterwa.com

APPENDIX D

IFAAC CONSULTATION PROCESS

The consultation process used to disseminate information on allocations for western rock lobster included:

- advertising the availability of the report and meeting dates and venues in the *West Australian* and regional newspapers on two occasions;
- giving presentations at commercial industry meetings in Geraldton, Jurien Bay and Fremantle (average attendance of ~ 100);
- mailing a copy of the report to all commercial fisheries licensees and commercial fishing interests (~ 1,000);
- holding public meetings for recreational fishers at Bunbury, Mandurah, Hillarys and Fremantle (2x) and Jurien Bay (2x) [attendance ranging from 0 to 35];
- sending letters to all western rock lobster recreational licensees in the Hillarys, Fremantle and Jurien Bay areas notifying them of the meetings being held in those locations;
- releasing two media statements;
- including information in Jako's column in the *West Australian*, and departmental magazines such as *Western Fisheries*;
- including information in Integrated Fisheries Management Newsletters circulated to interested persons;
- giving presentations at recreational ministerial committee meetings and to Volunteer Fisheries Liaison Officers;
- holding a media conference with fishing writers;
- including a flyer with the committee's recommendations in all western rock lobster licence renewals sent from mid December onwards [reaching about 10,000 licensees];
- making the report and relevant information available on the Department's website; and
- doing a radio interview on Karl Langdon's fishing show on 6PR and responding to media inquiries.

APPENDIX E

LIST OF NAMES OF ALL SUBMISSIONS RECEIVED FOR THE WESTERN ROCK LOBSTER DRAFT ALLOCATION REPORT

1. Graeme Attey
2. John Baas
3. John Baas
4. Ken Bentley
5. Lisa Bland (Marine Parks and Reserves Authority)
6. John Bresland
7. Peter Buzzacott
8. Jamie Chester
9. Terry Cullen (Jurien Bay Volunteer Sea Search & Rescue)
10. Charles de Beer
11. Department of Fisheries Western Australia
12. Dongara Professional Fisherman's Association Inc.
13. Martin Edwards
14. Steven Gill (Western Rock Lobster Council)
15. Tim Gillingham
16. Mat Guelpa
17. Peter Hammond
18. Richard Hewitt
19. Mick Holt
20. Prof. Gary Jeffrey & Dr Diane Jeffrey
21. Tony Jurinovich (Kajuree Fishing Co.)
22. Shane Lehmann
23. Kevin Maitland
24. Midwest Regional Recreational Fishing Advisory Committee
25. Dean Oxwell
26. Keith Pearce (Zone C Professional Fisherman's Association)
27. John Quigley JP MLA (Member for Mindarie)
28. Robin K Randall
29. Recreational Fishing Advisory Committee (RFAC)
30. Rock Lobster Industry Advisory Committee (RLIAC)
31. RA Rowe
32. Satellite TV WA
33. Phil Somerville
34. *Western Angler* Magazine
35. Brian Stewart
36. Neil Sumner
37. Bob Urquhart
38. James Waite
39. Chris Wieman
40. Andy Woodford
41. Gary Wotherspoon
42. Department of Conservation and Land Management
43. Recfishwest
44. West Australian Fishing Industry Council (WAFIC)
45. Raphael Ellul
46. Peter Cousemacker
47. Ron Ryan

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 G

LETTER FROM THE MINISTER 17 MAY 2005: IFM PROCESS – CONSERVATION SECTOR

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

17 MAY 2005

Ref: 21-296

DEPT OF FISHERIES
FILE
19 MAY 2005
DOCUMENT
ACTION OFFICER

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.

