4-2011

Governance of the Western Rock Lobster Fishery and Marine Stewardship Council Principle 3 Effective Management

Department of Fisheries

Fisheries Occasional Publication No. 96, 2011

Governance of the Western Rock Lobster Fishery and Marine Stewardship Council Principle 3 Effective Management

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Citation:
Brown, R. 2011. *Governance of the Western Rock Lobster Fishery and Marine Stewardship Council Principle 3 Effective Management.* Western Australian Department of Fisheries, 3rd Floor The Atrium, 168 St Georges Terrace, Perth Western Australia, 6000.

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Published by Department of Fisheries, Perth, Western Australia.
Fisheries Occasional Publication No. 96, April 2011.
ISSN: 1447 - 2058 ISBN: 978-1-921845-18-5

EXECUTIVE SUMMARY

The purpose of this document is twofold. The first is to provide an overview of the governance system for fisheries in Western Australia in general and a more detailed description of the management system for the western rock lobster fishery (WRLF). The second is to show how the WRLF management system meets the performance indicators and 80-100 scoring guideposts that form the assessment criteria for Marine Stewardship Council certification of the fishery under Principle 3 – Effective Management.

The western rock lobster (*Panulirus cygnus)* is a species of spiny lobster endemic to the west coast of Western Australia. The species exists in great numbers and has become the basis of one of the world's most successful commercial fisheries while also supporting a vibrant recreational fishery.

Responsibility for managing the resource is vested in the West Australian Government in accordance with the objects and provisions of the *Fish Resources Management Act 1994* (FRMA). In particular the Minister for Fisheries is responsible for making executive decisions that determine the strategic and structural manner in which the fishery is managed, while the Chief Executive Officer of the Department of Fisheries (Western Australia) is responsible for the functional management or administration of the fisheries management system.

Establishment, amendment and review of the commercial western rock lobster management system by the Minister for Fisheries occurs on the advice of the Department of Fisheries (DoF) and the Western Australian Fishing Industry Council (WAFIC) in consultation with the Western Rock Lobster Council (WRLC). These organisations and the advisory committees and tasked working groups that can be established under the FRMA by DoF or the Minister to provide advice on specific issues, provide the Minister for Fisheries with advice on all matters relevant to the commercial western rock lobster management system. In order to perform this role effectively it is essential that these organisations be consultative and conduct their business in a manner that is transparent and accountable. In addition, Recfishwest provides advice on the management of the recreational fishery.

The close partnership between DoF, WAFIC and the WRLC enables them to perform this role with the aid of a number of established and well-recognised processes designed to constantly scan the environment (in its broad sense) for issues that can and do affect the management system. In particular the National Ecologically Sustainable Development (ESD) Reporting framework, ecological risk assessments (ERA), expert-based groups such as the Sea Lion Scientific Reference Group (SLSRG), the Effects of Fishing Advisory Group (EFAG) and stock assessment and modelling workshops and reviews are used to provide advice to Government, DoF and stakeholders on the risks posed by fishing the stock and more broadly the ecosystem and to recommend strategies to mitigate those risks or research to investigate them.

In the western rock lobster management system environmental scanning to identify and manage risk occurs on three levels: strategic – every five years – e.g. ESD reporting and a formal ERA for the fishery, annually through groups such as EFAG and as important issues arise and expert based workshops and reviews. The three levels of assessment (five yearly, annually and as issues arise) ensure that there is a system to identify risks and rate them

appropriately so that management measures can be adopted early to mitigate them or research projects can be developed to investigate them.

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PART 1 GOVERNANCE

1.0 DESCRIPTION OF THE WESTERN ROCK LOBSTER FISHERY

The commercial fishery for western rock lobster is the most valuable single species wild capture fishery in Australia, worth between $A200 and $A400 million annually and usually representing about 20 percent of the total value of Australia's fisheries.

The fishery also supports a significant recreational fishery. About 25,000 rock lobster licenses were used to catch 225 tonnes in 2008/09. The recreational catch is normally between 200 and 400 tonnes, which is approximately two to four percent of the total catch (commercial plus recreational). The license entitles recreational fishers to use two traps / pots and/or dive for rock lobster and keep up to six lobsters per day. For further details see the *State of the Fisheries 2009-10*.[1]

As one of the first managed fisheries in Western Australia, data have been kept on the Western Australia rock lobster fishery since the early 1900s. The rock lobster fishery was declared limited entry in March 1963 when license and pot numbers were frozen. Since 1963, boat numbers have declined from 836 to 293 (as of January 2010). The commercial catch has varied between 5,500 (a TACC) and 14 500 t over the last 30 years, mostly due to natural fluctuations in annual recruitment. The settlement of puerulus (one year old lobsters) is used to predict recruitment levels, and hence catches three to four years ahead.

Management arrangements have included a number of measures to pursue the legislative objectives of resource conservation and sustainability and they are widely recognized as being successful. However, fisheries management objectives dealing with the ecological impacts of fishing are still at the research assessment stage (see *"Western Rock Lobster Ecology –The State of Knowledge"*[2] for further details). Up until the 2008/09 season the main catch control mechanism used was an overall cap on fishing effort, i.e. a total allowable effort (TAE) was imposed by limiting the total number of commercial pots that could be used in the fishery.[3] Relatively liberal transferability provisions allowed market forces to determine the most efficient use of licenses and available traps. This system of management was known as an Individually Transferable Effort (ITE) system.

From 2008/09 and onward management measures were introduced to limit the commercial catch to less than 7,800 tonnes. In 2009/10 a competitive TACC of 5,500 tonnes was introduced. This was followed by the implementation of individual catch limits as a transition to a full Individual Transferable Quota system in 2010/11. The 5,500 tonne TACC has been retained for 2010/11 and is expected to apply for the 2011/12 seasons (unless research shows it needs to be reduced). Initially most effort controls (including reduced pot usage) will remain in force.[4]

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[1] State of the Fisheries 2009-2010 pgs 28 to 31 at: Hhttp://www.fish.wa.gov.au/docs/sof/2009/index.php?0706H

[2] *"Western Rock Lobster Ecology – State of Knowledge" at:*
*H*http://www.fish.wa.gov.au/docs/op/op089/index.php?0706H

[3] For further details see *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at:
Hhttp://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401H

[4] See management arrangements for 2009/10 at
Hhttp://www.fish.wa.gov.au/sec/com/fisheries/WCRockLobster.php?0206H and
Hhttp://www.fish.wa.gov.au/sec/com/fisheries/WCRockLobster0910Consultation.php?0206H

Western rock lobsters are distributed from Augusta on the South coast of Western Australia up to Exmouth, north of Shark Bay (Figure 1). The fishery is divided into three access zones, that distributes fishing effort across the fishery, rather than permitting the fleet to concentrate effort on areas of seasonally high productivity, thereby avoiding higher than acceptable exploitation rates. Zone management also enables management controls aimed at addressing zone specific issues, for example, there are currently different maximum size restrictions in the northern and southern regions of the fishery. A number of small areas have been closed to commercial fishing, e.g. at Rottnest and Quobba Point and the Fish Habitat Fish Protection Areas at Cottesloe, Yallingup and Lancelin Island. Other closed areas exist under the Marine Park management system administered by the Department of Environment and Conservation (DEC). More recently a large area north of the Abrolhos Is, know as Big Bank has been close to protect the breeding stock in that area.

Other management tools of note are those of a biological nature, specifically: protection of females in breeding condition, minimum carapace length and maximum carapace length. Gear restrictions, such as the need for escape gaps, also play a significant role in controlling exploitation rates.

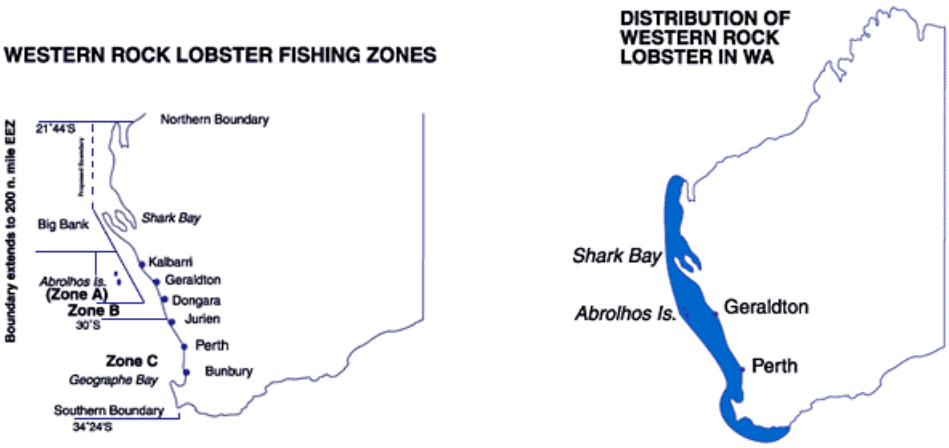

Figure 1: Western rock lobster fishing zones and distribution of western rock lobster.

2.0 SYSTEM OF GOVERNMENT IN WESTERN AUSTRALIA AND RELEVANT FISHERIES LEGISLATION

The Government of Western Australia operates under the Westminster system, and an important tenant of this system is that the responsible Minister makes executive decisions. Insofar as the administration of fisheries in Western Australia is concerned the relevant executive decision maker is the Minister for Fisheries.

The Department of Fisheries is established under the *Public Sector Management Act 1994* and is the department principally responsible for assisting the Minister for Fisheries in administering the following acts and regulations:

- *Fish Resources Management Act 1994 (FRMA);*
- *Fish Resources Management Regulations 1995 (FRMR);*
- *Pearling Act 1990;*

- *Fisheries Adjustment Schemes Act 1987;*
- *Fishing and Related Industries Compensation (Marine Reserves) Act 1997; and*
- *Fishing Industry Promotion Training and Management Levy Act 1994.*

Up to date versions of the legislation governing the Department of Fisheries and the Fisheries acts and regulations can be accessed via links at:
http://www.fish.wa.gov.au/docs/pub/LegislationHow/gateway.php?0006

An overview of the new FRMA and the objectives of sustainable fisheries and aquatic management policy and how they relate to national and international fisheries law and policy are published in *A Sea Change for Aquatic Sustainability – Meeting the Challenge of Fish Resource and Aquatic Sustainability in the 21st Century*.
http://www.fish.wa.gov.au/docs/op/op079/index.php?0706

Of particular relevance to the management of fish resources is the *Fish Resources Management Act 1994* (FRMA). Section 3 of the FRMA establishes that:

> *"The objects of the Act are to conserve, develop and share the fish resources of the State for the benefit of present and future generations."*

The fish resources that fall under the jurisdiction of the FRMA are described in a formal agreement between the Commonwealth and State Government's – the Offshore Constitutional Settlement. This agreement and explanation of it is contained within *Fisheries Management Paper No.77 – Offshore Constitutional Settlement 1995*.[5]

Under the FRMA, there is a division of power between the Minister for Fisheries and the statutory office of the Department of Fisheries Chief Executive Officer. In broad terms, it is the Minister for Fisheries who establishes the legal and policy framework for fisheries management, while the Chief Executive Officer (and staff) carries out the day-to-day administration of these frameworks.

3.0 SOURCE OF MINISTERIAL ADVICE AND CONSULTATION PROCESSES

To assist the Minister for Fisheries in managing the State's fish resources, the FRMA makes provision, under Part 4, for the establishment of advisory committees. Up until July 2010 the Rock Lobster Industry Advisory Committee (RLIAC)[6] was the relevant advisory committee for the Western Australia rock lobster fishery resource, however, it (and its subcommittees) has since been wound up. Peak Bodies, advisory committees and tasked working groups now perform RLIAC's functions.[7] The Minister is not limited to seeking advice from formal advisory groups, committees, etc and can, for example, seek advice directly from stakeholders, the Department of Fisheries or Parliamentary colleagues.

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[5] *Fisheries Management Paper No.77 – Offshore Constitutional Settlement 1995* at Hhttp://www.fish.wa.gov.au/docs/mp/mp077/index.php?0706H

[6] For details on the history of RLIAC, its subcommittees and working groups see the Western Rock Lobster Environmental Management Strategy June 2002 - July 2006 at: Hhttp://www.fish.wa.gov.au/docs/op/op017/index.phpH .

[7] The Department has developed a flexible consultative process that focuses on peak body representation, such as the Western Australian Fishing Industry Council, Recfishwest, Western Rock Lobster Council, Conservation Council of WA, World Wildlife Fund, etc. For further details see Hhttp://www.fish.wa.gov.au/sys/search/search-results.php?cx=013835017986948451027%3A37smukpakns&cof=FORID%3A11%3BNB%3A1&q=Consultation&sa.x=37&sa.y=4#885H

Discussion with WRLF stakeholders occurs through a variety of forums, but regular and well-known features include stakeholder meetings held annually. In the past these meetings were known as the annual coastal tour, which was organised by RLIAC for around October each year. The coastal tour has recently been replaced by meetings coordinated by the Western Rock Lobster Council (WRLC) and DoF that can occur at any time during the year. The meetings are open to the public and usually take place at two or three major rock lobster ports between Fremantle and Geraldton. These meetings are widely recognized by rock lobster stakeholders as a mechanism for receiving the most up-to-date scientific advice on the status of the fishery and for discussing new and ongoing management issues.

Communication and engagement with stakeholders on such things as the annual stock assessment and management arrangements is through a variety of media:

- The rock lobster news letter, which is published approximately quarterly;
- DoF publications (e.g. research and management) and discussion papers (published to obtain public comment) on the DoF website (http://www.fish.wa.gov.au/sec/about/pubs/index.php?0706);
- Expert reference groups and scientific reviews / workshops, risk assessments and reviews, which are open to stakeholders. For example the Sea Lion Scientific Reference Group, the Effects of Fishing Advisory Group and specific expert workshops on stock assessment and modelling and the risk assessment of the causes of the low puerulus settlement. Independent expert based Ecological Risk Assessments are also undertaken at regular intervals or as new issues arise. The reports of the expert groups, workshops, risk assessments, and reviews are published on the Department of Fisheries of Fisheries WA website.
- Stakeholder meetings and accompanying background documentation and reports;
- WRLC website (http://www.rocklobsterwa.com/) and Executive Officer;
- WAFIC website (http://www.wafic.com.au/).
- WAMSI website for ecological research (http://www.wamsi.org.au)

One of the purposes of these communication and consultation processes is to ensure stakeholders and the community more generally, have access to relevant information that shapes the advice that is provided to the Minister. Making information available and providing for a discussion and exchange of ideas encourages input from stakeholders and the community into the management process.

Figure 2 below illustrates the separation of executive and administrative powers and responsibilities under the *Fish Resources Management Act 1994*. It also shows the over arching consultation system that applies to the management of Fisheries in Western Australia, which informs the Minister's decisions. Table 1 below sets out the operating principles that have been agreed between the peak commercial fishing industry body, WAFIC, the Minister for Fisheries and the Department of Fisheries regarding the consultation process. DoF and WAFIC are currently negotiating a service level agreement that will set out in detail the consultation and decision making process that WAFIC will be expected to implement.

FIGURE 2 Overarching Consultation and Management Framework for Fisheries.

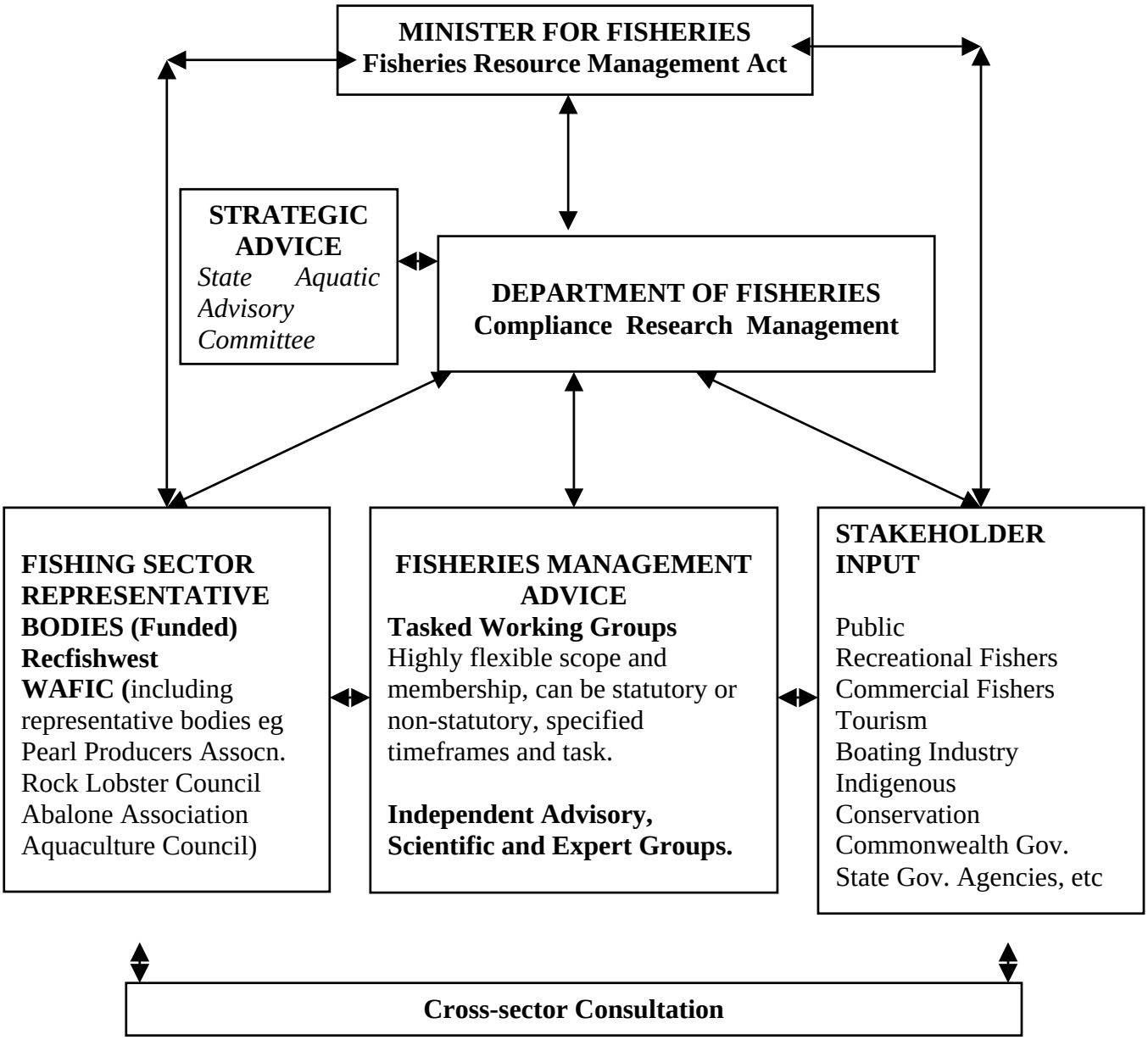

Table 1 Commercial Fisheries Consultation Operating Principles agreed by WAFIC and DoF

Principle	Responsible Association	Example
On generic policy issues which could affect, as a whole, the fishing, aquaculture, and pearling industries	WAFIC	Bioregional marine planning; safety, education and training; research and development policy and biosecurity
On policy issues which currently primarily affect one sector but which could have implications	WAFIC will nominate the relevant sector body and WAFIC and that body will jointly represent industry.	The Western Rock Lobster Council and WAFIC would represent industry on marina and port access issues which may primarily initially

for the broader industry		impact on the rock lobster industry in regard to certain locations but have precedents for the rest of the industry for other locations; the Pearl Producers' Association and WAFIC on animal welfare
On issues which affect only one specific sector	The relevant sector body would represent itself but WAFIC would be kept informed and may have a statutory consultation role. If no relevant sector body, WAFIC will assist in setting up appropriate consultative mechanisms.	Regulation of lobster pot design (Western Rock Lobster Council); pearl promotion, (Pearl Producers' Association) e.g. Assisting the shark industry to establish the WA Demersal Gillnet & Longline Association and acting as Secretariat for interim period.

To provide additional non-legislative guidance for the operation of advisory groups and tasked working groups, and scientific advisory committees, etc the Minister for Fisheries issued *Fisheries Management Guide No.3 – A guide for Management and Ministerial Advisory Committee (MACs) and the conduct of meetings issued by the Minister for Fisheries* as published in January 2003 by the Department of Fisheries[8]. This Guide covers all critical operational aspects for advisory committees. For example, the guide covers the role of members and observers, procedural matters, disclosure of interests and executive support for advisory committees.

4.0 POWER TO MANAGE THE WESTERN ROCK LOBSTER FISHERY

The Minister has legislative power to turn knowledge and advice he is provided with into action. Parts 5 and 6 of the FRMA deal with the general regulation of fisheries through the use of orders and regulations and the specific management of fisheries via the declaration or creation / amendment of fisheries management plans. Principally, the Minister for Fisheries manages the western rock lobster resource by exercising powers provided under Parts 5 and 6 of the FRMA after taking advice from stakeholders, advisory and scientific committees, tasked working groups and DoF. The administration of these arrangements then becomes the responsibility of the Chief Executive Officer and the Department of Fisheries more generally.

For the western rock lobster resource there is a fisheries management plan determined by the Minister for Fisheries that limits the right to fish commercially for western rock lobster to those who hold an appropriate licence issued only by the Chief Executive Officer. The management plan establishes the area and sub areas (zones) of the fishery, the capacity, permissible gear type, open and closed seasons and rules for transferring licences or parts of licences. The management plan can be viewed by following the links from: http://www.fish.wa.gov.au/docs/pub/LegislationHow/gateway.php?0006 and amendments made to it in March 2011 are available at: http://www.slp.wa.gov.au/gazette/GAZETTE.NSF/gazlist/C988A0D2E3504A7E4825784F000E404E/$file/gg035.pdf .

[8]The guidelines can be viewed at Hhttp://www.fish.wa.gov.au/docs/mp/mg003/index.php?0706H .

In addition to the management plan there are orders determined by the Minister that (amongst other things) manage access to special areas within the overall boundaries of the fishery. For example there is an order that generally prohibits commercial fishing in waters immediately surrounding Rottnest Island off the Perth metropolitan coast.

To complement the management plan and various orders there is a body of regulations approved by the Minister and determined by the Governor of WA that apply specifically to western rock lobsters. In particular these regulations deal with the specifics of the sizes of lobsters that cannot be taken, the protection of lobsters in breeding condition, the dimensions of approved rock lobster fishing gear, bait types that cannot be used, and the requirement to hold a recreational fishing license to fish recreationally.

The collection of orders and regulations are available online at http://www.fish.wa.gov.au/sec/about/legislation/index.php?0006.

To assist Stakeholder (e.g. peak bodies), advisory committees, tasked working groups, etc in developing management advice for the Minister, a fisheries management harvest strategy and decision rules framework for the western rock lobster fishery was developed when the fishery was managed under input controls (see http://www.fish.wa.gov.au/docs/mp/mp239/index.php?0706). The fishery has recently moved to an input ('quota') management system and therefore a new harvest strategy / decision rules is currently being developed to align it with these management changes.

Other resources for information regarding the management for the Western rock lobster fishery may be found at:

Western Australian Department of Fisheries	http://www.fish.wa.gov.au/sec/com/fisheries/WCRockLobster.php?0206, accessed 11 November 2010
Western Australian Fishing Industry Council Inc.	http://www.wafic.com.au/index.php/about-wafic/what-we-are accessed 11 November 2010
Western Rock Lobster Council	http://www.rocklobsterwa.com/, accessed 11 November 2010.
Recfishwest	http://www.recfishwest.org.au/policies/recreational-rock-lobster-fishing.pdf accessed 11 November 2010

5.0 SOURCE OF FUNDS TO RESOURCE THE MANAGEMENT PROCESS

The costs of managing the Western Australia Rock Lobster Fishery, including conducting research, are met from a variety of sources. In particular significant contributions come each financial year from the:

- West Coast Rock Lobster industry,
- State Government Consolidated Revenue,
- Fisheries Research and Development Corporation,
- Industry Development Unit,
- Australian Seafood Cooperative Research Centre,
- National Heritage Trust,
- Western Australian Marine Science Institution, and
- Australian Research Council linkage grants.

6.0 KEY PERSONNEL AND FUNDING ARRANGEMENTS

There is a commitment from the Department of Fisheries and the Western Rock Lobster Industry to meet the cost of:

- actions against each of the operational objectives as described in the Environmental Management Strategy,
- actions required to meet the conditions of Marine Stewardship Council (MSC) certification as described in the annual surveillance audits and re-certification reports (for details follow the links at: http://www.msc.org/track-a-fishery/certified/south-atlantic-indian-ocean/western-australia-rock-lobster),
- communication, consultation and implementation of management outcomes, and
- adequate compliance with new and existing management initiatives.

From 1 July 2010, all fisheries' licence fees were subject to a new funding model aimed at addressing some of the inequity in the previous cost recovery model.[9] For all commercial fisheries in Western Australia (including the WRLF), an access fee of 5% of gross value of production (GVP) is payable along with 0.75% of GVP to fund industry bodies such as Western Australian Fishing Industry Council (WAFIC) and the Western Rock Lobster Council (WRLC) and contributions to the Fisheries Research and Development Corporation (FRDC).[10] Recreational licence fees are used to support the peak body Recfishwest and research, management, compliance, education etc for the recreational fishing sector.[11] Government consolidated revenue provided 52% of the Department's expenditure in 2009/10 (see Annual Report pgs 6 and 7 at: http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706).

The Department also receives revenue from sources other than access fees that can be used to meet the cost of the western rock lobster fisheries research. In particular the Fisheries Research and Development Corporation (FRDC) is a significant source of funds for rock lobster research projects in Western Australia. Other sources of funding are the Western Australian Marine Science Institution (WAMSI), Australian Research Council linkage grants with a university partner (University of Western Australia, Murdoch University, Edith Cowan University or Curtin University) and the Australian Seafood Cooperative Research Centre.

Key personnel to whom the responsibility of ensuring adequate funding for management, research and compliance is provided from financial year to year include:

- The Rock Lobster Program Manager (management)
- The Supervising Scientist – Invertebrates (research)
- Senior Scientist – Rock Lobster Research (research)
- The Rock Lobster Compliance sub-program Manager (compliance)
- The Executive Officer of the Western Rock Lobster Council

[9] For further information on the new access fees see Hhttp://www.fish.wa.gov.au/sec/com/lic/index.php?0205H
[10] See Hhttp://www.fish.wa.gov.au/sec/com/lic/index.php?0205H for details of commercial fisheries fees that are used to fund research, management, compliance, community education etc.
[11] See Hhttp://www.fish.wa.gov.au/docs/media/index.php?0000&mr=793H for media update and Hhttp://www.fish.wa.gov.au/docs/pub/rfl/index.php?00H for details of licensing arrangements)

- The Chief Executive Officer of the WA Fishing Industry Council.
- The Chief Executive Officer of Recfishwest.

Funding for actions in the EMS and MSC conditions

Actions to be undertaken in the EMS or in response to conditions set by the MSC, are fully funded through the 5% GVP access fee (e.g. stock assessment and modelling, SLEDs compliance) and by accessing funds from FRDC (e.g. the effects of lobster fishing on the deep-water ecosystem) and other outside funding sources (e.g. WAMSI – shallow water ecology, climate change, ecologically based fisheries management). If funding is not available from these sources it will be raised (after consultation and agreement) from an additional fee on the rock lobster industry.

7.0 ECOLOGICALLY SUSTAINABLE DEVELOPMENT REPORTING

In Australia there exists an Ecologically Sustainable Development (ESD) reporting framework for fisheries as developed by the *Fisheries Research and Development Corporation ESD Subprogram*, which is an important part of the stock sustainability assessment process for fisheries in WA. This framework is outlined within a series of reports (see http://www.fish.wa.gov.au/docs/mp/mp157/index.php?0706), which makes the completion of ESD reports as efficient and effective as possible. The reports are available from the ESD subprogram website http://www.fish.wa.gov.au/docs/esd/esd004/index.php?0706 .

There are four main processes needed to complete an ESD report (see Figure 3 for summary)[12]. These include: identifying issues; determining the importance of each of these issues using risk assessment; completing suitably detailed reports; and compiling sufficient background material to put these reports into context. Sections of the *Guide* outline in detail how to complete each of these major elements by providing detailed descriptions of the methodology, examples of outputs from case studies and, where necessary, the theoretical foundations to the methods used.

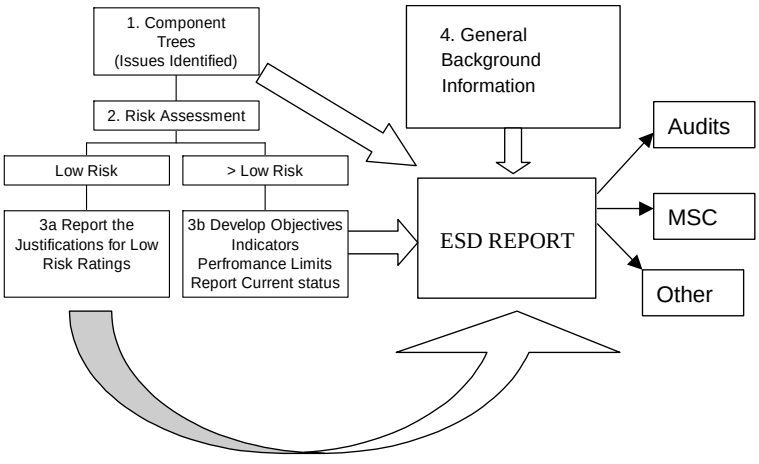

Figure 3 Summary of ESD framework processes

Details of the ESD process are provided in Appendix 1.

[12] These elements are equivalent to completing a standard risk analysis process.

8.0 INDEPENDENT ECOLOGICAL RISK ASSESSMENTS

In addition to the ERAs associated with the ESD reporting process, three independent expert based ERAs have also been undertaken for the WRLF as part of the Marine Stewardship Council certification process.

- 2001 (http://www.fish.wa.gov.au/docs/op/op063/index.php?0706),
- 2005 (http://www.fish.wa.gov.au/docs/op/op025/index.php?0706) and
- 2007 (http://www.fish.wa.gov.au/docs/op/op056/index.php?0706).

These independent ERAs are undertaken approximately every five years, with the next one due in mid 2012. ERAs are also undertaken when specific issues that warrant them arise, for example the Low Puerulus Risk Assessment Workshop (see the report f the workshop at http://www.fish.wa.gov.au/docs/op/op071/index.php?0706)

9.0 ECOSYSTEM BASED FISHERIES MANAGEMENT POLICY

The Department of Fisheries has implemented Ecosystem Based Fisheries Management (EBFM) to ensure sustainable fish stocks and ecosystems. This policy is set out in the *State of the Fisheries and Aquatic Resources Report 2009-10* pages 21 to 27 (available at http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706) and in greater detail in Fletcher et al (2010). *An Ecosystem Based Fisheries Management framework: the efficient, regional-level planning tool for management agencies*. Marine Policy 34 (2010) 1226-1238; *Development of an ecosystem approach to the monitoring and management of Western Australian fisheries* at http://www.fish.wa.gov.au/docs/frr/frr215/index.php?0401 and *Conceptual models for Ecosystem Based Fisheries Management (EBFM) in Western Australia* at http://www.fish.wa.gov.au/docs/frr/frr194/index.php?0401

In summary the EBFM process provides the operating policy / basis for implementing sustainable fisheries and ecosystem management. It identifies ecological assets in a hierarchical manner and identifies the risks associated with them. The levels of risk are then used as a key input to the Department's Risk Register which, combined with the and assessment of the economic and social values and risks associated with these assets, is an integral component of the annual planning cycle for assigning activity priorities (e.g. management, research, compliance, education, etc) across each Bioregion (e.g. the West Coast Bioregion that incorporates the WRLF).

10.0 PROCESS FOR ALLOCATION AND REALLOCATION OF CATCH SHARES

Since 2002 the Department of Fisheries has been implementing a process of catch sharing between commercial, recreational and customary users (e.g. WRL and Roe's Abalone) through its Integrated Fisheries Management process (see overview at: http://www.fish.wa.gov.au/docs/pub/IFMGuide/IFMGuidePage02.php?0601. Details of the allocation and reallocation policy can be found in *Processes for the Allocation, Reallocation and Governance of Resource Access in connection with a Framework for the Future Management of Fisheries in Western Australia* at http://www.fish.wa.gov.au/docs/mp/mr007/index.php?0706 . For the reports on the process used for the WRL see the Integrated Fisheries Management – Resource Sharing section under MSC Performance Indicator 3.2.5 below.

11.0 SUMMARY

The established management system for fisheries in WA and for the WRLF in particular, is based on the principles of good government and the premise that responsibility for managing

access to the common property resource is vested in the Government and its agencies. To ensure that executive decisions are made in good faith and on the best available information formal consultation, communication and expertise based assessment processes exist.

PART 2 MARINE STEWARDSHIP COUNCIL PRINCIPLE 3 – EFFECTIVE MANAGEMENT

Background

Two decades of international concern over the state of the world's wild capture fisheries have seen a number of independent international organisations established to certify and promote ecologically responsible and sustainable fisheries. By far the largest of these is the Marine Stewardship Council (MSC)[13], which was set up by the World Wildlife Fund and Unilever in 1997 to promote solutions to the problem of over fishing by using consumer pressure. The MSC uses independent certification companies, such as Moody Marine and Scientific Certification Systems, to certify and audit fisheries that want to enter the scheme. There were 187 fisheries around the world that were either certified or under assessment at the end of the 2009/10 financial year and they landed over 7 million tonnes of seafood – 12 per cent of the annual global wild harvest for human consumption. There are now some 5,000 MSC labelled products in the market place, worth over US $2 billion annually. Increasing numbers of large seafood wholesalers and retailers have pledged to sell only seafood sourced from MSC certified fisheries e.g. Wal-Mart (the world's largest retail supermarket chain), Marks and Spencers, Sainsbury's, ASDA, Deutsche See and Whole Foods Market. In Australia the Coles and Woolworths supermarket chains are also developing policies for sustainable fish product procurement.

In March 2000 an industry lead initiative resulted in the Western Australia Rock Lobster Fishery (WRLF) becoming the first fishery in the world to be certified by the Marine Stewardship Council as a sustainable and well managed fishery. The MSC certification process is considered to be the most rigorous and comprehensive independent fisheries assessment and the WRLF has demonstrated strong leadership in its willingness to embrace this rigorous and transparent process. Certification covers three areas: Principle 1 – Stock Status (all aspects of stock assessment), Principle 2 – Minimizing Environmental Impact of Fishing and Principle 3 – Effective Management. Each Principle is further broken down into detailed performance indicators against which a fishery is scored.[14]

The Western Rock Lobster Council (WRLC) is the client for MSC certification and the Western Australian Fishing Industry Council (WAFIC), Department of Fisheries (DoF) and the Government of Western Australia fully support the process.

In December 2006 the WRLF was successfully re-certified by Scientific Certification Systems, on behalf of the MSC, for a further five years, provided it passed its annual audits. The 2007, 2008, 2009 and 2010 annual audits have been successfully completed[15] and the fishery has now entered the next five re-certification process, which, if successful, would take its certification through to December 2016. The process is due to be completed by November 2011.

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[13] MSC is a charity that certifies wild capture fisheries See: Hhttp://www.msc.org/H for details
Other eco-labelling organisations include Dolphin Friendly and Friend of the Sea.

[14] Details of the MSC's Principles and Performance Indicators can be found in their *Fisheries Assessment Methodology* document at: Hhttp://www.msc.org/documents/scheme-documents/methodologies/Fisheries_Assessment_Methodology.pdf/viewH
For other certification scheme documents see Hhttp://www.msc.org/documents/scheme-documentsH

[15] See MSC annual audit and recertification reports for the WRLF at Hhttp://www.msc.org/track-a-fishery/certified/south-atlantic-indian-ocean/western-australia-rock-lobsterH

Information to score the WRLF against MSC Principle 3 – Effective Management

This section of the document provides the information on the WRLF's management system needed to score the fishery against the MSC's performance indicators (PI) under Principle 3 – Effective Management. Each PI has been copied from the *Marine Stewardship Council Fisheries Assessment Methodology v2.1* document onto a separate page and the management system information against which it can be assessed is provided below it. In each case it endeavours to show that the fishery meets the 80 or greater scoring guide posts.
Where appropriate web links to supporting documents are provided.

MSC PRINCIPLE 3 PERFORMANCE INDICATORS AND SCORING GUIDEPOSTS

3.1 Governance and Policy Performance Indicators

3.1.1 Legal and / or customary framework

Component	PI Category	PI	SG60	SG80	SG100
Governance and policy	**Legal and/or customary framework 3.1.1**	The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: - Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework.	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system. Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery. The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery. The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges. The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective. The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges. The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

WRLF Management Information – 3.1.1 Legal and/or customary framework.

Legal and Policy Framework that Delivers Sustainable Fisheries in Accordance with MSC Principle 1 and 2.

As outlined above in the *Governance* section of this document the WRLF management system comes under overarching fisheries law and rock lobster fishery specific law as set out in the:

- *Fish Resources Management Act 1994 (FRMA);*

- *Fish Resources Management Regulations 1995 (FRMR)* includes penalties*;*
- Consolidated Management Plans
- Consolidated Notices and Orders
- Chief Executive Officer's Notices and Determinations

Up to date versions of the Fisheries Act and Regulations, Consolidated Management Plans and Orders and the Chief Executive Officer's Notices and Determinations can be accessed via links at: http://www.slp.wa.gov.au/statutes/subsiduary.nsf/Fisheries?OpenPage
An overview of the new Act, the objectives of sustainable fisheries and aquatic management policy, its interface with national and international fisheries law and how the system works is available in *A Sea Change for Aquatic Sustainability – Meeting the Challenge of Fish Resource and Aquatic Sustainability in the 21st Century* at
http://www.fish.wa.gov.au/docs/op/op079/index.php?0706

The Department of Fisheries is governed by the *Public Sector Management Act 1994*[16] and its Annual Report, which is presented to Parliament, provides an:

- overview and profile of the Agency;
- descriptions of its:
    - operating environment and significant issues that impact on it;
    - its operating structure;
    - corporate executive;
    - performance management framework for management, research, compliance and education,
    - the Government's goals,
    - Department's outcomes and services;
    - financials; and
- assessment of stock status and catch ranges for all major commercial fisheries.