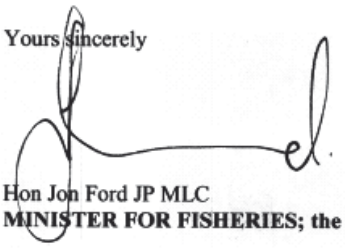
The Department of Fisheries' position is that the creation of no take areas to meet other requirements, such as the preservation of representative habitats, establishment of scientific reference areas and for viewing proposes for which fishing may negatively impact, will be accommodated through the reservation 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



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

APPENDIX H

PRO-FORMA LETTER AND DATA SENT TO STAKEHOLDERS - BEST ESTIMATES OF WESTERN ROCK LOBSTER RECREATIONAL CATCH

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 FOR 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 two) 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 western rock lobster 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 four per cent 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 western rock lobster catch taken by the recreational sector has also increased from about one per cent in the mid 1980s to levels that now exceed three per cent. During the reference period (1997/98 to 2001/02) the recreational take varied between 2.3 to 3.1 per cent of the total lobster catch (Fig. 2).

In Zone A and B, the recreational catch has remained almost constant at about one per cent of the total for these zones, whereas the recreational catch in Zone C displays both annual variations and a longer term increase from two per cent in the mid 1980s to the current levels of five to six per cent (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 to 2004 period.

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

MANAGEMENT IMPLICATIONS

Given the current methods used for monitoring the size of the western rock lobster 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.

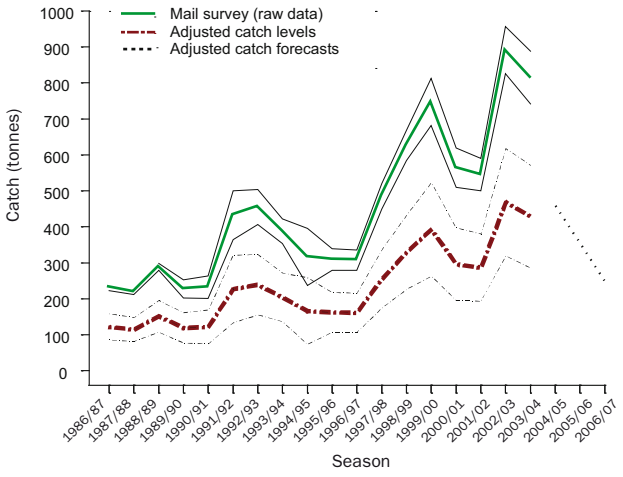


Figure 1 Plots of the recreational catch estimates (thick lines) for western rock lobster based upon both the 'raw estimates' from the mail survey and the adjusted estimates calculated from the 'phone diary based' correction factor. The 95 per cent confidence intervals are also presented (thin lines).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

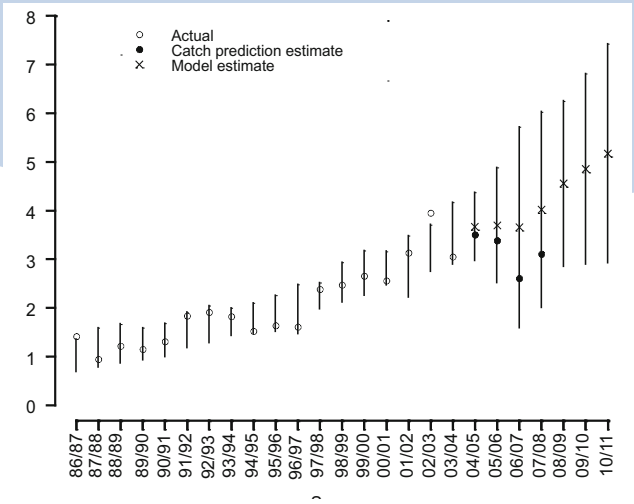


Figure 2 The proportion (%) of the total western rock lobster catch taken by recreational fishers using the adjusted recreational catch estimates. The two vertical dotted lines indicate the reference period 1997 to 2001. The forecast percentages are based on the expected commercial and recreational catches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