The 2009-10 Annual Report can be found at: http://www.fish.wa.gov.au/docs/ar/index.php?0706

The FRMA states as one of its objects under Section 3 that:

> *"The objects of the Act are to conserve, develop and share the fish resources of the State for the benefit of present and future generations."*

(2)In particular, this Act has the following objects—

(a) to conserve fish and to protect their environment;

(b) to ensure that the exploitation of fish resources is carried out in a sustainable manner;

(c) to enable the management of fishing, aquaculture and associated industries, aquatic eco-tourism and other tourism reliant on fishing;

(d) to foster the development of commercial and recreational fishing and aquaculture including the establishment and management of aquaculture facilities for community or commercial purposes;

(e) to achieve the optimum economic, social and other benefits from the use of fish resources;

[16] *Public Sector Management Act 1994:*
*H*http://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_771_homepage.htmlH

(f) *to enable the allocation of fish resources between users of those resources;*

(g) *to provide for the control of foreign interests in fishing, aquaculture and associated industries;*

(h) *to enable the management of fish habitat protection areas and the Abrolhos Islands reserve.*

The West Coast Rock Lobster Management Plan Amendment (No 11) 2010, published in the Government Gazette No 208 on 5 November 2010, sets out the rules for the fishery that under pin the objects of the Act regarding the rock lobster resource. The management Plan can be accessed by following the West Coast Rock Lobster link at: http://www.slp.wa.gov.au/statutes/subsiduary.nsf/FisheriesT?OpenPage&Start=30 [17]

The management plan and the associated regulations sets out such things as when and where people can fish (open and closing dates for the season and open and closed areas); who can fish (licenses required); how they may fish (e.g. gear types and dimensions); how much they can catch (e.g. quota allocations for commercial fishers and bag limits for recreational fishers) and what they can catch (target and bycatch species). The local offices of the Department of Fisheries (DoF), which are located at all the main rock lobster fishing locations[18], provide fishers (commercial and recreational), processors, and the public generally with compliance officers and other personnel who they can advise them on the rules for fishing.

The legislation also describes the mandatory statutory information that commercial fishers have to record and provide to DoF. Both commercial and recreational fishers can also provide fishery information by being part of the voluntary research log book programmes. These data bases are used for rock lobster research and management purposes. For full details and how the data are collected and used see *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401

Details of the monitoring data and other information that is used for the purposes of compliance / enforcement of the fishing rules in all Western Australian fisheries can be found in the report on *Compliance Program Evaluation and Optimisation in Commercial and Recreational Western Australian Fisheries*. at:
http://www.fish.wa.gov.au/docs/frr/frr195/index.php?0401 .
Sanctions and penalise for those that break the rules can be found in the *Fish Resource Management Act 1994* and *Regulations 1995.*

Disputes regarding the implementation and administration of Fisheries legislation are taken to the State Administrative Tribunal (SAT, see http://www.sat.justice.wa.gov.au/default.aspx) or WA Court System (see http://www.courts.dotag.wa.gov.au/C/courts_history.aspx . The decisions of the SAT and the Courts are binding on the Department (for details see page 44 of the *Annual Report 2009-10* at http://www.fish.wa.gov.au/docs/ar/index.php?0706).

[17] Amendments to the plan that occurred in March 2010 can be found at:
Hhttp://www.slp.wa.gov.au/gazette/GAZETTE.NSF/gazlist/C988A0D2E3504A7E4825784F000E404E/$file/gg035.pdfH

[18] See DoF's Annual Report for numbers of compliance staff and regional offices.
Hhttp://www.fish.wa.gov.au/docs/ar/index.php?0706H

All changes to or new Fisheries legislation, including subsidiary legislation such as management plans, go through the Parliamentary process where it can be passed and enacted, disallowed, amended or sent to one of a number of Committees for review (e.g. Delegated Legislation Committee and Legislation Committee). In this way there is Parliamentary and public scrutiny of fisheries legislation.

Ecosystem Based Fisheries Management Policy

The Department of Fisheries has implemented Ecosystem Based Fisheries Management (EBFM) and it is the main policy driver for ensuring sustainable fish stocks and ecosystems in WA. This policy is set out in the *State of the Fisheries and Aquatic Resources Report 2009/10* pages 21 to 27 (available at http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706) and in greater detail in Fletcher et al (2010). *An Ecosystem Based Fisheries Management framework: the efficient, regional-level planning tool for management agencies*. Marine Policy 34 (2010) 1226-1238.

In summary the EBFM process provides the operating policy / basis for implementing sustainable fisheries and ecosystem management. It identifies ecological assets in a hierarchical manner and the risks associated with them. The levels of risk are then used as a key input to the Department's Risk Register which, combined with the and assessment of the economic and social values and risks associated with these assets, is an integral component of the annual planning cycle for assigning activity priorities (e.g. management, research, education, compliance, etc) across each Bioregion (e.g. the West Coast Bioregion that incorporates the western rock lobster fishery). A brief description of some of its major areas of focus are provided below.

EBFM monitoring and assessment of ecosystem assets

The *State of the Fisheries and Aquatic Resources Report 2009/10* pages 21 to 27, provides a summary of the monitoring and assessment of ecosystem assets, such as deepwater and coral ecology and the project on the trophic role of rock lobster in deep water ecosystems, in the West Coast Bioregion where the WRLF is situated. It also describes the establishment of baseline maps and information on the current distribution and composition of the fish, coral, algal and other communities within the Bioregion. Cost effective indicators for detecting changes in ecosystems are being development to measure any significant changes generated by either natural or anthropogenic causes that could affect the fisheries and other activities in a region. The Biodiversity and Biosecurity Branch of DoF is involved in several studies that involve mapping of habitats in the bioregion. The focus of these projects is to map the dominant marine habitats and conduct biodiversity surveys in order to build spatial habitat models of the marine environment. Outputs from these habitat mapping and biodiversity surveys will assist in the identification of key marine indicators, and will support regional natural resource management groups in establishing marine ecosystem monitoring targets.

DoF also inputs into the Western Australian Environmental Protection Authority's environmental impact assessment process when a development proposal has the potential, if implemented, to impact on the aquatic environment. It also continues to actively engage with the natural resource management groups within the West Coast to promote sustainable use of the aquatic environment, and has 'introduced aquatic organism incursion' and 'fish kill incident response' programs to minimise risks to the marine environment through the introduction of exotic aquatic organisms, or other incidents which have the potential to have an adverse effect.

EBFM and Bycatch

A bycatch risk assessment method to rapidly assess the cumulative risk to sustainability of multiple fisheries has been developed. The method draws on other techniques already published in scientific literature and adds a new cumulative ranked estimate of total catch across multiple fisheries. The Ranked Risk Assessment of Multiple Fisheries (RRAMF) allows ranking of bycatch species within each fishery and to accumulate the ranks across multiple fisheries incorporating the relative impact of each fishery. Another feature of this study is that it does not present a single risk result for each species, rather it shows a range of scores based on a variety of combinations of double-weighted parameters used in the risk assessment. The RRAMF method was tested on the West Coast and Gascoyne Coast Bioregions of Western Australia using fishery independent data for general teleost and elasmobranch bycatch; and fishery dependent data for threatened, endangered and protected species (TEPs). The analyses are in the final stages of completion and will be written up as a Fisheries Research Report.

Customary Fishing Policy

A customary fishing strategy has been developed (see Aboriginal Fishing Strategy: "Recognising the past, fishing for the future" at http://www.fish.wa.gov.au/docs/mp/mp168/index.php?0706 and as part of the Integrated Fisheries Management resource sharing process, which is provided in more detail under PI 3.2.5 Monitoring and Management Performance Evaluation, Integrated Fisheries Management – Resource Sharing WRLF (below).

3.1.2 Consultation, roles and responsibilities

Component	PI Category	PI	SG60	SG80	SG100
Governance and policy	**Consultation, roles and responsibilities 3.1.2**	The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood. The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction. The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained. The consultation process provides opportunity for all interested and affected parties to be involved.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used. The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.

WRLF Management Information – 3.1.2 Consultation, roles and responsibilities

Figure 2 shows the overarching consultation framework for fisheries in WA and Table 1 sets out the operating procedure agreed between the peak commercial fishing representative body, WAFIC, and DoF. Figure 4 shows the detailed consultation arrangements for the WRLF.

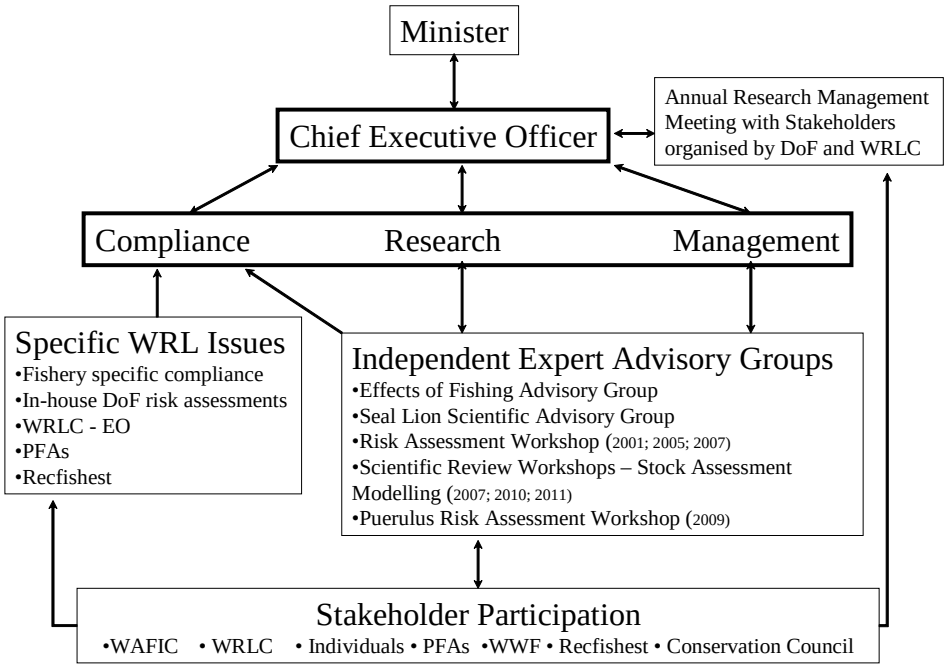

Figure 4 Western Rock Lobster Fishery consultation and decision making process (produced by Jason How).

It should be noted that stakeholders can also make direct submissions to the Minister for Fisheries and the Chief Executive Officer of DoF.

Consultation arrangements for the commercial rock lobster industry have recently changed, in that RLIAC was disbanded in mid 2010 and new consultation and advisory mechanisms have been put in place. Central to this change is that the peak body WAFIC is now the major conduit for consultation with the commercial fishing sector (see Table 1). For rock lobster specific issues, WAFIC delegates the WRLC to undertake the consultations (see Table 1). DoF and WAFIC are also currently negotiating a service level agreement that will set out in detail the consultation and decision making process that WAFIC will be expected to implement.

Organisations and individuals involved in the management / consultation process have been identified as per Figure 4. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction, as shown in Figure 4 and Table 1.

The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge by inviting stakeholders to various forums where they can have input. Stakeholders that are invited include:

- WAFIC,
- WRLC,
- Professional Fishers' Association representatives,
- Recfishwest,
- State Government Agencies,
- conservation sector representatives (Conservation Council of WA and WWF),
- processors representatives,
- universities,

- interested individuals, investors, banking representatives, boat brokers etc

DoF keeps an updated list of interested parties to send invitations and information to. The consultation process is diverse so as to enable as many stakeholders as possible to participate and have meaningful input. It consists of the following:

Research and Management

- Annual meetings between the fishing industry stakeholders and DoF managers and researchers. These meetings are now co-ordinated by the WRLC and DoF. The meetings are also open to the other stakeholder groups (e.g. Recfishwest, processors, conservation sector) and the general public.
- Ad hoc meeting between WRL Professional Fishers Associations (PFA) and DoF managers, researchers and local compliance officers.
- Risk assessments to which all stakeholders representatives are invited.
- Expert review group meetings and workshops to which all stakeholders representatives are invited.
- Discussion papers that seek input from all stakeholders.
- Published reports/papers.

Compliance

- DoF internal annual WRLF compliance risk assessment
- WRLF preseason (and if issues arise during season) meetings between DoF representatives and WAFIC / WRLC to discuss compliance concerns.
- Compliance officers regularly attend PFA meetings in their local district to discuss issues and keep fishers informed.

Appendix 2 provides a list of the consultations that took place regarding the WRLF in 2010 and some of the published information provided to stakeholders for them can found at http://www.fish.wa.gov.au/sec/com/fisheries/WCRockLobster0910Consultation.php?0206 . The information stakeholders provide to DoF at these forums was considered when making research, management and compliance decisions.

Legislative Consultation Requirements for Changing the WRLF Management Plan

Section 64 and 65 of the FRMA (below) sets out the legislative consultation requirements the Minister must adhere to when determining and amending a management plan. In the case of the WRLF's management plan WAFIC is the peak commercial fishing body that the Minister must consult with and WAFIC delegates the consultation to the WRLC.

64. Procedure before determining management plan

(1) Before determining a management plan for a managed fishery under section 54(1) the Minister must—

(a) consult with —

(i) any advisory committee established in respect of the fishery; and

(ii) such other advisory committees or persons, if any, as the Minister thinks appropriate;

and

(b) consider any representations made under subsection (3).

(2) The Minister must, not less than 2 months before determining a management plan for a managed fishery under section 54(1), prepare a draft of the plan and by notice in the *Gazette* —

(a) state that the Minister intends to determine a management plan for the fishery;

(b) invite interested persons who wish to comment on the draft plan to make representations to the Minister by a date specified in the notice; and

(c) specify an address from which copies of the draft plan may be obtained and an address to which representations may be forwarded.

(3) A person may, not later than the date specified in the notice, make representations to the Minister in connection with the draft plan.

65. Procedure before amending management plan

(1) A management plan must specify an advisory committee or advisory committees or a person or persons who are to be consulted before the plan is amended or revoked.

(2) Before amending or revoking a management plan the Minister must consult with the advisory committee or advisory committees or the person or persons specified for that purpose in the plan.

(3) Despite subsection (2), the Minister may amend a management plan without consulting in accordance with that subsection if, in the Minister's opinion, the amendment is —

(a) required urgently; or

(b) of a minor nature.

(4) If —

(a) the Minister amends a management plan; and

(b) the amendment is made without consultation because it is, in the Minister's opinion, required urgently,

the Minister must consult with the advisory committee or advisory committees or the person or persons specified for that purpose in the plan as soon as practicable after the plan has been amended.

WAFIC and the WRLC were involved in detailed consultations with DoF regarding the recent changes to the WRLF management plan that implemented the quota system.

3.1.3 Long term objectives

Component	PI Category	PI	SG60	SG80	SG100
Governance and policy	**Long term objectives 3.1.3**	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.	Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy

WRLF Management Information – 3.1.3 Long term objectives

Over arching long term sustainability objectives are set out in WA fisheries legislation and Commonwealth (national) fisheries and environmental legislation that WA fisheries must also comply with. An overview of these objectives is provided below.

Long Term Objectives – the Fisheries Resource Management Act and Fisheries Policy

The Objects of the Act as described in PI 3.1.1 – Legal and/or customary framework sets out the overarching long term sustainability strategy for fisheries and the aquatic environment that is set out in the FRMA. A description of how the general legislation integrates with the fisheries policy framework that underpins long term sustainability objectives of ecosystem base management is available in –

A Sea Change for Aquatic Sustainability – Meeting the Challenge of Fish Resource and Aquatic Sustainability in the 21st Century. (http://www.fish.wa.gov.au/docs/op/op079/index.php?0706)

Western Australian Sustainable Fisheries Legislation – Broad Scope and Guiding Principles

The broad scope of enabling legislation for aquatic resources in WA ensures that it:

- Manages all factors associated with fishing (ESD and ecosystem-based fisheries management).
- Provides a clear basis for management of a whole biological resource (as opposed to just one sector).
- Gives effect to integrated fisheries management by:
    - creating head powers that can establish management strategies with clear biological outcomes for all sectors as required;
    - establishing formal harvest allocations where these have been made; or
    - describes the basis of informal allocations where these operate.
- Clearly distinguishes between managed aquatic resources and fisheries with biological targets and socially regulated fisheries.

The guiding principles that were used to develop the new Act were that it:

- Provided an integrated aquatic resource management framework which incorporated ESD and biodiversity conservation goals.
- Incorporated the precautionary principle more explicitly.
- Broadened the base of the Act to include aquatic ecosystem issues in the management prescriptions.
- Provided a basis for simplifying subsidiary legislation where possible.
- Provided for greater devolution of decision making and delegation where suitable.
- Provided flexibility for more cost-effective management based on more explicit risk assessment.

- Provided explicit head powers to achieve biological and allocation outcomes across all harvest sectors as required.
- Provided improved security of access for all resource users.

Commonwealth Government Sustainable Fisheries Legislation

WA Fisheries legislation and policy also has to conform to over arching Commonwealth Government fisheries and environmental law. The Department of Sustainability, Environment, Water, Populations and Communities[19] oversees the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) under which the Australian Government, through the Commonwealth Minister, has a legislative responsibility to ensure that:

- all Commonwealth managed fisheries undergo strategic environmental impact assessment before new management arrangements are brought into effect; and
- all fisheries in Australia, from which product is exported (e.g. the WRLF), undergo assessment to determine the extent to which management arrangements will ensure the fishery is managed in an ecologically sustainable way.

To assist in this assessment process the Australian Government developed, after extensive consultation with industry, governments and environmental groups, the *Guidelines for the Ecologically Sustainable Management of Fisheries* (the Guidelines)[20]. These Guidelines aid in ensuring rigorous and transparent assessments are conducted in close cooperation with Commonwealth and State fisheries agencies, the fishing industry and the wider community.

Fishery assessments are conducted against the Guidelines which outline specific principles and objectives designed to ensure a strategic and transparent way of evaluating the ecological sustainability of fishery management arrangements. Adequate performance of fishing in relation to the Guidelines will see that the management arrangements demonstrate a precautionary approach, particularly in the absence of information. A precautionary approach should be used in all stages of fishery management, from planning through to assessment, enforcement and then re-evaluation.

A precautionary approach requires managers utilise the best scientific evidence available when designing a management regime. It also requires that a minimum level of information be available before a fishery is established. Thus information collection and ongoing research is of significant importance and maybe inversely proportional to the level of precaution that a fishery takes in setting management measures. Sources of uncertainty within the data should be identified and where possible quantified. Until research on the specific stock provides information, a precautionary approach should set conservative limits to account for the unknown level of uncertainty.

To satisfy the Australian Government requirements for a demonstrably ecologically sustainable fishery, the fishery or fisheries if a species is caught in more than one fishery, must operate under a management regime that meets Principles 1 and 2 of the Guidelines. The management regime must take into account arrangements in other jurisdictions, and adhere to arrangements established under Australian laws and international agreements.

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[19]Department of Sustainability, Environment, Water, Populations and Communities website is at Hhttp://www.environment.gov.au/coasts/fisheries/index.htmlH

[20] The *Guidelines for the Ecologically Sustainable Management of Fisheries* can be found at Hhttp://www.environment.gov.au/coasts/fisheries/publications/guidelines.htmlH)

The management regime does not have to be a formal statutory fishery management plan as such, and may include non-statutory management arrangements or management policies and programs. The regime should:

- Be documented, publicly available and transparent;
- Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public;
- Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process;
- Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured;
- Be capable of controlling the level of harvest in the fishery using input and/or output controls;
- Contain the means of enforcing critical aspects of the management arrangements;
- Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria;
- Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates; and
- Require compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under that policy.

Commonwealth Government Fisheries Assessments
An independent assessment of all export (e.g. the WRLF) and all Australian Government managed fisheries is required. These assessments ensure that, over time, fisheries are managed in an ecologically sustainable way. The assessments are conducted against the Guidelines , which outline specific principles and objectives designed to ensure a strategic and transparent way of evaluating the ecological sustainability of fishery management arrangements.

The WRLF's ESD report for the Commonwealth Government is available at: http://www.fish.wa.gov.au/docs/esd/esd004/index.php?0706 and the Commonwealth Department of Sustainability, Environment, Water, Populations and Communities response to it is available at: http://www.environment.gov.au/coasts/fisheries/wa/rocklob/index.html

Ecosystem Based Fishery Management
Overarching and long term fisheries and ecological sustainability strategies that specifically include a precautionary approach, are being implemented by the Department of Fisheries through its Ecosystem Based Fisheries Management (EBFM) policies, which are set out in the State of the Fisheries and Aquatic Resources Report 2009/10, pages 21 to 27 (http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706) and in greater detail in Fletcher et al (2010). *An Ecosystem Based Fisheries Management framework: the efficient, regional-level planning tool for management agencies*. Marine Policy 34 (2010) 1226-1238.

In summary the EBFM process provides the operating policy / basis for implementing sustainable fisheries and ecosystem management. It identifies ecological assets in a hierarchical manner and the risks associated with them. The levels of risk are then used as a key input to the Department's Risk Register which, combined with the and assessment of the economic and social values and risks associated with these assets, is an integral component of the annual planning cycle for assigning activity priorities (e.g. management, research,

compliance, education, etc) across each Bioregion (e.g. the West Coast Bioregion that incorporates the western rock lobster fishery).

3.1.4 Incentives for sustainable fishing

Component	PI Category	PI	SG60	SG80	SG100
Governance and policy	**Incentives for sustainable fishing 3.1.4**	The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices.

WRLF Management Information – 3.1.4 Incentives for sustainable fishing

WA fisheries legislation and in particular that governing the WRLF has policies and principles that provide incentives to fishers to fish sustainably and encourage a sense of stewardship towards the resource. These are reflected in:

- A stable, well maintained, easily accessible management, licensing and catch allocation system which provides stability and security for fishers access to the resource. For WRLF this is in the form of individual quotas. Fishers can trade (buy, sell or lease) quota/units before and during the season, which provides them with maximum economic flexibility. These 'property rights' engender a sense of ownership of the resource and a commitment to long term sustainability to protect their investment. The new quota system will be upgraded to a 'register' similar to that used for land titles.
- Quotas and fishing effort controls that are set to produce maximum economic yield (i.e. well below MSY), which evens out inter-annual and intra-annual catch variations, thereby making the fishery economically more stable and viable, which provides industry with a more secure investment environment (e.g. when borrowings from financial institutions).
- Rigorous enforcement of the fishing rules and substantial fines and other significant disincentives (e.g. loss of fishing time, catch units, etc) are important aspects of ensuring fishers and processors do not undermine the sustainability of the fishery through illegal activities.
- Regular information updates and discussions with stakeholders (particularly commercial industry – fishers, processors, etc) on research (including projected future catches), management and compliance arrangement for current and future seasons and issues that arise during the fishing season. They include:
    - Annual research, management and compliance meetings with all stakeholders, particularly the commercial sector.
    - Ad hoc research, management and compliance meetings during the season with WRLC representatives and WRL PFAs
    - WRLF newsletter
    - A wide range of policy, research, management, educational, compliance other publications on the DoF website.

    - Specific targeted education programs run by DoF's Community Relations Branch.
    - Information on the WAFIC and WRLC websites.

    This information and interaction encourage stakeholders, particularly fishers, to take a sustainable and responsible approach to fishing and to support the management arrangements that underpin orderly fishing and long term sustainability (see Appendix 2 for further details of the types of consultations).
- The ability of stakeholders to participate in the research, management and compliance consultation processes (as described under 3.1.2 and 3.2.2, 3.2.3 and 3.2.4) and the clearly defined roles, rights and responsibilities of the various stakeholders that is set out in fisheries legislation, policies and consultation processes (as described under 3.1.2 and 3.2.2) also engenders a sense of stewardship for the resource.
- Well defined processes and timeframes, which are enshrined in legislation and / or policy, for strategic and statutory management planning, give certainty about the rules and goals of management. For example if management changes are being considered a discussion paper setting out the proposed changes is usually sent to stakeholders seeking their input and workshops to inform and work through issues with affected stakeholders may also be conducted.

Incentives to fish unsustainably

There are no incentives for WRL fishers to fish unsustainably. Research, management and compliance monitor adherence to sustainable fishing arrangements and make adjustments to them if necessary. One of the most important changes to the management arrangement that has reduced the incentive for fishers to fish in an unsustainable way has been the move from input / effort controls to output controls / quotas. This change has eliminated the race to fish and the fierce competition between fishers to maximise their share of the available catch, without them considering the overall sustainability implications of their actions. Another example has been the recent management changes to protect the breeding stock, which included a reduction of the TAC to 5,500 t for three seasons and closing the Big Bank breeding stock area.

3.2 Fishery Specific Management System Performance Indicators

3.2.1 Fishery specific objectives

Component	PI Category	PI	SG60	SG80	SG100
Fishery- specific management system	**Fishery- specific objectives 3.2.1**	The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system.	Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.

WRLF Management Information – 3.2.1 Fishery specific objectives

Set out below are examples of the WRLF's managements system's explicit and measurable short and long-term objectives and performance indicators and measures, which demonstrate they are consistent with achieving the outcomes expressed in MSC Principles 1 and 2. The operational objectives to address issues that are considered to be a risk (i.e. ERA issues assessed[21] as moderate or greater such as increases in fishing efficiency, ecological effects of fishing, etc. can be found in the EMS, which is published as Fisheries Occasional Publications No. 95 on the DoF website at http://www.fish.wa.gov.au/docs/op/index.php?0706 .

Management objective for the western rock lobster fishery
The management rules for the West Coast Rock Lobster Managed Fishery are aimed primarily at protecting the breeding stock. The regulations are continually reviewed to ensure the breeding stock is maintained at a sustainable level, i.e. above a threshold Biological Reference Point (BRP).

WRLF objective, performance indicator and measure – "*Ensure that the egg production in each Zone of the fishery remains above its threshold level and the probability of still being above this level in five years time is at least 75%.*". The threshold BRP for a sustainable breeding stock is deemed to be the egg production during the 1980s for coastal and Abrolhos regions (see Figure 1 above for a map of zones). This reference time period was chosen as it generally represents the period when egg production was not affected by significant increases in efficiency associated with the widespread use of GPS in the fishery to locate good fishing grounds.[22]

Current breeding stock levels for the three zones of the fishery (Figure 1) are above the threshold level and modelling indicates that the probability of them remaining above this level in five years time is at least 75%. Therefore the fishery has met this performance measure. The performance indicator for the BRP is based on egg production measures from a population dynamic model, which is currently being updated and this may affect the threshold levels. See modelled levels of breeding stock in *Draft Stock Assessment for the West Coast Rock Lobster Fishery* Chapter 5 (commencing page 113) at:
http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401

[21] See the 2007 ERA at Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H .
[22] For a detailed explanation see *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: Hhttp://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401H

Harvest strategy and decision rules – DoF has developed a harvest strategy policy for all fisheries in WA[23] that has provided the policy framework for the development of the harvest strategy for the WRLF. Details of the harvest strategy and decision rules that were proposed for the WRLF when it was managed under input controls can be found in the public discussion paper at: http://www.fish.wa.gov.au/docs/mp/mp239/index.php?0706 . This paper is currently being modified to take account of the implementation of the quota management system for the fishery before it is released for public comment. However, the principle regarding the conservation (i.e. threshold levels etc) of the breeding stock will remain unchanged.

Current management strategies to achieve the objective

The fishery was managed by a total allowable effort (TAE) system and associated input controls up until 2009/10. The main control mechanism was the number of units (pots) for the fishery, together with a proportional usage rate and the number of days allowed to fish, which created the TAE in pot lifts (i.e. number of pots in the fishery multiplied by the usage rate and the number of days in the season). This is known as an individually transferable effort (ITE) management system. The number of units allowed in the fishery was set at 69 000 in the early 1990s, and since 1993/94 a usage rate of 82% has operated to keep the TAE at a sustainable level. In 2005/06 and 2007/08 further reductions in the usage rate were introduced in zones A and B. Significant reductions in fishing effort were introduced in 2008/09 and 2009/10 to achieve a nominal catch limit that took into account low puerulus settlement. For further details see *Draft Stock Assessment for the West Coast Rock Lobster Fishery* (Section 2.4 commencing on page 17) at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401.

Management arrangements also include the protection of females in breeding condition, a variable minimum carapace length and a maximum female carapace length. Gear controls, including escape gaps and a limit on the volume of pots are also significant in controlling harvest rates. A summary of the WRL management arrangements for the 2010/11 season is provided below:

2010/11 Season general management arrangements

- Closed season 1 September–14 November (Coastal Zones), 1 September–14 March (Abrolhos Island).
- Licensees can only operate in the zone for which they are licensed.
- It is illegal to take females with setose pleopods.
- Pot types have maximum size and configuration regulations.
- To operate in the managed fishery, a licensee must have at least 63 units of pot entitlement.
- Units have an associated catch limit depending on which zone they are attached to.

2010/11 Season specific management arrangements

- Total Allowable Commercial Catch (TACC) of 5,500 tonnes set for the 2009/10 season.
- Individual catch limits introduced with the following number of kilograms per Unit for the different licensees:
    - Zone A – 36 kg from 15 November to 14 March

[23] Department of Fisheries 2011. Harvest Strategy Policy and Guidelines for Fisheries in Western Australia. *Fisheries Management Paper* (in press)

    - Zone A – 51 kg from 15 March to end of season (to be taken in Zone B)
    - Zone B – 81 kg for entire season
    - Zone C – 75 kg for entire season

- Fishing prohibited weekends
- Big Bank to remain closed
- Season extended to 31 August
- Zone C start date moved from 25 November to 15 November
- 20 fathom rule removed
- Introduction of crate tags catch and disposal records, authorised receivers, holding over book and catch weighing procedures to monitor fishers' catch.
- Limited "within-season" transferability of entitlement

There are several marine parks or fish habitat protection areas throughout the state where fishing for western rock lobster are prohibited. None of these areas were specifically implemented as a direct management strategy by the Department of Fisheries, however they represent another management restriction on fishers, both commercial and recreational.

Management strategies specific to recreational fishing

The recreational component of the western rock lobster fishery is managed under fisheries regulations that impose a mix of input and output controls on individual recreational fishers. These arrangements are designed to complement the management plan for the commercial fishery.

Input controls include the requirement for a recreational fishing licence. Recreational fishers are restricted to two pots per licence holder, although the total number of licences is not restricted. The pots must meet the specific size requirements and must have gaps to allow under-size rock lobsters to escape. For specific details on recreational pot dimensions see web site http://www.fish.wa.gov.au/docs/pub/FishingRockLobsters/FishingforRockLobstersPage06.php?0102.

Divers are also restricted to catching by hand, snare or blunt crook in order that lobsters are not damaged. Fishing for rock lobsters at the Abrolhos Islands is restricted to potting only.

The recreational fishing season runs from 15 November to 30 June each year, with a shorter season (15 March to 30 June) at the Abrolhos Islands. Night-time fishing for lobsters by diving is prohibited.

Recreational fishers comply with the same legislation as the commercial fishers with regard to the size and breeding condition of lobsters they can take and when, except there is a daily bag limit of 6 lobsters per fisher per day. Where there are three or more people fishing from the same boat, a daily boat limit of 12 lobsters provides further control on high individual catches. These individual and boat limits were introduced on 1 December 2008, down from the previous limits of 8 and 16. At the same time a possession limit was also introduced of 24 lobsters in response to forecast low catch years of 2011/12 and 2012/13. There is also a requirement for recreationally caught lobsters to be tail-clipped in order to stop these animals from being sold illegally.

Further details of the management objectives, stock assessment and modelling and management arrangements can be found in the *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401

Sharing the catch between commercial, recreational and customary users
To ensure a sustainable balance between commercial, recreational and customary catches, the Minister for Fisheries determined (in March 2008), through the Integrated Fisheries Management (IFM) process that the allocated shares of the sectors or the West Coast Rock Lobster Fishery would be 95% to the commercial Sector, 5% to the recreational sector and one tonne to customary fishers. The 2009/10 season was the first season where these shares were formally allocated for all sectors. See http://www.fish.wa.gov.au/docs/media/index.php?0000&mr=285 for further details of the IFM process for the WRLF and the *Processes for the Allocation, Reallocation and Governance of Resource Access in connection with a Framework for the Future Management of Fisheries in Western Australia* at http://www.fish.wa.gov.au/docs/mp/mr007/index.php?0706 for an overview of the catch sharing allocation and reallocation process.

A general overview and summary of the WRLF research and management information, including objectives, performance measures and data used, can be found in the *State of the Fishery and Aquatic Resources 2009/10* at http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706

Other WRLF performance indicators
Performance indicators and measures for some retained and non-retained species have been established even though ERAs have assessed the risks as either negligible or low. See results of ERAs that were conducted in: 2001 (http://www.fish.wa.gov.au/docs/op/op063/index.php?0706), 2005 (http://www.fish.wa.gov.au/docs/op/op025/index.php?0706) and 2007 (http://www.fish.wa.gov.au/docs/op/op056/index.php?0706).

Retained species
***Octopus*:** Octopus are caught in rock lobster pots, generally in shallow water (<40 m), and a catch rate of 0.03 octopus per pot lift was recorded in the 2008/09 voluntary research log book data. This was 25% above the average of 0.024 per pot lift over the historical range (1985/86 to 2003/04). This catch rate translates to an estimated 120,337 octopus caught in all regions of the fishery during 2008/09. Octopus catches were estimated for A, B and C Zones as 16,562, 49,087, and 54,688, respectively.
Octopus performance indicator and measure for the fishery: Catch rate of octopus (incidental landings) is an indicator for the fishery and at 0.03 octopus per pot lift for 2008/09 achieved the performance measure of being within 10% of the historical range, i.e. 0.013-0.0333 octopus per pot lift.

Non-retained species
By-catch species – fish and invertebrates (risk: Low)
Researchers monitoring onboard commercial vessels records the catch rates of fish and invertebrate by-catch species caught during normal rock lobster fishing operations. Approximately 41,904 fish and invertebrates other than rock lobster and octopus were estimated to have been captured during the 2008/09 fishing season, of which most were released. This is 52% less that last year's catch and is due to the reduced fishing effort in the fishery. See Table 1 on page 35 of the *State of the Fishery and Aquatic Resources 2009/10* at http://www.fish.wa.gov.au/docs/sof/2009/index.php?0706 for details.

Protected species interaction
***Sea lions*:** In the past the WRLF interacted with the coastal populations of Australian sea lion, *Neophoca cinerea*, resulting in the accidental drowning of an estimated small number of

sea lion pups in rock lobster pots, as the pups attempted to retrieve from the traps the bait or rock lobsters contained in them. Such incidents were restricted to shallow waters (< 20 m) and to areas within 30 km of the mainland sea lion breeding colonies on the mid-west coast. In order to eliminate these accidental drownings, from 15 November 2006 all pots fished in waters less than 20 m within approximately 30 km of the 3 coastal breeding colonies, i.e. just north of Freshwater Point to just south of Wedge Island, were fitted with an approved Sea Lion Exclusion Device (SLED). Video trials have indicated that this device stops sea lion pups from entering lobsters pots and drowning. Approved SLED designs include an internal rigid structure, directly under the pot neck and an external design across the top of the pot, both of which ensure that the diagonal distance from the SLED to the neck of the pot is not greater than 132 mm. Further information on the SLED management package is available at http://www.fish.wa.gov.au/docs/pub/SeaLionExclusionDevices/index.php
At sea compliance monitoring of commercial pots in the SLED zone in 2007/08 – 2008/09 (latest available data) showed that over 95% of pots checked had an approved SLED.

More recently research has indicated that trap interaction could also be occurring with juvenile sea lions at the Abrolhos Is. To eliminate this risk SLED zones (i.e. all pots fishing in the zone have to have SLEDs fitted) were proclaimed around the breeding colonies at the Southern (Pelsart) Group and the Easter Group at the Abrolhos Is on 1 March 2011. For further details see http://www.fish.wa.gov.au/docs/media/index.php?0000&mr=791

Sea lion performance measure for the fishery – There is no increase in the rate of capture of sea lions. Prior to the introduction of SLEDs there was on average three reported sea lion drownings in traps per year. In 2008/09 (latest available data) no sea lion drownings were reported. The fishery has therefore met this performance measure.

All sea lion breeding colonies within the boundaries of the WRLF are now protected by the use of SLEDs, which eliminate juveniles drowning in traps. Ongoing at sea compliance will ensure the integrity of the SLED zones.

Turtles – Turtle deaths as a direct result of interaction with the lobster fishery are very rare. Of the 6 turtle species that occur in the waters of the western rock lobster fishery, only the entanglement of leatherback turtles (*Dermochelys coriacea*) was considered to be above a negligible risk, and this was still rated as a low risk. Given the recent significant reductions in fishing effort (more than 50%) and hence pot ropes in the water since this assessment was completed[24], the current risk is probably now even lower.
Turtle performance measure for the fishery: That there is no increase in interactions with turtles. The historic range of interaction is between two and five entanglements annually. In 2008/09 (latest available data) no leatherback turtles were reported to have been entangled in lobster fishing gear. The fishery has therefore met this performance measure.

Whale – There are occasional reports of a whale becoming entangled with pot ropes. The humpback whale is the predominant species that interacts with the WRLF, during its northward migration to the North West Shelf breeding grounds between June and August. Owing to the fishery's closed season, there is a limited period for interaction, however, with

[24] See the Ecological Risk Assessments that were conducted in:
2001 (Hhttp://www.fish.wa.gov.au/docs/op/op063/index.php?0706H),
2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and
2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H).

the increasing population of whales more interactions were considered likely to occur in the future, but the large reduction in effort levels (over 50%) means that this increase may no longer eventuate.

Interactions with whales are reported by WRL fishers to the Department of Environment and Conservation (DEC) and a specialist team is used to disentangle them, with a very high success rate. The western rock lobster fishing industry has developed a code of practice to minimise the interaction with whales in conjunction with DEC and SeaNet, see http://www.rocklobsterwa.com/. The environmental management strategy adopted for the WRLF's interaction with whales requires monitoring of interactions and attempts to minimise accidental entanglements whenever practicable.

Whale performance measure for the fishery – There is no increase in the rate of interactions (entanglements) with whales and dolphins. Since records have been kept (1989-2008, latest available) there have been between zero and four entanglements per season. One entanglement was recorded in 2008/09 and the whale was successfully freed. Therefore the fishery has met this performance measure.

Dusky whaler sharks *(identified as a moderate risk):*
Bait bands that are discarded or accidentally washed from rock lobster fishing vessels may be a source of mortality of Dusky whaler sharks (see the 2007 ERA at http://www.fish.wa.gov.au/docs/op/op056/index.php?0706 for details). As a precaution the Minister for Fisheries has announced a prohibition on the use of plastic bait bands on all active fishing boats in Western Australian. Legislation is currently being prepared to implement the ban prior to 15 November 2011. This will eliminate this source of mortality on Dusky whaler sharks. For further details see the EMS, which is published as Fisheries Occasional Publications No. 95 on the DoF website at http://www.fish.wa.gov.au/docs/op/index.php?0706 .