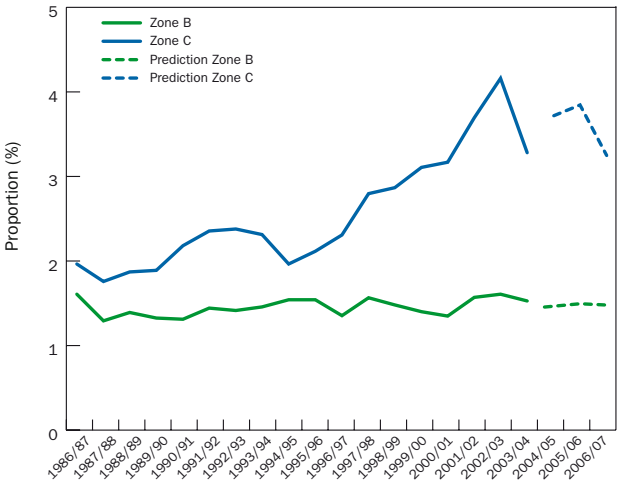


Figure 3 The proportion (%) of the total western rock lobster catch taken by recreational fishers using the adjusted recreational catch estimates in Zones B and Zone C. The forecast percentages are based on the expected commercial and recreational catches for the next three seasons (2004/05 to 2006/07). 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 to 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
2004/05	*474*	*3.5*
2005/06	*368*	*3.3*
2006/07	*263*	*2.6*

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 to 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
2004/05	*421*	*53*	*5.4*	*0.9*
2005/06	*316*	*53*	*5.6*	*1.0*
2006/07	*210*	*53*	*4.7*	*0.9*

APPENDIX I

LONG-TERM GROWTH TRENDS IN RECREATIONAL ROCK LOBSTER CATCH RESEARCH DIVISION, DEPARTMENT OF FISHERIES, 16 JUNE 2005

LIST OF FIGURES

LIST OF TABLES

LONG-TERM GROWTH TREND IN RECREATIONAL ROCK LOBSTER CATCH

ADVICE AT 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.catt) with the annual trend (T) and the puerulus settlement 3 and 4 years (Pt-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 tonnes 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 tonnes) 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).

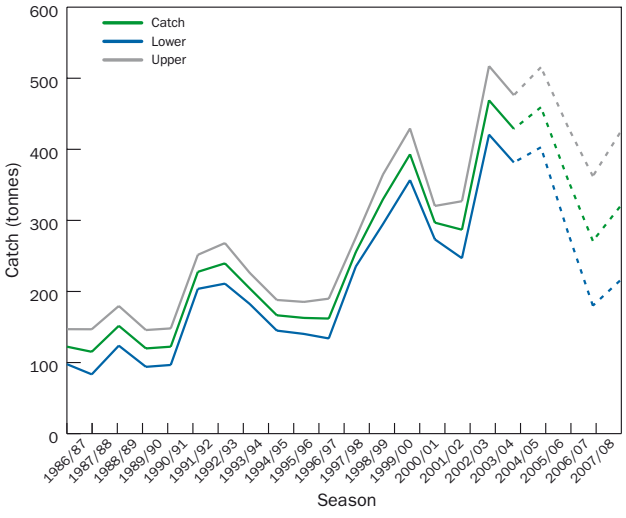


Figure 1 Estimated recreational catch for western rock lobster (solid line). 95 per cent confidence intervals have also been included. Forecasts have been included for seasons 2004/05 to 2007/08 (dashed line).