Ecosystem Effects
Food chain
Overall, the fishery is unlikely to cause significant trophic ('food web') cascade effects, as the protected sub-legal-sized lobsters and breeding stock components form a relatively constant significant proportion of the biomass which remains from year-to-year, and the catch, particularly in inshore areas, is less than the annual variability in biomass due to natural recruitment cycles. However, the rock lobster-specific ecological risk assessment completed in 2007 (http://www.fish.wa.gov.au/docs/op/op056/index.php?0706) considered that, due to the lack of information, the removal of legal size lobster in deep-water regions might have some level of impact on the surrounding ecosystem. The ERA subsequently classed this as a moderate risk. Consequently it has become a focus of research, with preliminary work, funded by FRDC now completed[25] and a second Western Australia Marine Science Institution (WAMSI)/ Fisheries Research and Development Corporation (FRDC) project comparing fished and unfished areas has now been initiated to expand on these preliminary findings. For details of the completed project and the new WRL deepwater ecology project (comparing fished and unfished areas) and other projects related to lobster ecology see *Western Rock Lobster Ecology – The Current State of Knowledge* at http://www.fish.wa.gov.au/docs/op/op089/index.php?0706

Habitat effects

[25] See *The effect of western rock lobster fishing on the deepwater ecosystems of the west coast of Western Australia*. Hhttp://www.fish.wa.gov.au/docs/frr/frr199/index.php?0401H

Ghost fishing - The legislated design of rock lobster pots, the materials they are made from and the strict control of replacement pots prevent 'ghost fishing' problems arising.

Impact on coral – A study of human impacts on the marine environments of the Abrolhos Islands estimated that potting might impact on less than 0.3% of the surface area of fragile habitat (corals) at the Abrolhos, where fishing is only allowed for 3½ months of the year.

Limestone reef – Generally, throughout the coastal fishery, rock lobster fishing occurs on sand areas around robust limestone reef habitats, covered with coralline and macro-algae such as kelp (*Ecklonia* spp.). This type of high-energy coastal habitat is regularly subjected to swell and winter storms and so is considered highly resistant to damage from rock lobster potting.

The significant recent reductions in fishing effort (~50%) will also further reduce the risks to all habitat types. For further information on this and related WRL ecology topics see *Western Rock Lobster Ecology – The Current State of Knowledge* at http://www.fish.wa.gov.au/docs/op/op089/index.php?0706 and the EMS, which is published as Fisheries Occasional Publications No. 95 on the DoF website at http://www.fish.wa.gov.au/docs/op/index.php?0706 .

3.2.2 Decision making process

Component	PI Category	PI	SG60	SG80	SG100
Fishery- specific management system	**Decision-making processes 3.2.2**	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives.	There are informal decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Decision-making processes use the precautionary approach and are based on best available information. Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Decision-making processes use the precautionary approach and are based on best available information. Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

WRLF Management Information – 3.2.2 Decision making process

An overview of the general decision making process for fisheries in WA is provided in the Governance section of this document and Figure 2 and for the WRLF it is provided in Figure 4 under PI 3.1.2 above.

These decision-making processes result in measures and strategies that achieve the fishery-specific objectives that incorporate a precautionary approach by using four processes to identify issues that require measures or strategies to be implemented. They consist of:

- Ecological risk assessments (ERA).
- Monitoring that identifies issues that arise in the fishery, e.g. extremely low levels of puerulus settlements and low levels of breeding stock in some areas.
- Results of research, management or compliance projects or investigations.
- Expert workshops and peer reviews of aspects of research and management.

Once an issue or risk has been identified mitigation measures are developed and implemented or, if appropriate, additional research is undertaken and when the results are available they are used to decide if mitigation is required and how it should be done.

Examples of how issues / risks are identified and the resulting management measures or research strategies that resulted from each of the four ways dot pointed above are given below. It should be noted that stakeholders are invited to ERAs, specialist workshops, peer reviews, management and research meetings and their input is also sought through public discussion papers.

Issues Identified by Ecological Risk Assessments

The ERA process involves an independent panel of experts assessing the risks / issues regarding the fishery, which have been identified by stakeholders and giving them a risk ranking. Those issues that are ranked moderate or higher are then subject to mitigation or further research.

Example – Bait Bands

In the 2007 ERA bait bands from rock lobster bait containers that entangle dusky whaler sharks and cause an unknown level of mortality, were identified as a risk to the shark breeding population. The recommendation of the ERA expert panel was that bait bands should be eliminated from the rock lobster fishery[26]. This recommendation was put to the Minister for Fisheries, who after further consultations with the fishing industry announced that taking bait bands to sea would be made illegal not only on rock lobster vessels, but on all fishing boats in WA. Implementation will occur on 15 November 2011.

Example 2 – Ecological Effects of Fishing

In the 2001, 2005 and 2007 ERAs[27] the ecological effects of fishing, i.e. the large scale removal of legal size lobster from the population, was considered to be a moderate risk for deepwater populations were large lobsters are in the majority. The ERAs recommended that research be undertaken to determine if the removals were having an impact on the rock lobster's ecology. To facilitate this, RLIAC established an independent expert group in 2003, the Ecological Scientific Reference Group (Eco SRG), to advise on the issue and help develop a research plan.

An initial research project using gradients in abundance to try and determine possible effects was carried between 2004 and 2007.[28] The project found that it was not possible to determine any impact using gradients in abundance. A second project was then developed by the Eco SRG in 2007 to compare rock lobster ecology in fished and unfished areas in deep water. RLIAC and its committees were disbanded in 2010 in an overhaul of the fisheries Ministerial Advisory Committee system and a new group, the Effects of Fishing Advisory Group (EFAG), was established to take over the advisory role of the Eco SRG. In 2010 EFAG reviewed the second project and the Eco SRG's initial research plan for it. A research closure has been implemented (2011) in the centre of the fishery near Jurien Bay.

The research plan development process are provided in the:

- *Western Rock Lobster Ecological Effects of Fishing Workshop Report* (http://www.fish.wa.gov.au/docs/op/op053/index.php?0706),

[26] See the 2007 ERA report at Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H for details.
[27] See the Ecological Risk Assessments that were conducted in:
2001 (Hhttp://www.fish.wa.gov.au/docs/op/op063/index.php?0706H),
2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and
2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H).
[28] The results of the project are reported at: Hhttp://www.fish.wa.gov.au/docs/frr/frr199/index.php?0401H

- Eco SRG's *Western Rock Lobster Effects of Fishing Research Plan* (http://www.fish.wa.gov.au/docs/op/op072/index.php?0706), and
- report of EFAG's November 2010 meeting and review of the research plan (http://www.fish.wa.gov.au/docs/op/op091/index.php?0706).

An overview of the first and second projects on effects of fishing projects and associated ecological projects conducted by third parties (e.g. Western Australian Marine Science Institution and local universities) that provide information to meet MSC Principle 2 performance indicators can be found in *The Western Rock Lobster Ecology – State of Knowledge* document at: http://www.fish.wa.gov.au/docs/op/op089/index.php?0706 .

Issues Identified by Monitoring

Low Puerulus Settlement – In 2008 monitoring identified the first of three very low puerulus settlements in the fishery. This produced a management response to reduce fishing effort and catch as a precautionary approach[29] and to conduct a Low Puerulus Risk Assessment Workshop in April 2009[30]. The workshop's expert risk assessment panel identified and ranked possible causes of the low puerulus settlements and recommended a number of research projects be initiated to investigate the possible reasons. It also recommended the closure of an area of depleted breeding stock in the north of the fishery known as Big Bank. Five research projects were subsequently funded and the Big Bank area was closed to fishing. Breeding stock in the Big Bank region has since started to recover. A summary of the five projects and the closure of Big Bank can be found in *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401

A major flow on effect of the low puerulus settlements and the strategies and objectives to deal with them has been the decision to move from an input (effort control) to an output (quota) management system. The change to quota was made because it was not possible to control, in real time, the TACC with sufficient accuracy using the complex and cumbersome effort control system, which had led to inequities between fishing regions and individual fishers. This is an example of how management reassessed the management system in light of the objectives it wanted to achieve, i.e. significantly reducing the catch to a sustainable level in the most equitable way, and then made the management decisions required to meet those objectives.

Issues Identified by Research

Sea Lions at the Abrolhos Islands – The ERA process[31] identified that sea lion population could be at risk due to interactions with rock lobster pots. DoF and RLIAC established the Sea Lion Scientific Reference Group (SLSRG) to provide advice on the issue and to make recommendations regarding research[32], which is summarised in the *WRL Environmental Management Strategy 2002 – 2006* at http://www.fish.wa.gov.au/docs/op/op017/index.php Risk 1 page 14 and *Proposed implementation of Sea Lion Exclusion devices in the Western Rock Lobster fishery* at http://www.fish.wa.gov.au/docs/mp/mp197/index.php?0706 . A research project designed by the SLSRG was implemented, which showed that a small number of sea lion pups from the Midwest Coast breeding colonies were at risk of drowning in rock lobster

[29] For a summary of the management responses see: *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at Hhttp://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401H

[30] A report of the workshop can be found at Hhttp://www.fish.wa.gov.au/docs/op/op071/index.php?0706H

[31] See the 2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and 2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H) ERAs.

[32] See the SLSRG reports of 2005 at Hhttp://www.fish.wa.gov.au/docs/op/op016/index.php?0706H , Hhttp://www.fish.wa.gov.au/docs/op/op028/index.php?0706H and the EMS at

traps. Pups at the breeding colonies at the Abrolhos Is did not appear to interact with traps. A precautionary approach was taken to mitigate this risk by making it mandatory that sea lion exclusion devices (SLEDs) be fitted to all traps fished in the coastal risk zone by November 2006.[33]

On the advice of the SLSRG, ongoing research continued to be conducted on the sea lion population at the Abrolhos Is and in late 2008 a report of interaction with a research trap was reported. A meeting of the SLSRG was held in October 2009[34] to review and discuss the results of the research and it recommended that SLEDs be introduced into the area of risk at the Abrolhos. On 15 March 2011, after discussions with the fishing industry and interested stakeholders, a precautionary approach was taken by making SLEDs mandatory for the risk areas around the Abrolhos Is sea lion breeding colonies. At sea compliance ensures the efficacy of the SLEDs mitigation measure.

Issues Identified by Expert Reviews

A review of the 2005/06 stock assessment that was undertaken by Prof Norm Hall in 2006, lead to the first international peer review workshop of the WRLF's stock assessment and modelling in 2007. The workshop identified a number of issues with the stock assessment and modelling and made a series of recommends to improve them.[35] A further review was undertaken in 2010, which looked at the progress made since the 2007 review. It identified some additional issues and made a number of recommendations to improve the stock assessment, model outputs and harvest strategy, for example:

- Reduce the dimensionality of the model.
- Estimate more parameters within the assessment and use as many data sources as possible.
- Efficiency increases and the influence of environmental factors on catchability were considered in the 2010 stock assessment, but it is recommended that estimation of parameters using these data be incorporated directly within the assessment to ensure consistency of assumptions and to fully account for the uncertainty associated with those data.
- Decision rules for the fishery need to be modified to reflect the State Government's decision to move from an input- to an output-based management system. In particular, these rules need to include a target reference point associated with the proposed Maximum Economic Yield (MEY) objective and should specify an explicit management response sufficient to achieve management objectives within a reasonable time frame.
- A number of other prioritized technical recommendations were also made by the Panel. In summary, these relate to validating and refining the new ITQ model developed during the workshop, developing a comprehensive set of diagnostics and sensitivity runs that should accompany the results of the base case assessment in future stock assessments, refinement of the decision rules to allow for the introduction of ITQs and an MEY objective, and the development of a Management Strategy Evaluation framework to ensure that management strategies and assessments are likely to be robust under alternative hypotheses relating to, inter alia, the decline in puerulus settlement.
- A Resource Assessment Group should be established to facilitate ongoing development and testing of the stock assessment.

[33] See State of the Fisheries 2006/07 at Hhttp://www.fish.wa.gov.au/docs/sof/2006/index.php?0706H p19.
[34] The report of the meeting was sent to interested stakeholders, but was not placed on the DoF website.
[35] See *WRL Stock Assessment and Harvest Strategy Workshop 16-20 July 2007* at Hhttp://www.fish.wa.gov.au/docs/op/op050/index.php?0706H

A report of the 2010 workshop with a full list of the recommendations can be found at: http://www.fish.wa.gov.au/docs/op/op081/index.php?0706 and the most up to date stock assessment and description of the model can be found in the *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401 . All the recommendations of the workshop have been or are in the process of being implemented.

A desk review by Prof Punt (one of the authors of the 2010 report) will be undertaken in April 2011 to further review the stock assessments, model outputs and the implementation of the recommendations from the 2010 workshop. The report will be put on the DoF website when it becomes available.

The expert and peer reviews cited above have been instrumental in guiding the development of a model based stock assessment for the WRLF.

Environmental Management Strategy

A description of the issues / risks that have been identified for the rock lobster fishery and have or are currently having measures or strategies implemented to deal with them are described in the WRLF EMS, which is published as Fisheries Occasional Publications No. 95 on the DoF website at http://www.fish.wa.gov.au/docs/op/index.php?0706 .

The above examples and the WRLF EMS show how the decision-making processes responded to important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and how it takes into account of the wider implications of those decisions. The ERAs, EMS and the other associated reports published on the DoF website provide information on why the resulting actions needed to be taken.

3.2.3 Compliance and enforcement

Component	PI Category	PI	SG60	SG80	SG100
Fishery- specific management system	**Compliance and enforcement 3.2.3**	Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective. Sanctions to deal with non-compliance exist and there is some evidence that they are applied. Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence. Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. There is no evidence of systematic non-compliance.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules. Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence. There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery. There is no evidence of systematic non-compliance.

WRLF Management Information – 3.2.3 Compliance and enforcement

A comprehensive monitoring, control and surveillance system has been in operation for the WRLF for a long period of time. The Regional Services Division of the Department of Fisheries[36] is responsible for compliance that enforces relevant management measures, strategies and rules.[37] Compliance is achieved through[38]:

- At sea enforcement by dedicated compliance vessels:
  - fishery closures
  - fishery boundaries
  - fishing gear (identification, escape gaps, SLEDs, gear number, size/volume, etc)
- Land based enforcement at lobster landing locations:
  - licence compliance
  - fishing gear compliance
  - catch declarations

[36] See a description of the Regional Services Division starting at page 57 of the *Annual Report 2009-10*, at Hhttp://www.fish.wa.gov.au/docs/ar/index.php?0706H

[37] Any allegations of official corruption within the Department of Fisheries are handled by the WA Crime and Corruption Commission.

[38] *Annual Report 2009-10*, p 56 at Hhttp://www.fish.wa.gov.au/docs/ar/index.php?0706H

    - bycatch compliance
    - recreational fishers
- Mobile patrols that operate along the length of the fishery:
    - licence compliance
    - fishing gear compliance
    - catch declarations
    - bycatch compliance
    - recreational fishers
- Processing factories compliance monitoring of catches
    - catch declarations
    - legal size and oversize
    - breeding state – berried and setose
- Serious offences unit that undertakes covert operations and deal with connections to organised crime
    - conducts major investigations and initiates proactive intelligence-driven operations
    - targets serious and organised criminal activity within the fishing sector
    - provides specialist investigative training
    - provides technical assistance in relation to covert surveillance
- Fisheries Intelligence Unit / compliance statistics unit
    - responsible for recording and production of intelligence products to support strategic, operational and tactical needs of compliance programs
    - develop monitoring and sampling programmes to meet required confidence limits
    - collects and analyses compliance data
    - provides compliance statistics to help target enforcement activities
- Strategic Policy section of the Regional Services Branch:
    - develops and implements strategic compliance policy and standards
    - provides compliance risk assessments for fisheries
    - provides review and implementation of fisheries management and compliance legislation;
    - oversees collection and analysis of compliance data
    - oversees compliance research projects
    - develops occupational health and safety standards for Fisheries and Marine Officers
    - provides recruitment and training of new and existing Fisheries and Marine Officers

A report on *Compliance Program Evaluation and Optimisation in Commercial and Recreational Western Australian Fisheries* can be found at: http://www.fish.wa.gov.au/docs/frr/frr195/index.php?0401.

Sanctions and penalties

Sanctions to deal with non-compliance in the commercial, recreational and processing sectors are severe and are listed in the FRM Act and FRM Regulations.[39] They consist of:

- significant monetary penalties
- licence cancellations or suspensions
- reduction in trap number for over use (over potting)

[39] Act and Regulations can be viewed at Hhttp://www.slp.wa.gov.au/statutes/subsiduary.nsf/Fisheries?OpenPageH

- confiscation of gear and catch

Page 57 of the *Annual Report 2009-2010* provides a summary table of all the prosecutions, infringements and warning given for all fisheries in WA in 2008 and 2009[40] and Table 2 below provides detailed information for the WRLF.

Table 2 Detail of offences that occurred in the WRLF in 2009/10.

Western Rock Lobster Offences			
1/7/2009 - 30/06/2010			
COMMERCIAL			
Offence Type	Brief Offences	Infringements	Infringement Warnings
Abrolhos Is boundary	0	1	0
Illegal Gear	5	3	5
Licensing	0	10	51
No Licence	0	16	4
Obstruction	4	0	0
Other	10	0	0
Oversize	0	0	7
Processing	0	2	3
Returns/Records	3	3	4
Setose	0	1	25
Spawner	0	0	1
Undersize	0	6	33
	22	**42**	**133**
RECREATIONAL			
Offence Type	Brief Offences	Infringements	Infringement Warnings
Undersize	0	0	2
Closed Waters	0	0	2
Closed Waters	0	6	8
Excess Bag	1	6	6
Excess Gear	4	4	0
Illegal Gear	11	32	22
Licensing	1	11	98
No Licence	0	10	2
Obstruction	9	0	1
Oversize	0	0	2
Processing	2	3	1
Setose	0	2	29
Spawner	0	0	2
Species	0	0	1
Undersize	4	21	115
	32	**95**	**291**

Fishers provide management information

[40]See page 57 of the Annual Report 2009-2010 at Hhttp://www.fish.wa.gov.au/docs/ar/index.php?0706H

Commercial rock lobster fishers provide information that is important to the effective management of the fishery via:

- Daily mandatory catch and disposal records (CDRs). The CDR record the following information (see Appendix 3 for a copy of the CDR):
    - fishing zone
    - catch
    - location and depth fished
    - number of traps pulled
    - landing location
    - processor of the catch
    - interaction with TEP species
    - bycatch
    - other information
- Daily voluntary log books which concentrate on recording the breeding state of females and numbers of octopus. A copy of the log book page is provided at Appendix 4.

Recreational fishers provide information via voluntary log books and annual phone surveys.

A detailed description of the data fishers provide and how it is used for research and management is provided in The *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401.

There is no evidence of systematic non-compliance with fisheries rules either in the commercial, recreational or customary sectors.

3.2.4 Research Plan

Component	PI Category	PI	SG60	SG80	SG100
Fishery- specific management system	**Research plan 3.2.4**	The fishery has a research plan that addresses the information needs of management.	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are available to interested parties.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are disseminated to all interested parties in a timely fashion.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.

WRLF Management Information – 3.2.4 Research Plan

Figure 5 provides an overview of the research plan development process for the WRLF. At the heart of the development process is the use of independent experts and stakeholders to identify issues and recommend and develop research projects to provide information regarding them. The plan is developed in three parts by scientists, managers and stakeholders who are involved across all areas:

- stock status (MSC Principle 1),
- ecology (MSC Principle 2 – minimising environmental impacts) and
- governance, policy, compliance, social issues (MSC Principle 3).

There are four main ways that issues that require the development of research projects are identified:

- Ecological risk assessments (ERA).
- Monitoring that identifies issues that arise in the fishery, e.g. extremely low levels of puerulus settlements and low levels of breeding stock in some areas. These can be issues identified by stakeholders or researchers.
- Results of other research, management or compliance projects or investigations.
- Expert workshops and peer reviews of aspects of research and management.

Once an issue or risk specific to the WRLF has been identified, an expert group, workshop, or review is established to review the available information and make recommendations regarding what research should be undertaken and in many instances to help develop an appropriate research framework.