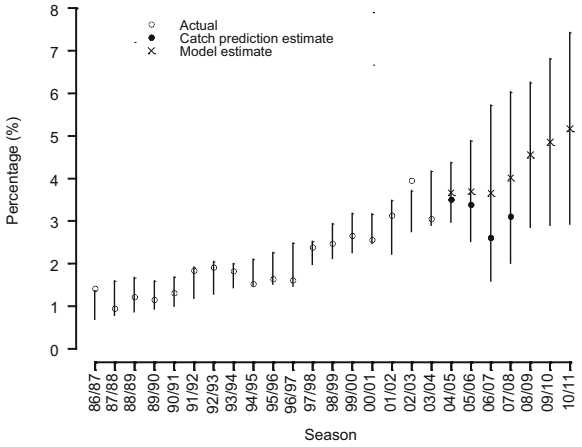


Figure 2 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~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
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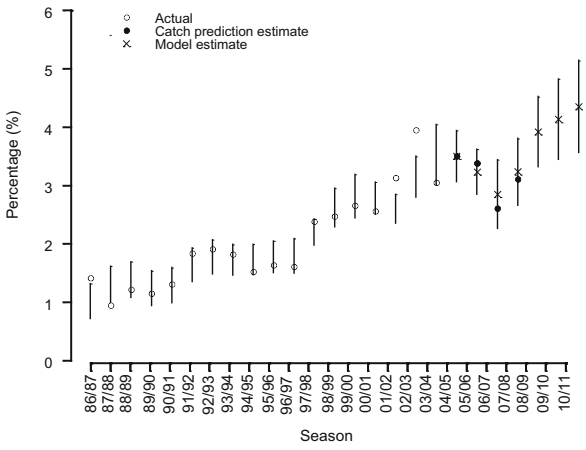

Figure 3 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~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
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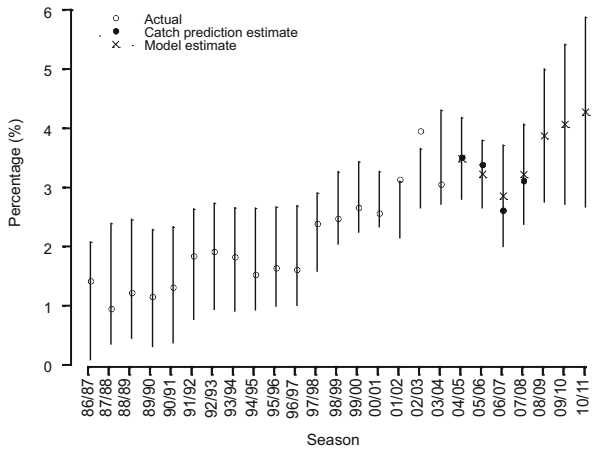

Figure 4 Modelled and actual estimates for the proportion of total catch taken by recreational fishers. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~exp(a+b*t+d*log34Alk)
        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 to 2007/08 are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09 to 2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87 to 2003/04.

Season	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
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

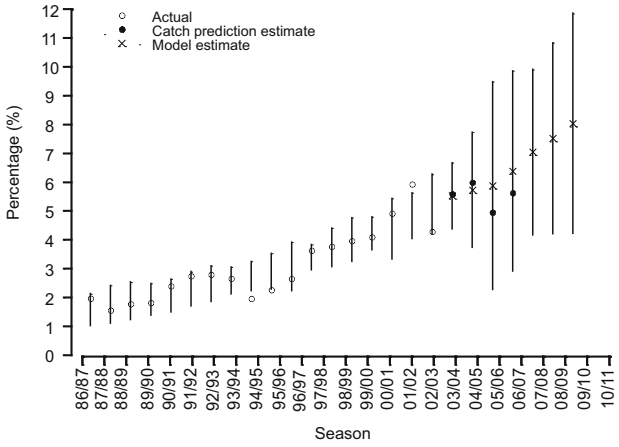

Figure 5 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~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
```

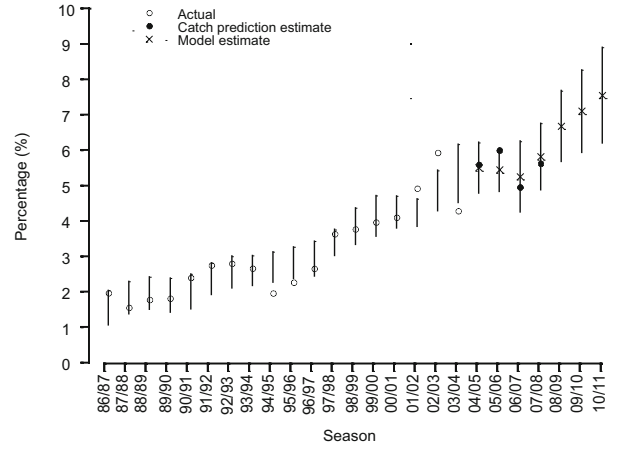

Figure 6 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1986/87 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~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
```

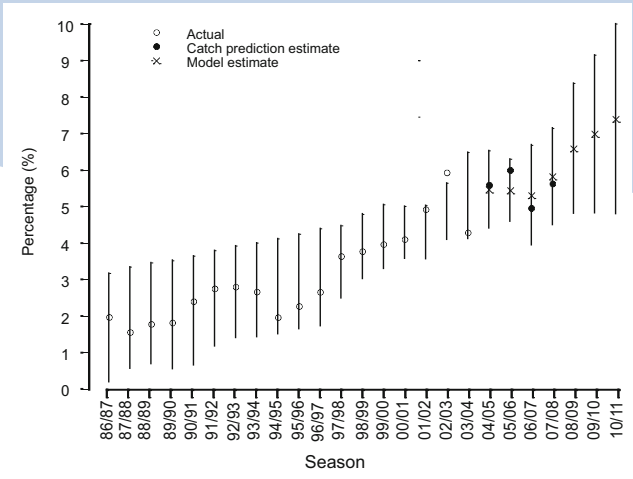

Figure 7 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone C. Seasons 1996/97 to 2007/08 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat~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
```

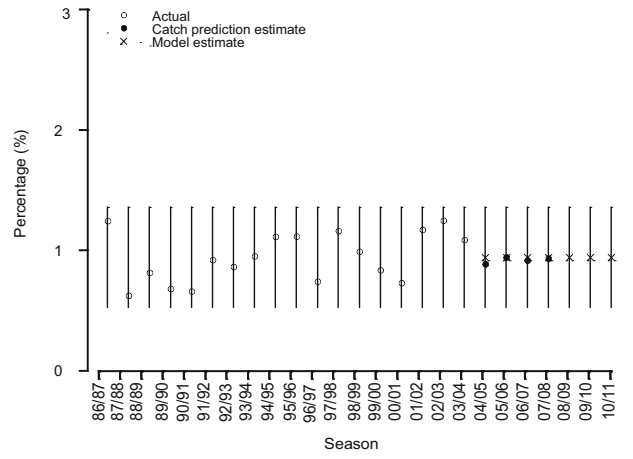

Figure 8 Modelled and actual estimates for the proportion of total catch taken by recreational fishers for zone B. Seasons 1986/87 to 2003/04 have been used to construct the model. Puerulus index $P_{(t-3),(t-4)}$ was used.