Broad issues that are not WRLF specific, particularly in the area of ecology (e.g. impact of climate change, oceanography, urban/industrial developments, etc) are coordinated through the Western Australian Marine Science Institution, which is the umbrella organisation for all the tertiary institutions, Federal and State Government departments and corporations that have an interest in marine science in WA.[41]

[41] See the WAMSI website for details Hhttp://www.wamsi.org.au/H

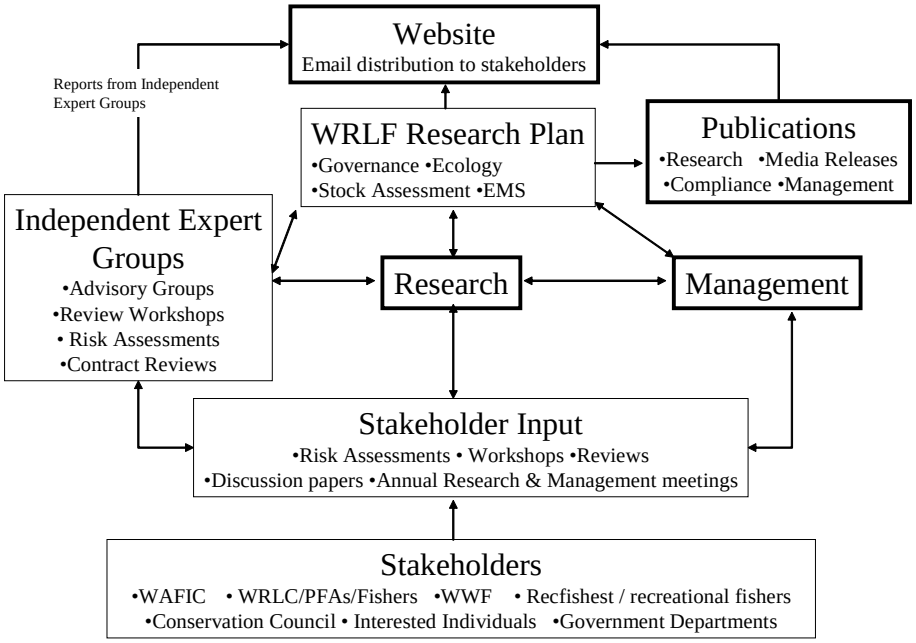

Figure 5 Overview of the development of the Research Plan for the WRLF (produced by Jason How).

The research plans and the development process for MSC Principle 1 – Stock Status, Principle 2 – Minimising Environmental Impact and Principle 3 – Effective Management are described below.

Research Plan – Principle 1 Stock Status

Research on the stock status of the WRL has been ongoing since the early 1900s. However, it was not until the mid 1940s that a rigorous scientific approach was taken. Between the 1950s and the mid 1990s the Western Fisheries Research Committee comprising representatives of the Department of Fisheries, academic institutions and CSIRO oversaw the development of research projects for all fisheries in WA, including WRL. After the mid 1990s through to the early/mid 2000s, expert groups for specific fisheries were formed to review and guide research planning. Since the early/mid 2000s WRL research planning has been driven by risk assessments and expert workshops and reviews that have either identified issues or have responded to issues that have been identified by monitoring or other research activities.

The Department has had a dedicated WRL stock assessment group undertaking stock status research since the late 1960s. This group is responsible for collecting and analysing all the fishery information that is required for stock assessments and a full description of the data sets and how they are used can be found in the *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401

The research that has been undertaken on stock assessment and modelling of the WRLF since the mid 2000s have been influenced by ERAs conducted in 2001, 2005, 2007 and 2009[42] and

[42] See ERA reports for 2001 (Hhttp://www.fish.wa.gov.au/docs/op/op063/index.php?0706H), 2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and

expert stock assessments and modelling workshops / reviews that were undertaken in 2007 and 2010[43] (and will take place in April 2011). Stakeholders are invited to all ERAs, specialist workshops, peer reviews and annual management and research meetings and their input is also sought through public discussion papers.

The DoF core research projects on stock status are provided in Appendix 5 (see summary table under 1. *Retained Species Stock Analysis*).[44] A list of the externally funded projects and recent initiatives that also deal with WRL stock status are provided in Table 3 below.

Table 3 – List of the current research projects and recent new initiatives that are being undertaken in collaboration with DoF on aspects of WRL stock status. These projects are externally funded and DoF is the lead organisation, except where the collaborator is shown in bold.

Project Title	Project Dates	Collaborators	Funding Source	Instigated By
Identifying factors affecting the low western rock lobster puerulus settlement in recent years.	Jul 2009 – Jul 2012	CSIRO	FRDC	Low Puerulus Risk Assessment Workshop (A)
Evaluating source-sink relationships of the Western Rock Lobster Fishery using oceanographic modelling.	2009-10	CSIRO	FRDC	Low Puerulus Risk Assessment Workshop (A)
Evaluating the use of novel statistical techniques for determining harvest rates and efficiency increases in the Western Rock Lobster Fishery.	Jul 2010 – Dec 2011l	Prof Norm Hall A Prof Stewart Frusher Prof John Hoenig	FRDC	Low Puerulus Risk Assessment Workshop (A)
Evaluation of population genetic structure in the western rock lobster	Jul 2009 – Jul 2011	**University of WA**	FRDC	Low Puerulus Risk Assessment Workshop (A)
Assessing possible environmental causes behind the reduced colonization of puerulus collectors by a wide	Dec 2008 – Apr 2010	University of WA	FRDC	Low Puerulus Risk Assessment Workshop (A)

2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H) and the 2009 *Low Puerulus Risk Assessment Workshop* at Hhttp://www.fish.wa.gov.au/docs/op/op071/index.php?0706H

[43] See the workshop reports at *WRL Stock Assessment and Harvest Strategy Workshop 16-20 July 2007* Hhttp://www.fish.wa.gov.au/docs/op/op050/index.php?0706H and the *WRL International Stock Assessment and Modeling Workshop* May 2010 at Hhttp://www.fish.wa.gov.au/docs/op/op081/index.php?0706H

[44] Copied from Department of Fisheries' annual *Research, Monitoring, Assessment and Development Plan 2010-2011*. The full plan, which covers all fisheries in WA, can be found at Hhttp://www.fish.wa.gov.au/docs/op/op088/index.php?0706H

suite of species.				
Biological Oceanography of the Western Rock Lobster	2010-12	**University of WA** **Murdoch University** **CSIRO** **University of Auckland**	FRDC	Low Puerulus Risk Assessment Workshop (A)
Management implications of climate change effect on fisheries in Western Australia. WRL will be one of the main focuses.(B)	2011 - 2014	CSIRO WAMSI	FRDC	DoF, CSIRO WAMSI. Flow on from Low puerulus workshop.

(A) See *Low Puerulus Risk Assessment Workshop* http://www.fish.wa.gov.au/docs/op/op071/index.php?0706

(B) This project is part of the National Climate Change Adaptation Plan: Marine Biodiversity and Resources, details of which can be found at: http://www.frdc.com.au/Default.aspx?PageID=2476227&A=SearchResult&SearchID=1194242&ObjectID=2476227&ObjectType=1

Examples of Principle 1 research plan development

Stock Assessment and modelling – A review of the 2005/06 stock assessment was undertaken by Prof Norm Hall in 2006, which lead to the first international peer review workshop of the WRLF's stock assessment and modelling in 2007. This workshop identified a number of issues with the stock assessment and modelling and made a series of recommendations to improve them.[45] A further review was undertaken in 2010, which looked at the progress made since the 2007 review. It identified some additional issues and made a number of recommendations to improve the stock assessment, model outputs and harvest strategy. For example:

- Reduce the dimensionality of the model.
- Estimate more parameters within the assessment and use as many data sources as possible.
- Efficiency increases and the influence of environmental factors on catchability were considered in the 2010 stock assessment, but it is recommended that estimation of parameters using these data be incorporated directly within the assessment to ensure consistency of assumptions and to fully account for the uncertainty associated with those data.
- Decision rules for the fishery need to be modified to reflect the State Government's decision to move from an input to an output-based management system. In particular, these rules need to include a target reference point associated with the proposed Maximum Economic Yield (MEY) objective and should specify an explicit management response sufficient to achieve management objectives within a reasonable time frame.
- A number of other prioritized technical recommendations were made by the Panel. In summary, these relate to validating and refining the new ITQ model developed during the workshop, developing a comprehensive set of diagnostics and sensitivity runs that should accompany the results of the base case assessment in future stock assessments, refinement

[45] See *WRL Stock Assessment and Harvest Strategy Workshop 16-20 July 2007* at Hhttp://www.fish.wa.gov.au/docs/op/op050/index.php?0706H

of the decision rules to allow for the introduction of ITQs and an MEY objective, and the development of a Management Strategy Evaluation framework to ensure that management strategies and assessments are likely to be robust under alternative hypotheses relating to, inter alia, the decline in puerulus settlement.
- A Resource Assessment Group should be established to facilitate ongoing development and testing of the stock assessment.

A report of the 2010 workshop with a full list of the recommendations can be found at: http://www.fish.wa.gov.au/docs/op/op081/index.php?0706 and the most up to date stock assessment and description of the model can be found in the *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401. All the recommendations of the 2010 workshop have been or are in the process of being implemented.

The recommendations made by the expert and peer reviews cited above have formed the research plan that has guided the development of model based stock assessment research for the WRLF since 2006.

A desk review by Prof Punt (one of the authors of the 2010 report) will be undertaken in April 2011 to further review the stock assessment, model outputs and the implementation of the recommendations from the 2010 workshop.

Low puerulus settlement – In 2008 monitoring identified the first of three very low puerulus settlements in the fishery and a Low Puerulus Risk Assessment Workshop was held in April 2009[46] to assess the situation and make recommendations regarding research and management. The workshop's independent expert risk assessment panel identified and ranked possible causes of the low puerulus settlements and recommended a number of research projects be initiated / supported to investigate the possible reasons. Five research projects were initially funded, some of which have become longer term projects (see Table 3). A summary of each project's objectives can be found in *Draft Stock Assessment for the West Coast Rock Lobster Fishery* at: http://www.fish.wa.gov.au/docs/frr/frr217/index.php?0401. These projects form the research plan to investigate the possible causes of the low puerulus settlements that have occurred. They focus on possible environmental and oceanographic factors, stock genetic factors and fishery effects to do with harvest rates and increases in fishing efficiency.

An expert workshop will be held on the 24 May 2011 to review the results of the projects and their future direction and a large cross section of stakeholder representatives will be invited to attend (e.g. WAFIC, WRLC, Recfishwest, WWF, Conservation Council of WA, processors, academic institutes and Government Departments)

Research Plan – Principle 2 Minimising Environmental Impacts

The impetus for undertaking ecological research on the possible impact of rock lobster fishing commenced with the first ERA undertaken on fishery in 2001 and was further refined at the 2005 ERA and reviewed at the 2007 ERA. The ERAs provided the forum for identifying the ecological risks associated with WRL fishing and recommending mitigation or research to be undertaken. The most important areas that required research were the fishery's possible effect on:

[46] A report of the workshop can be found at Hhttp://www.fish.wa.gov.au/docs/op/op071/index.php?0706H

- ecology, due the removal of large numbers of legal size lobsters (particularly in deepwater),
- habitat impacts, particularly on coral, and
- TEP species, sea lions (in particular), whales and turtles.

The *Western Rock Lobster Ecology – State of Knowledge* document at http://www.fish.wa.gov.au/docs/op/op089/index.php?0706 provides a complete overview and summary of all the research pertaining to Principle 2 for the WRLF, particularly those areas identified by the ERA process. This document can be considered the research plan for Principle 2 issues. Appendix 5 also provides a summary table (under *2 Habitat and Ecosystem*) of DoF's WRL research projects to do with the ecosystem effects of fishing, which has been copied from the Department of Fisheries' annual *Research, Monitoring, Assessment and Development Plan 2010-2011*.[47]

Broad issues that are not WRLF specific, particularly in the area of ecology (e.g. impact of climate change, oceanography, urban / industrial developments, etc), are coordinated through the Western Australian Marine Science Institution, which is the umbrella organisation for all the tertiary institutions, Federal and State Government departments and corporations that have an interest in marine science in WA.[48] Research undertaken by WAMSI that has a bearing on Principle 2 performance indicators is discussed in *The Western Rock Lobster Ecology – State of Knowledge* document (see link above).

Two of the key issues for the WRLF under Principle 2 were the possible ecological impact of removing large numbers of legal size lobsters from the deepwater ecosystem and the fisheries impact on TEP species, therefore they have been used below as examples of the research plan development process for Principle 2.

Examples of Principle 2 research plan development

Ecological Effects of Fishing –In the 2001, 2005 and 2007 ERAs[49] the ecological effects of fishing, i.e. the large scale removal of legal size lobster from the population, was considered to be a moderate risk for deepwater populations where large (legal size) lobsters are in the majority. The ERAs recommended that research be undertaken to determine if the removals were having an impact on the rock lobster's ecology. To facilitate this, RLIAC established an independent expert group, the Ecological Scientific Reference Group (Eco SRG) in 2003, to advise on the issue and help develop a research plan. The development of the research plan can be traced through the reports of the Eco SRG (now the Effects of Fishing Advisory Group) meeting and workshop reports and Research Plans:

- 2003 inaugural meeting as reported in the *WRL Environmental Management Strategy 2002 – 2006* at http://www.fish.wa.gov.au/docs/op/op017/index.php
- 2004 and 2005 at: http://www.fish.wa.gov.au/docs/op/op029/index.php?0706

[47] The full *Research, Monitoring, Assessment and Development Plan 2010-201,* which covers all fisheries in WA, can be found at Hhttp://www.fish.wa.gov.au/docs/op/op088/index.php?0706H
[48] See the WAMSI website for details Hhttp://www.wamsi.org.au/H
[49] See the Ecological Risk Assessments that were conducted in:
2001 (Hhttp://www.fish.wa.gov.au/docs/op/op063/index.php?0706H),
2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and
2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H).

- 2005 as reported on pages 34-42 under Risk 5 – Impact of the Fishery on the Ecosystem in the *WRL Environmental Management Strategy 2002 – 2006* at http://www.fish.wa.gov.au/docs/op/op017/index.php
- 2006 the *WRL Effects of Fishing Research Plan* at: http://www.fish.wa.gov.au/docs/op/op039/index.php?0706
- 2007 *Western Rock Lobster Ecological Effects of Fishing Workshop Report 8 – 10 August 2007*at: http://www.fish.wa.gov.au/docs/op/op053/index.php?0706
- 2008 *WRL Effects of Fishing Research Plan* at: http://www.fish.wa.gov.au/docs/op/op072/index.php?0706
- 2010 Effects of Fishing Advisory Group meeting and review of the research plan at: http://www.fish.wa.gov.au/docs/op/op091/index.php?0706

An initial research project using gradients in abundance to try and determine possible effects of lobster removal from deepwater was carried between 2004 and 2007.[50] The project found that it was not possible to determine any impact using gradients in abundance, however it provided important baseline data for any future project. A second project was then developed by the Eco SRG in 2007 (see report of workshop cited above) to compare rock lobster ecology in fished and unfished areas in deep water.

RLIAC and its committees were disbanded in 2010 in an overhaul of Ministerial Advisory Committee system, therefore a new group, the Effects of Fishing Advisory Group (EFAG), was established to take over the advisory role of the Eco SRG. In 2010 EFAG reviewed the second project and the Eco SRG's research plan (see 2010 report cited above). A research closure has been implemented in the centre of the fishery near Jurien Bay as part of the second project.

The research plan (projects) to investigate the effects of fishing in deepwater are summarised in Appendix 6 and set out in more detail in *The Western Rock Lobster Ecology – State of Knowledge* document at: http://www.fish.wa.gov.au/docs/op/op089/index.php?0706 . The document also provides an overview of associated ecological projects conducted by third parties (e.g. Western Australian Marine Science Institution, CSIRO and local universities) that provide information to meet the WRLF's MSC Principle 2 performance indicators.

Sea Lions at the Abrolhos Islands – The ERA process[51] identified that sea lion populations could be at risk due to interactions with rock lobster traps / pots. DoF and RLIAC established the Sea Lion Scientific Reference Group (SLSRG) to provide advice on the issue and to make recommendations regarding research[52] (see as summary in the *WRL Environmental Management Strategy 2002 – 2006* at http://www.fish.wa.gov.au/docs/op/op017/index.php under Risk 1 commencing on page 14). A research project designed by the SLSRG was developed and implemented, which showed that a small number of sea lion pups from the Midwest Coast breeding colonies were at risk of drowning in rock lobster traps. Pups at the other breeding colony on the west coast, at the Abrolhos Is, did not appear to interact with traps. A precautionary approach was taken to mitigate this risk by making it mandatory that sea lion

[50] The results of the project are reported at: Hhttp://www.fish.wa.gov.au/docs/frr/frr199/index.php?0401H
[51] See the ERAs for 2005 (Hhttp://www.fish.wa.gov.au/docs/op/op025/index.php?0706H) and 2007 (Hhttp://www.fish.wa.gov.au/docs/op/op056/index.php?0706H).
[52] See the SLSRG reports of 2005 at Hhttp://www.fish.wa.gov.au/docs/op/op016/index.php?0706H , Hhttp://www.fish.wa.gov.au/docs/op/op028/index.php?0706H and the WRLF *EMS*, Occasional Publication No. 95, at Hhttp://www.fish.wa.gov.au/docs/op/op017/index.phpH

exclusion devices (SLEDs) be fitted to all traps fished in the coastal risk zone (i.e. around the sea lion breeding colonies) as of November 2006.[53]

On the advice of the SLSRG, ongoing research continued to be conducted on the sea lion population at the Abrolhos Is and in late 2008 a report of pup interactions with research traps was reported. A meeting of the SLSRG was convened in October 2009[54] to review and discuss the results of the research and it recommended that SLEDs be introduced into the area of risk at the Abrolhos. On 15 March 2011, after discussions with the fishing industry and interested stakeholders, a precautionary approach was taken by making SLEDs mandatory for the risk areas around the Abrolhos Is sea lion breeding colonies. At sea compliance on the use of SLEDs ensures the efficacy of this mitigation measure.

Research Plan – Principle 3 Effective Management

The current and past research projects that relate to Principle 3 Effective Management are listed in summary table in Appendix 5 (under *3. Management Analysis*).[55]. Principle 3 research projects are generated mainly from DoF internal reviews and risk assessments, although external reviews and risks assessments can also play an important role (e.g. RLIAC, Commonwealth National Competition Policy and WA Regulatory Gate Keeping Unit reviews). The projects cover:

- socio-economic aspects of the fishery,
- resource access and sharing,
- compliance and enforcement evaluation, and
- management system reviews (input vs output controls).

For a list of past projects that relate to Principle 3 see the section *3.2.5 Monitoring and management performance evaluation* below. Past projects include:

- reviews of the management system,
- reviews of the harvest strategy,
- reviews of the legislation and compliance system,
- initiatives regarding WRL resource sharing, and
- a review of the potential for WRL aquaculture.

The description of research plan development provided above for Principle 1, 2 and 3 issues shows that the system of research planning for the WRLF is both responsive, rigorous and transparent, in that independent experts and stakeholders are invited to the ERAs to identify issues that need research and they are also invited to the expert workshops / reviews that recommend and develop research projects on various aspects of the fishery. The research plan / projects that have been developed using this system have provided the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC Principles 1 and 2.

Research results are disseminated to all interested parties in a timely fashion and are made widely and publicly available via direct e-mail and on the DoF website.