```
Formula: p.cat ~ intercept
Coefficients:
            Value  Std.Error  t value r(>|t|)
(Intercept) 0.9415 0.0491     19.1839    0.000
```

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 to 2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09 to 2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87 to 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

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 to 2007/08 (in italics) are projected from forecasted catch of both recreational and commercial fishers. Forecasts for 2008/09 to 2010/11 are made from the model of proportion taken by recreational fishers, based on data from 1986/87 to 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
2004/05	*53*	*0.9*
2005/06	*53*	*1.0*
2006/07	*53*	*0.9*
2007/08	*53*	*0.9*
2008/09	*53*	*0.9*
2009/10	*53*	*0.9*
2010/11	*53*	*0.9*

APPENDIX J

RESULTS OF THE 2004/05 RECREATIONAL SURVEYS

Your ref:

Our ref: RS860/04

Contact: Nick Caputi 9203

Mr Murray Jorgensen OAM, JP

Chair, Integrated Fisheries Allocation Advisory Committee

Department of Fisheries

3rd Floor, 168-170 St Georges Terrace

PERTH WA 6000

Re: Rock lobster 2004/05 recreational catch surveys

Dear Murray,

Thank you for your letter of the 12 September regarding the 2004/05 western rock lobster recreational survey results. In your letter you requested that the Department provide the following information:

1. the catch estimates from the 2004/05 recreational western rock lobster phone/diary survey and mail survey;
2. the relationship of the recreational catch estimates from the surveys to the commercial catch; and
3. an updated assessment of the relationship between the phone/diary survey catch estimates and mail survey catch estimates.

The Research Division advises me that the 2004/05 phone/diary survey was a repeat of the 2000/01 and 2001/02 surveys. The catch estimates from these earlier phone/diary surveys were compared to the long-running mail surveys and an adjustment factor of 1.9 was used to adjust the mail survey catch estimates for recall bias known to occur in recall surveys.

Attachment 1 outlines the results of the 2004/05 surveys and a comparison with the earlier surveys. In summary, the responses to your three questions are as follows:

1. The 2004/05 recreational catch was estimated to be 201 tonne using the results from the phone/diary survey and 721 tonne using the results from the mail survey. The estimate of the recreational catch using the mail survey results and applying the existing adjustment factor of 1.9 was 379 tonne.
2. The 2004/05 mail survey catch estimate retained the close correlation to the commercial catch. The phone/diary survey catch estimate, however, was lower than expected. The main reason for this was that there was a lower than expected participation rate and fewer than expected days fished per year by the participants in the phone/diary survey.
3. Recently, an adjustment factor of 1.9 based on a comparison of the 2000/01 and 2001/02 phone/diary surveys and mail surveys has been used by the Department to estimate the recreational catch. Owing to the lower than expected phone/diary catch estimate, the 2004/05 survey produced a ratio of 3.6 between the two survey methods.

When all three phone/diary surveys are compared, the adjustment factor is 2.3; however, the standard error associated with this estimate is large as it is based on three samples. At least another five years of comparison would be required to obtain a more reliable adjustment factor.

The sample size for the phone diary survey was based on achieving a standard error of the recreational catch for the whole fishery of about 10% and included an assumption about the participation rate. The lower than expected participation rate in 2004/05 has resulted in a smaller sample size of those who fished during the year and hence a larger standard error associated with the catch and fishing effort estimates.

Given the large error associated with the 2004/05 estimate and lower than expected participation rate the Department has formed the view that the 1.9 adjustment factor should continue to be used as an interim arrangement to estimate the recreational catch until more reliable estimates of the recreational catch are available. Noting that the existing correction factor is consistent with the published 'Best Estimates of the Western Rock Lobster Recreational Catch' and what the literature suggests (see part 4 of attachment 1 and attachment 2).

If reliable estimates for the two zones of the fishery are required for future allocation purposes, a stratified sample is required with a higher sample size for each zone over a five-year period.