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[53] See State of the Fisheries 2006/07 at Hhttp://www.fish.wa.gov.au/docs/sof/2006/index.php?0706H p19.
[54] The report of the meeting was sent to interested stakeholders, but was not initially placed on the DoF website. It now forms part of the WRLF EMS which is published as Fisheries Occasional Publications No. 95 on the DoF website at Hhttp://www.fish.wa.gov.au/docs/op/index.php?0706H
[55] The WRL section has been copied from the Department of Fisheries' annual *Research, Monitoring, Assessment and Development Plan 2010-2011* at: Hhttp://www.fish.wa.gov.au/docs/op/op088/index.php?0706H

3.2.5 Monitoring and management performance evaluation

Component	PI Category	PI	SG60	SG80	SG100
Fishery- specific management system	**Monitoring and management performance evaluation 3.2.5**	There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system.	The fishery has in place mechanisms to evaluate some parts of the management system and is subject to occasional internal review.	The fishery has in place mechanisms to evaluate key parts of the management system and is subject to regular internal and occasional external review.	The fishery has in place mechanisms to evaluate all parts of the management system and is subject to regular internal and external review.

WRLF Management Information – 3.2.5 Monitoring and management performance evaluation

The WRLF has in place mechanisms to evaluate key parts of the management system, which are subject to regular internal and external review. This occurs by way of the following:

- **Strategic Planning and Risk Assessments**
    - Internal DoF strategic management planning meeting for WRL held biannually.
    - Internal DoF strategic research planning meeting held on a regular basis (usually annually).
    - Internal DoF compliance risk assessment for WRL held annually prior to the commencement of the fishing season.
    - External expert based risk assessments on all aspects of the WRL fishery are undertaken on a regular basis (i.e. at least every five years). Full ERAs were conducted in 2001, 2005 and 2007. The next full ERA is due in 2012. The ERAs are discussed under 3.2.2 and 3.2.4, which also provide links to reports and supporting documentation.
    - External risk assessments on important specific issues that arise in the fishery from time to time, e.g. low puerulus settlement risk assessment in 2009. See 3.2.2 and 3.2.4 for further details and links to reports and supporting documentation.

- **Review workshops and Scientific Reference Groups**
    - *Stock Status* – External expert reviews are undertaken on a regular basis. They took place in 2007, 2010 and will occur again in April 2011. These reviews have been discussed in detail under 3.2.2 and 3.2.4, which also provide links to reports and supporting documentation.
    - *Effects of Fishing* – An external expert Effects of Fishing Advisory Group (previously the Ecological Effects of Fishing Scientific Reference Group) was established to investigate the possible ecological impact of large scale removal of legal size lobsters. This reference group has been discussed in detail under 3.2.2 and 3.2.4, which also provide links to reports and supporting documentation.
    - *Interaction with TEP species* – The Sea Lion Scientific Reference Group was established to investigate the issue of the fishery's interaction with sea lions. This reference group has been discussed in detail under 3.2.2 and 3.2.4, which also provide links to reports and supporting documentation.

Reviews of the Management System

A number of detailed reviews of various aspects of the WRL management system have taken place over time and some of the major ones are set out as examples below. The reviews involved extensive stakeholder consultation.

Long term management strategies and reviews of the WRLF management system.
In particularly input (fishing effort) control versus output (quota) management systems for the WRLF were undertaken in:

1994

- Long term management strategies for the Western Rock Lobster Fishery - Evaluation of management options, Vol 1 at http://www.fish.wa.gov.au/docs/mp/mp067/index.php?0706
- Long term management strategies for the Western Rock Lobster Industry - Economic efficiency of alternative input and output based management systems in the western rock lobster fishery, Vol 2 at http://www.fish.wa.gov.au/docs/mp/mp068/index.php?0706
- Long term management strategies for the Western Rock Lobster fishery - based economic assessment for the western rock lobster industry, Vol 3 at http://www.fish.wa.gov.au/docs/mp/mp069/index.php?0706
- Long term management strategies for the Western Rock Lobster fishery - Law enforcement considerations, Vol 4 at http://www.fish.wa.gov.au/docs/mp/mp070/index.php?0706

1998

- Western Rock Lobster Management - Options and Issues at http://www.fish.wa.gov.au/docs/mp/mp113/index.php?0706
- Future Directions for Rock Lobster Industry Advisory Committee and the Western Rock lobster Managed Fishery at http://www.fish.wa.gov.au/docs/mp/mp123/index.php?0706

2000

Information on Quota Management of Rock Lobster Fisheries in South Australia, Tasmania and New Zealand at http://www.fish.wa.gov.au/docs/mp/mp138/index.php?0706

2005

- Assessment of Western Rock Lobster Strategic Management Options - Vol 1 An overview of Bio-Economic, Sociological and Comparative Analyses at http://www.fish.wa.gov.au/docs/mp/mp209/index.php?0706
- Assessment of Western Rock Lobster Strategic Management Options, Vol 2 A Bio-Economic Evaluation of Management Options for the West Coast Rock Lobster Fishery at http://www.fish.wa.gov.au/docs/mp/mp210/index.php?0706
- Assessment of Western Rock Lobster Strategic Management Options, Vol 3 A Social Assessment of Coastal Communities Hosting the Western Rock Lobster Fishing Fleet at http://www.fish.wa.gov.au/docs/mp/mp211/index.php?0706
- Assessment of Western Rock Lobster Strategic Management Options, Vol 4 How do Quota Management Systems Work in Rock Lobster Fisheries? at http://www.fish.wa.gov.au/docs/mp/mp212/index.php?0706

2009

- A Quota Management System for the Western Rock Lobster Fishery - An independent report commissioned by the Rock Lobster Industry Advisory Committee (RLIAC) at http://www.fish.wa.gov.au/docs/op/op068/index.php?0706
- An Input Control Management System for the Western Rock Lobster Fishery - An independent report commissioned by the Rock Lobster Industry Advisory Committee (RLIAC) at http://www.fish.wa.gov.au/docs/op/op069/index.php?0706

The WRLF moved from an input control to a quota management system in 2010.

A Review of the WRLF Harvest Strategy and Decision Rules

2004

A discussion paper titled the *Development of a Fisheries Management Decision Rules Framework for the West Coast Rock Lobster Fishery* was released in January 2004.[56]

2010

A public discussion paper on the harvest strategy and decision rules for the WRLF, based on input controls, was released in 2010 (see Western Rock Lobster Fishery – Harvest Strategy and Decision Rules Proposals at http://www.fish.wa.gov.au/docs/mp/mp239/index.php?0706). The paper is currently being redrafted to reflect the fishery's moved to a quota management system and it is due to be released for public comment in mid 2011.

Integrated Fisheries Management – WRL Resource Sharing

Reviews of the WRL resource sharing arrangements, i.e. between commercial, recreational and customary have been undertaken in:

2002

- Report to the Minister for Agriculture, Forestry and Fisheries by the Integrated Fisheries Management Review Committee at http://www.fish.wa.gov.au/docs/mp/mp165/index.php?0706
- Processes for the Allocation, Reallocation and Governance of Resource Access in connection with a Framework for the Future Management of Fisheries in Western Australia at http://www.fish.wa.gov.au/docs/mp/mr007/index.php?0706

2003

Aboriginal Fishing Strategy: "Recognising the past, fishing for the future" at http://www.fish.wa.gov.au/docs/mp/mp168/index.php?0706

2005

- Integrated Fisheries Management Report Rock Lobster Resource at http://www.fish.wa.gov.au/docs/mp/mp192/index.php?0706
- Integrated Fisheries Management - Draft Allocation Report - Western Rock Lobster Resource - A discussion paper prepared by the Integrated Fisheries Allocation Advisory Committee for public comment at http://www.fish.wa.gov.au/docs/mp/mp200/index.php?0706
- Submission sought for sharing the western rock lobster resource at http://www.fish.wa.gov.au/docs/media/index.php?0000&mr=285

2006

Integrated Fisheries Management - Allocation Report - Western Rock Lobster Resource at http://www.fish.wa.gov.au/docs/mp/mp218/index.php?0706

2010

- Considerations for the Implementation of Western Rock Lobster Sectoral Allocations at http://www.fish.wa.gov.au/docs/mp/mp236/index.php?0706
- Potential reallocation mechanisms for the transfer and/or adjustment of catch shares between sectors with application to the Western and South Australian rock lobster fisheries, at http://www.fish.wa.gov.au/docs/mp/mp238/index.php?0706

Reviews of the Potential for WRL Aquaculture

1998

[56] Tim Bray (2004). *Development of a Fisheries Management Decision Rules Framework for the West Coast Rock Lobster Fishery* on behalf of the Rock Lobster Industry Advisory Committee. Department of Fisheries publication.

Opportunities for Holding/Fattening/Processing & Aquaculture of Western Rock Lobster at http://www.fish.wa.gov.au/docs/mp/mp122/index.php?0706

2006

A Scoping Paper: Matters Relevant to the Development of a Sustainable Allocation and Growout Model for Western Rock Lobster Pueruli at http://www.fish.wa.gov.au/docs/mp/mp219/index.php?0706

Legislation and Compliance System Reviews

There have been a number of reviews of the legislative framework (Act and regulations) under which the WRLF operates and on the effectiveness of compliance / enforcement.

Legislation

2006 – Proposed Amendments to the *Fish Resources Management Act 1994* - A Discussion Paper at http://www.fish.wa.gov.au/docs/mp/mp208/index.php?0706

2010 – A Sea Change for Aquatic Sustainability – Meeting the Challenge of Fish Resource and Aquatic Sustainability in the 21st Century. http://www.fish.wa.gov.au/docs/op/op079/index.php?0706

2011 – Western Rock Lobster Management Plan Review

A task group comprising major stakeholders (e.g. DoF, WAFIC and WRLC) are currently reviewing and rewriting the WRLF management plan to ensure it provides a robust and flexible platform for the new quota management system. The new plan is due to be implemented prior to the 2011/12 WRL season.

Compliance

2006 Compliance Program Evaluation and Optimisation in Commercial and Recreational Western Australian Fisheries. Final report to Fisheries Research and Development Corporation on Project No. 2001/069 at http://www.fish.wa.gov.au/docs/frr/frr195/index.php?0401

Annually Ethical compliance issues (including misconduct) are reviewed and reported annually by the Department of Fisheries. The results are reported in the Annual Report (e.g. see *Annual Report 2009-10* page 119 at http://www.fish.wa.gov.au/docs/ar/index.php?0706).

Other Reviews

Policy for Ecologically Sustainable Development of Fisheries

2002 Policy for the Implementation of Ecologically Sustainable Development for Fisheries and Aquaculture Within WA at http://www.fish.wa.gov.au/docs/mp/mp157/index.php?0706

Resource Access Entitlements

Use of market mechanisms for the allocation of commercial fishing access entitlements in Western Australia at http://www.fish.wa.gov.au/docs/mp/mr002/index.php?0706 1998

Impact of Occupational Safety and Health Legislation on Fisheries Management

at http://www.fish.wa.gov.au/docs/mp/mr001/index.php?0706 1997

Stakeholder and Community satisfaction with the Department of Fisheries

The Department undertakes regular surveys of stakeholder and community satisfaction with the Department's fisheries management processes. The results are reported in the Annual Report (e.g. see *Annual Report 2009-10* page 115 at http://www.fish.wa.gov.au/docs/ar/index.php?0706)

Department of Fisheries Key Performance Indicators
The Department reviews its performance annually against its key performance indicators and publishes the results in Annual Report (e.g. see *Annual Report 2009-10* page 103 at http://www.fish.wa.gov.au/docs/ar/index.php?0706)

Other Forms of Oversight and Review
Other forms of oversight have been listed under 3.1.1. They include the State Administrative Tribunal and the Department of the Auditor General. Reviews of aspects of the fishery have also been initiated by RLIAC (up to 2010) and reviews of the impact of legislation have been initiated by Commonwealth National Competition Policy and the WA Regulatory Gate Keeping Unit.

APPENDIX 1 DETAILS OF THE ECOLOGICALLY SUSTAINABLE DEVELOPMENT PROCESS

First Step - Identifying the Issues

The first step in the ESD reporting process is to identify what are the issues relevant to the fishery being assessed. This step is equivalent to the 'hazard identification' process used in most risk assessment procedures.

Identifying the issues for a fishery is assisted through the use and modification of a set of "*generic component trees*" (see Figure A for an example). There is one *generic component tree* for each of the eight components of ESD (retained species, non-retained species, general ecosystem, indigenous, community and national wellbeing, impacts of the environment and governance). These generic component trees are used as a starting point, with each fishery tailoring them to suit their individual circumstances, expanding some sub-components and collapsing or removing others, depending upon the fishing methods, areas of operation and the species involved.

For example, the generic component tree for "*general ecosystem issues*" shown below covers all the major categories of possible effects on the biological community, and on air, water and substrate quality by fisheries.

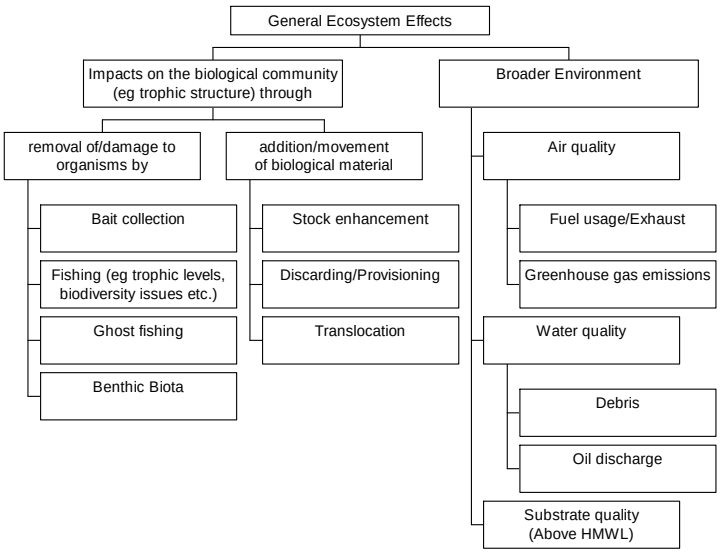

Figure A. One of the eight generic component tree (see Fletcher et al., 2002 for full details).

Second Step – Prioritisation Using Risk Assessment tools

The generation of component trees for a fishery often results in a large number of issues being identified, the importance of which varies greatly. For example in reporting on a lobster fishery, there will almost certainly be a different level of direct management and reporting needed to ameliorate the impacts of the fishery on the stocks of lobster compared to the impacts the fishery may have on manta rays from entanglement in ropes.

Consequently, in many cases it will be sensible to prioritise the issues so that the level of management actions and the details of the reports generated are aligned.

To determine the priority of issues and the appropriate level of response, the second step outlined in the *Guide* is the Risk Assessment methodology used to assist this process. This methodology operates by completing an assessment of the 'risk' associated with each of the identified issues. The Risk Analysis tool used in this ESD process is based upon the AS/NZ Standard, but adapted for use within the fisheries context. It works by assigning a level of consequence – what level of impact - from negligible (eg no measurable change) to catastrophic (eg extinction of the species) and the likelihood of this consequence occurring (from remote to likely) for each issue.

From the combination of consequence and likelihood, an overall level of *risk* is generated (from negligible to severe). This *risk* can then be used to assist in deciding whether an issue requires specific management or not.

To be of value for the ESD reporting process, it is not sufficient to only quote the levels of consequence and likelihood levels chosen and the subsequent risk ratings generated. Instead, appropriately detailed justifications for why these levels were chosen and why any decisions were made are also needed. The key element is that other parties who were not part of the process to generate the report need to be able to see the logic and assumptions behind the decisions that were made.

Consequently, the completion of appropriately detailed performance reports on each of the identified issues, including any justifications generated during the risk assessment process, are the major outputs from the ESD reporting process.

Third Step - Performance Reports

In general, two types of reports are completed on issues.

1) Where specific management is not undertaken, the reports only need to justify this conclusion.
2) Where specific management actions are needed, a full performance report that details all elements of the management system is required.

For issues with risk ratings sufficiently low to not warrant having *specific* management actions, the reports only need to cover the rationale for coming to this decision. In some cases, only a few lines or paragraphs may be needed to achieve this.

If an issue does require specific management actions then the performance reports should use the following as a guide:

Performance Report Heading	***Description***
1. Rationale for Inclusion	*Why is this considered an issue?*
2. Operational Objective (plus justification)	*What outcome are your trying to achieve and wh*
3. Indicator	*What are you going to use to measure performar*
4. Performance Measure/Limit plus (justification)	*What levels define acceptable and unaccept performance and why?*
5. Data Requirements/Availability	*What monitoring programs are needed?*
6. Evaluation	*What is the current performance of the fishery fo this issue?*

7. Robustness	*How robust is the indicator & or the performanc measure in assessing performance against the objective?*
8. Fisheries Management Response	
- Current	*What are the management actions currently bein used to achieve acceptable performance?*
- Future	*What extra management is to be introduced?*
- Actions if Performance Limit is exceeded	*What will happen if the indicator suggests performance is not acceptable?*
9. Comments and Action	*Summarise what actions will happen in the comi years*
10. External Drivers	*What factors, outside of the fisheries agency con may affect performance against the objective?*

Fourth Step - Background Material

The provision of back ground material allows the other sections of the report to be put in context: This material is also needed to complete the Risk Assessment process.

The material covered should include:

- the history of the fishery.
- where the fishery operates.
- the kind of fishing methods used.
- the major species, habitats and environment that could be affected.
- summaries of the biological characteristics of the main species and habitats involved.

Given that these descriptions in the *Guide* are detailed, while the description here is an overview of the whole process for those require a general understanding of the process. For those who will be taking part in this ESD reporting process, it is recommended that the full documentation is obtained and referenced.

The first two steps of the ESD reporting framework can be categorised more broadly as *Ecological Risk Assessment* (ERA) and the third step is broadly categorised as representing the *Environmental Management Strategy* (EMS) for the fishery. Step 4 is applicable to both the ERA and EMS phases of ESD reporting. Chapters 2, 3 and 4 in this series contain the current ERA and EMS respectively for the Western Rock Lobster Fishery.

It is a requirement that the ERA and EMS documents be reviewed annually so as to: update risk ranking as a result of changed circumstances, increased knowledge or effect of management. Alternately the review may confirm the existing risk ranking. This annual assessment is used to determine if the adopted management strategies are on track to achieve the stated management and operational objectives broadly designed to mitigate the identified risk. Where a strategy is not on track the annual review is used as the basis for an adaptive management approach to correct the strategy based on new information. The ESD Steering Committee and scientific reference or advisory Group's undertake the annual review process.

Similarly "out of session" reviews of the ERA and EMS status entirely or on certain aspects can be triggered in response to new information, changed circumstances or the identification of a new risk. At the very least such reviews would be undertaken by the Department of Fisheries in liaison with the ESD Steering Committee and SRG's and if possible (or necessary) via the formal meeting of the ESD Steering Committee and SRG's.

The full ESD reporting process occurs every five years and will result in the production of a new ERA and a new EMS.

APPENDIX 2 – SUMMARY OF CONSULTATIONS IN 2010

A summary of research and management consultations that took place with western rock lobster fishery stakeholders during 2010 and two important consultations undertaken in 2009.