The Department is investigating introducing in 2006/07 a stratified phone/diary survey, with sample sizes appropriate to achieving a 10% standard error on catch estimates for each of the two zones in order to provide a more reliable estimate of the recreational catch. A key consideration in evaluating the implementation of the survey will be the costs involved, as a more intensive survey is likely to cost considerably more than the existing surveys.

If you require any further technical information, please feel free to contact Dr Nick Caputi on 9203 4165 and/or invite Dr Caputi to attend an IFAAC meeting for further discussion.

Yours sincerely

P P Rogers

EXECUTIVE DIRECTOR

24 January 2006

Attachment 1: 2004/05 rock lobster recreational surveys.

Attachment 2: A survey of the 2000/01 Tasmanian Recreational rock lobster fishery and options for future assessment.

Attachment 1 - 2004/05 rock lobster recreational surveys

1. Differences between the surveys in different seasons

The major difference between the comparison of the diary and mail survey of 2004/05 to those of seasons 2000/01 and 2001/02 is the reduction in participation rate and the number of days fished per year (Table 1).

Table 1 Comparison of different variable estimates using diary and mail survey data for various seasons in which both methods were performed.

Variable	2000/01		2001/02		2004/05	
	Diary	Mail	Diary	Mail	Diary	Mail
Licences	36,933	37,243	36,460	39,623	40,900	45,188
Response rate	83%	51%	78%	51%	82%	43%
Participation rate	0.64 *0.64/0.77 = 0.83*	0.77	0.55 *0.55/0.69 = 0.80*	0.69	0.49 ***0.49/0.70 = 0.70***	0.70
CPUE (lobs/day)	1.81	1.48	1.63	1.51	1.95	1.60
Effort (days/fisher)	15.5 *15.5/26.4 = 0.59*	26.4	14.4 *14.4/26.5 = 0.54*	26.5	10.3 ***10.3/28.6 = 0.36***	28.6
Total recreational catch (t)	332 332/560 = 0.59	560	235 235/545 = 0.43	1.2	201 201/721 = 0.28	721
Total commercial catch (t)	11,273	11,273	8,983	8,983	12,146	12,146

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).

Total		2000/01	2001/02	2004/05
Number of Fishers	*F*	20,700	17,300	16,800
SE(F)	*SE(F)*	900	900	1,000
Effort	*E*	310,000	242,000	163,800
SE(E)	*SE(E)*	35,000	26,000	20,400
Catch (numbers)	*C*	560,000	376,000	329,000
SE(C)	*SE(C)*	73,000	44,000	45,000
C(Tonnes)	*C(Tonnes)*	281	188	165
SE(C) (Tonnes)	*SE(C) (Tonnes)*	36	22	22

2. Differences in the distribution of effort

The level of effort reported by the diary survey in 2004/05 is considerably less than what was reported in previous seasons (Figure 1). The difference in the monthly distribution of fishing effort in 2004 is interesting in that though it started at a level similar to 2001/02, it fell quicker from January onwards, than was recorded in the two earlier season for which there are data. There is no obvious explanation for this and it would explain the substantially reduced catch in 2004/05.

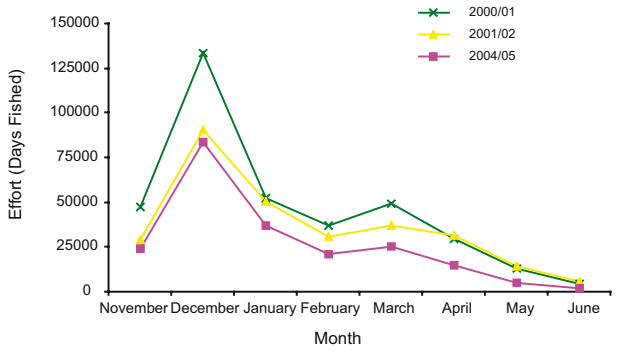

Figure 1 Number of days fished by month from the phone/diary survey for the three seasons surveyed.

3. Reliability of the Zone estimates

The majority of the recreational catch (~80 per cent) is from zone C (Tables 2 and 3). The reliability of the total catch estimate in zone B is questionable, particularly in 2004/05 when there is a standard error of 40 per cent, compared to 21 per cent and 24 per cent for the two other seasons (Table 3).

Around 70 per cent of recreational fishers in Zone B live in Geraldton.

4. Reliability of the mail to phone diary correction factor

The literature suggests that comparisons of mail and diary surveys differ by a factor of two due to recall, prestige and other biases. The application of recall based surveys as an alternative to using the telephone/diary was assessed by Forward and Lyle (2002). In a more recent publication, Lyle and Morton (2004) showed that recall surveys on recreational rock lobster and abalone catches compared to phone diary surveys had differences of 1.27 and 2.24 for rock lobster and abalone catch and 1.4 and 2.2 for rock lobster and abalone effort. Excluding the ratio of the mail to the diary survey estimate for 2004/05, that result is in agreement with ratio estimates of individual seasons and seasons combined (Table 4).

Given the large standard errors around these ratios (see IV and V in Table 4) we support the use of an indicative conversion factor, rather than creating confusion in the community by changing the actual conversion factor each year that we run both surveys. For this purpose, maintaining an indicative conversion of 1.9 would seem to be defendable.

Further mail and phone/diary surveys should be undertaken in the future to improve our understanding of the differences between these two survey methods and the conversion factors for the two methods.

Table 3 Catch and effort for the phone diary survey in Zone B.

Total		2000/01	2001/02	2004/05
Number of Fishers	F	3,900	3,600	3,300
SE(F)	SE(F)	570	550	560
Effort	E	56,000	46,000	42,300
SE(E)	SE(E)	12,000	9,000	17,400
Catch (numbers)	C	102,000	93,000	73,300
SE(C)	SE(C)	23,000	20,000	29,900
C(Tonnes)	C(Tonnes)	51	47	37
SE(C) (Tonnes)	SE(C) (Tonnes)	12	10	15

NB: Zone A (Abrolhos), Zone B (north of 30th), Zone C (south of 30th)

Table 4 Different ratios for converting diary survey estimated total catch to that of the mail survey. Ratios have been determined using a linear model with no intercept using data for different seasons (indicated with a tick).

Model	2000/01	2001/02	2004/05	Ratio (s.e)
I	✓			1.69
II		✓		2.32
III			✓	3.6
IV	✓	✓		1.90 (0.30)
V	✓	✓	✓	2.23 (0.50)

REFERENCES

Forward, J and J.M. Lyle (2002). *A survey of the 2000/01 Tasmanian recreational rock lobster fishery and options for future assessment.* Tasmanian Aquaculture and Fisheries Institute Final report to the Marine Recreational Fishery Council, 36 p.

Lyle, J.M. and Morton, A.J. (2004). *Survey of the 2002/03 Tasmanian recreational rock lobster and abalone fisheries.* Tasmanian Aquaculture and Fisheries Institute, University of Tasmania, Technical Report Series 22: 1-33.

APPENDIX K

PROPOSED CONSULTATIVE COMMITTEE MEMBERSHIP AND TERMS OF REFERENCE

The consultative committee is proposed to discuss and negotiate solutions to intersectoral conflict issues such as spatial and temporal separation. The committee should provide a report to the IFAAC on its recommendations within 12 months of its first meeting.

The IFAAC is satisfied that the case has been made that once sectors are assured of their share of the resource that conflicts such as the 'whites run' can be resolved through negotiation. The consultative committee is tasked with progressing solutions in a timely basis.

The IFAAC after consideration of the Consultative Committee report will make a recommendation to the Minister on how to address this resource access conflict through spatial and temporal separation of the sectors.

The proposed terms of reference and membership are set out below:

PROPOSED TERMS OF REFERENCE

1. Provide advice to IFAAC on strategies to address spatial and temporal competition for western rock lobster near shore, taking into account the government's IFM policy principles and the recommendations approved by the Minister regarding allocations for western rock lobster.
2. Evaluate the option of using the marine park planning process as a means of developing and implementing strategies that address spatial and temporal competition near shore.
3. Identify changes to the Department's compliance, research and management programs required to support the committee's recommendations.
4. Identify the additional cost (if any) to the Department's programs (research, compliance and management) of implementing the committee's recommendations.
5. Identify future data requirements and the cost of data collection to support the implementation of the committee's recommendations.
6. Provide an assessment of the impact implementation of the committee's recommendations will have on the sector's catch shares.
7. Provide a discussion on the basis for claims for compensation on implementation of the committee's recommendations.

MEMBERSHIP

Department of Fisheries (Chair)

Rock Lobster Industry Advisory Committee (RLIAC)

Recreational Fishing Advisory Committee (RFAC)

Western Rock Lobster Council (WRLC)

Recfishwest

Western Australian Fishing Industry Council (WAFIC)

Indigenous

Kevin Donohue: – Integrated Fisheries Allocation Advisory Committee (IFAAC) Representative

Executive Support: Department of Fisheries

APPENDIX L

ABBREVIATIONS

ESD	Ecologically Sustainable Development
FMP 192	Fisheries Management Paper No. 192
FMP 211	Fisheries Management Paper No. 211
FRMA	*Fish Resources Management Act 1994*
IFAAC	Integrated Fisheries Allocation Advisory Committee
IFM	Integrated Fisheries Management
MFL	Managed Fishery Licences
NNTT	National Native Title Tribunal
RFAC	Recreational Fishing Advisory Committee
RLIAC	Rock Lobster Industry Advisory Committee
SHL	Sustainable Harvest Level
VMS	Vessel Monitoring System
WAFIC	Western Australian Fishing Industry Council
WCRLMF	West Coast Rock Lobster Managed Fishery
WRLMASC	Western Rock Lobster Ministerial Advisory Sub-Committee
WRLRASC	Western Rock Lobster Recreational Advisory Sub-Committee