Western Rock Lobster Fishery Consultation		
Type of consultation (committee, working group, meeting, seminar, workshop, discussion paper, etc) and its purpose / objectives	**Stakeholders Invited**	**Date**
2009		
Public discussion paper on the WRLF Proposed Harvest Strategy and Decision Rules **Purpose** To get stakeholder comment on the prop harvest strategy and decision rules for the WRLF **Documentation** The discussion paper is available at: http://www.fish.wa.gov.au/docs/mp/mp239/index.php?0706	All stakeholders	March-April 2009
Low puerulus settlement risk assessment workshop. **Purpose:** • To assess the causes of the recent low puerulus settlements • To assess the impact of the recent low puerulus settlements • To recommend mitigation measures • To recommend future research **Documentation** Report of workshop available at: http://www.fish.wa.gov.au/docs/op/op071/index.php?0706	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF, CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan Uni.	1-2 April 2009
2010 RESEARCH CONSULTATIONS		
International Stock assessment and modeling review workshop **Main Objectives** • Review the stock assessment model and make any recommendations that would improve its robustness. • Review the 2009 stock assessment. • Review the current understanding and measurement of the rock lobster breeding	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF, CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan Uni.	20-24 May 2010

stock. • Review the proposed Harvest Strategy and Decision Rules. • Assess the progress made to meet the conditions set by the MSC's auditors. **Documentation** Report of workshop available at: http://www.fish.wa.gov.au/docs/op/op081/index.php?0706		
Rock Lobster Industry Advisory Committee (RLIAC) **Main Objectives** • Review current stock assessment • Provide ministerial advice on catch limits for 2010/11 fishing season.	RLIAC, WRLC	4 June 2010
Current Stock Assessment and future decision rules **Main Objectives** • Disseminate current stock assessment to the WRLC • Discuss future Harvest Strategy directions	WRLC	16 June 2010
WRLC coastal tour Geraldton **Main Objectives** • Disseminate current stock assessment of the fishery • Impacts of climate change (DoF, CSIRO) • Changes in Migratory behaviour • Larval (phyllosoma) monitoring (UWA, CSIRO, DoF)	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF, CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan Uni.	1 November 2010
WRLC coastal tour Perth **Main Objectives** • Disseminate current stock assessment of the fishery • Impacts of climate change (DoF, CSIRO) • Changes in Migratory behaviour • Larval (phyllosoma) monitoring (UWA, CSIRO, DoF)	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF, CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan Uni.	5 November 2010
Effects of Fishing Advisory Group meeting **Main objectives** • To review results available on the ecological effects of rock lobster fishing from research undertaken in shallow and deep water on the WA coast.	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF,	2-3 November 2010

• To review the research plan for the DoF project on the ecological effects of rock lobster fishing in deepwater (i.e. the large scale removal of legal size lobsters) that is comparing fished and unfished areas.	CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan Uni.	
2010 MANAGEMENT CONSULTATIONS		
Changes to the Management Arrangements for the West Coast Rock Lobster Fishery - Letter to License Holders and Processors **Purpose:** Provide an update to stakeholders about the current closure in Zone B • Zone B will continue to be closed through to 24 January • Management arrangement will be reviewed by RLIAC for Zone B and C in January	WAFIC, RLIAC, All Stakeholders and Processors	6 January 2010
Outcomes from a meeting held by RLIAC to provide advice to the Minister - Changes to the Management Arrangements for the West Coast Rock Lobster Fishery - Letter to License Holders and Processors **Purpose:** To inform stakeholders of the Ministers decision • Changes to Zone A and B with regards to catch limits, including re-opening zone B on the 25 January, Zone A and B fisher can continue to fish until the first half of the season catch limit is reached, Zone A fisher will commence fishing in the Abrolhos Islands on the 15 March. • Changes to Zone C with regards to catch limits, including a prohibition in Zone C between 16 January and 31 January and from the 12 March until the 11 April as Zone C fisher exceeded there target catch by five tones • When Zone C commences on the 1 February, fishers are prohibited form fishing on Fridays and the catch is decremented against the target for the second half of the season • During the closure pots must be removed from the water.	RLIAC, All Stakeholders and Processors	13 January 2010
Outcomes from a meeting between the Minister, Rock Lobster Processors, WRLC and WAFIC with regards to changes to Management Arrangements for Zone C of the West Coast Rock Lobster Managed Fishery – Letters to Licensee's and Processors **Purpose:** To inform stakeholders • Changes to management arrangements to the remaining Zone C catch, they	WRLC, WAFIC, All Stakeholders and Processors	21 January 2010

include re-opening the Zone C on the 25 January, prohibit fishing in Zone C between the 12 March and the 21 March and a reduced unit value.		
Changes to the Management Arrangements for the West Coast Rock Lobster Fishery - Letter to License Holders and Processors **Purpose:** Provide an update to stakeholders about changes to the Management Plan from previous correspondence • Prohibit Zone A fishers from fishing in Zone B from 12 February • Prohibit fishing in Zone B from the 12 March to 11 April • Prohibit fishing in Zone C from the 12 March to 21 March • Reduce the capacity of Zone C from the 21 March by decreasing the unit value • Provide for the transportation of unrigged pots to the Abrolhos Islands during the closure period.	All Stakeholders and Processors	9 February 2010
Changes to the Management Arrangements for zone B for the West Coast Rock Lobster Fishery - Letter to License Holders and Processors **Purpose:** Provide an update to stakeholders about changes to the Management Plan from previous correspondence (13 January 2010) • Zone B fishers will be allowed to fish on Fridays up to and including the 12 March.	WAFIC, WRLC, RLIAC, All Stakeholders and Processors	16 February 2010
Rock Lobster e-newsletter – emailed to WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors were email addresses are known and posted on the Website **Purpose:** To provide stakeholders and industry with an update of information regarding rock lobster • Current puerulus settlement • Current catch trends • High "white" catches • Marine Stewardship Council Certification audit • Quota System	WRLC, WAFIC, Professional Fisherman's Associations, All Stakeholders and Processors	March 2010

• Licence Entitlement System (unit register) • Small Business Development Corporation grant **Documentation** Report of workshop available at: http://www.fish.wa.gov.au/docs/pub/WCRockLobsterNewsletter/index.php?0206		
Letter from Department of Fisheries to West Coat Rock Lobster Fishery Licence holders **Purpose:** To announce the Minister's in principle support for implementing quota from the 2010/11 season	West Coast Rock Lobster Managed fishery Licence holders and WAFIC	7 April 2010Q
Introduction of a Quota Management System (QMS) and Management Arrangements for the 2010-11 Season – Letter from the Minister **Purpose:** Acknowledge the advise and reports received from WAFIC, Recfishwest and RLIAC about the implementation of QMS. • Introduction of a QMS from the 2010-11 season • Department of Fisheries (Department) and the WA Fishing Industry Council (WAFIC) to work together to develop operational details of the quota system	WAFIC, RLIAC and Recfishwest	April 2010
Rock Lobster e-newsletter – emailed to WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors were email addresses are known and posted on the Website **Purpose:** To provide stakeholders and industry with an update of information regarding rock lobster • Total allowable commercial catch allocation • Current puerulus settlement • Quota Implementation Project Team • Season Ends • Proposed steps and timelines for closing Zone C **Documentation** The newsletter is available at: http://www.fish.wa.gov.au/docs/pub/WCRockLobsterNewsletter/index.php?0206	WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors	April 2010
Changes to Management Arrangements for the West Coast Rock Lobster Managed Fishery – Closure of Zone C and Zone A update – Letter to Licensees	All Stakeholders and Processors	4 May 2010

Purpose: Update stakeholders • Inform Licensees that zone C will be closed on the 10 May, as the target catch for the second half of the season has been reached • Catch information from processors show that Zone A is just under there lower catch limit		
Proposed Closure of Zone A West Coast Rock Lobster Managed Fishery –Letter to Licensees **Purpose:** To inform stakeholders • Inform Licensees that zone A is close to its target catch limit, possibly by early next week, further correspondence will be sent.	All Stakeholders and Processors	7 May 2010
Meeting convened in Hillarys by WRLC with industry regarding possible management arrangements for the 2010/11 season	West Coast Rock Lobster Licence holders and relevant Department staff	7 May 2010
Meeting convened in Geraldton by WRLC with industry regarding possible management arrangements for the 2010/11 season	West Coast Rock Lobster Licence holders and relevant Department staff	8 May 2010
Meeting with western rock lobster processors convened by Department to discuss 2010/11 management arrangements	Western rock lobster processors	10 May 2010
Changes to Management Arrangements for the West Coast Rock Lobster Managed Fishery – Closure of Zone A – Letter to Licensees **Purpose:** To inform stakeholders • Inform Licensees that zone A will be closed on the 17 May, as the target catch for that zone has been reached	All Stakeholders and Processors	11 May 2010
International Stock assessment and modeling review workshop **Main Objectives:** • Review the stock assessment model and make any recommendations that would improve its robustness. • Review the 2009 stock assessment.	WRLF representatives (WRLC, fishers, processors), Refishwest, Conservation Council of WA, WWF, CSIRO, Uni WA, Murdoch Uni, Curtin Uni, Edith Cowan	20-24 May 2010

• Review the current understanding and measurement of the rock lobster breeding stock. • Review the proposed Harvest Strategy and Decision Rules. • Assess the progress made to meet the conditions set by the MSC's auditors. **Documentation** Report of workshop available at: http://www.fish.wa.gov.au/docs/op/op081/index.php?0706	Uni.	
Paper consulting on management arrangements for the 2010/11 season provided to WAFIC and RLIAC	WAFIC and RLIAC	28 May 2010
Letter from the Department to Recfishwest **Purpose:** To advise Recfishwest on the proposed 2010/11 quota model and provide the opportunity for this organization to comment	Recfishwest	2 June 2010
RLIAC meeting which included consideration of 2010/11 season management arrangements	RLIAC	4 June 2010
Changes to Management Arrangements for the West Coast Rock Lobster Managed Fishery – Closure of Zone B – Letter to Licensees **Purpose:** To inform stakeholders • Inform Licensees that zone B will be closed on the 14 June, as the target catch for that zone has been reached	All Stakeholders and Processors	8 June 2010
Workshop in Geraldton convened by the United Mid-West Professional Fishermen's Association regarding quota model for the 2010/11 season	A and B Zone West Coast Rock Lobster Fishery licensees and relevant Department staff	16 June 2010
Management Arrangements for the 2010/11 Western Rock Lobster Fishery Season - Letter to Licensees **Purpose:** To inform stakeholders • Catch limit quota system will be implemented for the 2010/11 season • 5,500 tonne TACC will be allocated to the Fishery • Individual catch limits to be allocated to each licence, by zone • Unit value, number of pots each licensee can use • Transfer of units between licensees • Fishing Season commencement dates and licensing period	All Stakeholders and Processors	7 July 2010

• Abolish the 20 Fathom line • Weekend closure will be in place • Detail of the compliance and monitoring for the 2010/11 season.		
Progress towards implementation of 2010/11 West Coast Rock Lobster Fishery Management arrangements and consultation on some proposed compliance and monitoring process changes **Purpose:** Consultation on proposed compliance and monitoring process changes • Progress towards implementing the 2010/11 season management arrangements • Compliance and monitoring arrangements – including the Integrated Voice Response System (IVR)	WAFIC	28 September 2010
Rock Lobster e-newsletter – emailed to WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors were email addresses are known and posted on the Website **Purpose:** To provide stakeholders and industry with an update of information regarding rock lobster • Current puerulus settlement • Individual Catch Limits- Fisher Awareness sessions • Update on new consultation arrangements • Marine Stewardship Council and Re-Assessment **Documentation** The newsletter is available at: http://www.fish.wa.gov.au/docs/pub/WCRockLobsterNewsletter/index.php?0206	WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors	October 2010
Going to Quota – Workshop (Hosted by WAFIC, WRLC and the Department) **Purpose:** To provide stakeholders and industry with an update of information regarding rock lobster and the move to Quota • Season arrangements under a quota system	WAFIC, WRLC, All Stakeholders and Processors	4 October 2010
Going to Quota – Workshop (Hosted by WAFIC, WRLC and the Department) **Purpose:** To provide stakeholders and industry with an update of information regarding rock lobster and the move to Quota • Season arrangements under a quota system	WAFIC, WRLC, All Stakeholders and Processors	5 October 2010

Closed Area for the Western Rock Lobster Fishery for Research **Purpose:** Requesting the views from WAFIC on the closed area in the Western Rock Lobster Fishery for Research • Marine Stewardship Council – condition 2.1.1.4 • Acknowledge the lengthy negotiations between WRLC, RLIAC and SAG	WAFIC	20 October 2010
Implementation of the Sea Lion Exclusion Devices at the Abrolhos Islands –Letter to WAFIC and Recfishwest **Purpose:** Requesting the position of WAFIC and Recfishwest on the implementation of SLED's in the Abrolhos Islands • History of consultation with regards to SLED's • RLIAC's position • Marine Stewardship Council reaccreditations - implementation of SLED's in the Abrolhos Islands.	WAFIC and Recfishwest	3 November 2010
Pre-season fishery briefings **Purpose:** To educate licensees and Masters of boats regarding their obligations under the new catch limits system.	All West Coast Rock Lobster Managed Fishery Licence holders and Masters of boats authorized in the fishery	Mid-October to Mid-November
Catch Monitoring System Guide for Fishers and Registered Receivers - emailed to WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors were email addresses are known and posted on the Website **Purpose:** To provide stakeholders with information about how to fill in the CDR book. **Documentation** The document is available at: http://www.fish.wa.gov.au/docs/pub/WCRockLobsterQuota/index.php?0206	WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors	9 November 2010
Rock Lobster Frequently Asked Questions (FAQ)– emailed to WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors were email addresses are known and posted on the Website **Purpose:** To provide stakeholders with information about FAQ with regards to filling in the CDR book and the new Quota system. **Documentation** The document is available at: http://www.fish.wa.gov.au/docs/pub/WCRockLobsterQuota/index.php?0206	WRLC, WAFIC, Professional Fisherman's Association, All Stakeholders and Processors	10 November 2010

Inaugural meeting of the Quota Implementation Reference Committee **Purpose:** Committee formed and chaired by WAFIC to allow industry and the Department to work together to resolve operational issues associated with the new catch limits management arrangements.	Quota Implementation Reference Committee members (WAFIC industry representatives and Department staff). Professional Fishermen's Associations provided with the opportunity to raise issues with the committee	2 December 2010
Meeting between Department and a small group of Abrolhos Islands fishers **Purpose:** To discuss and "ground truth" operational requirements for implementation of the catch limits system at the Abrolhos Islands	Small group of Abrolhos Islands fishers and relevant Department staff	21 December 2010

Government of Western Australia
Department of Fisheries

WEST COAST ROCK LOBSTER FISHERY

007426

PART 1A PRE FISHING NOMINATION (CALL IVR NUMBER)

Master to complete before moving the boat to commence fishing, after calling the IVR number.

Pre Fishing Confirmation Number: | Date of call: / /

PART 1B DETAILS OF FISHING TRIP

This section need only be completed once per landing, prior to completing part 1C.

Zone fished (circle one):	A B C
Main block number (refer to map):	
Depth range of pots (fathoms):	to
Total number of pots pulled:	
Pull period in days (eg 1 or 2):	
Crew Numbers Onboard (inc master):	

Did you interact with a protected species (circle one): Yes No

If Yes, list Details Below:	No Alive	No Dead

Retained Species (other than Western Rock Lobster)	Number	Weight (kg)
Octopus (Headed Wt)		
Southern Rock Lobster		

You must supply number and approximate weight in kilograms of each species

PART 1C PRE LANDING NOMINATION (CALL IVR NUMBER)

Master must phone IVR and complete this section prior to entering a landing area

Pre landing Confirmation No: | Landing Area No: | Date: / /

No of Containers (must be tagged & secured): | OR No of Lobsters on board:

All lobsters must be in tagged, secured containers before any lobsters are removed from the boat.

PART 1D POST LANDING NOMINATION (DECLARATION OF CATCH) CALL IVR NUMBER AFTER WEIGHING LAST CONSIGNMENT*

The Master must complete this section, immediately upon weighing each consignment.

MFL Number:
Master's CFL Number:
Master's Full Name (Please Print):

Consignment of for this trip. Transporting own catch (circle one): Yes No

No of Containers	Gross Weight	Net Weight
	. kg	. kg

Time weighed (24Hr): : Date weighed: / /

Personal Consumption (circle one): Yes No

If Yes, full name of crew member receiving lobsters (please print):

Residential address where lobsters will be delivered:

Tag numbers for this consignment (e.g. from AM0001 to AM0010):

All CDR Numbers related to this landing –
From: to
Receiver No:
Receiver Name:

Upon weighing the last consignment of this landing, the Master must call the IVR number and obtain a Post Landing Confirmation number

*Post Landing Confirmation No:

PART 1E MASTER'S DECLARATION

I declare that the information I have given is true and correct.

Boat LFB: | Boat Name: | Master's Contact Phone Number:

Master's signature: | Date of Declaration: / /

NOTE: It is a major offence to make false or misleading statements, or to fail to fully complete this form. When completed, the top **(WHITE)** form must immediately be sent to: **Catch Monitoring Section,** Department of Fisheries, Locked Bag 43, Cloisters Square WA 6850. The second **(YELLOW)** form is to be kept in the book. The third **(GREEN)** form must be provided by the **MASTER** to the **RECEIVER**. When completed the third **(GREEN)** form must immediately be sent by the **RECEIVER** to: **Catch Monitoring Section,** Department of Fisheries, Locked Bag 43, Cloisters Square WA 6850.

APPENDIX 4 – WRLF Voluntary Research Log Book Form

ROCK LOBSTER RESEARCH INFORMATION

Boat Number*	LFB	Name of skipper	

* Please record prefix, eg. G, D, F etc.

Month	Year	number of berried females above Min size. (if none = 0)	Number of setose females above Min size. (if none = 0)	Number of not setose females above Max size. 95/105mm (if none = 0)	Total number of dead rock lobsters (if none = 0)	Est. number of undersize (if none = 0)	Est. number of high graded lobsters (if none = 0)	Type of baits used	
								Type of pots	
Day	CDR							Comments	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

APPENDIX 5 WRLF RESEARCH PROJECTS
Copied from the Department of Fisheries' annual *Research, Monitoring, Assessment and Development Plan 2010-11* (see http://www.fish.wa.gov.au/docs/op/op088/index.php?0706)

Research, Monitoring, Assessment and Development Plan 2010-11

West Coast – Western Rock Lobster

Description and Scope of Issues

Commercial: The West Coast Rock Lobster Managed Fishery (WCRLF) targets the western rock lobster, *Panulirus cygnus*, on the west coast of Western Australia between Shark Bay and Cape Leeuwin, using baited traps (pots). With an annual production that averages about 11,000 t, this is Australia's most valuable single-species fishery.

Recreational: The recreational rock lobster fishery primarily targets western rock lobsters in the Perth metropolitan area and Geraldton, using baited pots and by diving.

Relevant Resource Assets and Risks from Fishery

West Coast Shelf Crustaceans (Lobsters)	Moderate Risk
West Coast Nearshore Molluscs (Octopus)	Moderate Risk
West Coast Protected Species (Sea lions)	Low Risk
West Coast Nearshore Habitats	Low Risk
West Coast Ecosystem (Marine)	Low – Moderate Risk

Summary of historical research completed

Research activities into the western rock lobster have been underway for decades with a large amount of research having already been completed. This research covers lobster biology, ecology, stock assessment and the examination of fleet and fishery dynamics. A comprehensive listing of all these projects is contained in the Draft Stock Assessment Document (http://www.fish.wa.gov.au/docs/frr/frr180/index.php?0401).

Current Research Focus

Focus - Research activities focus on the core business of assessing stock sustainability and the forecasting of future catch levels. Most recently the focus of research has been to try and explain the series of low puerulus settlements that have occurred during the past 4 years.

Activities - The main activities still involve undertaking fishery-independent monitoring of breeding stock levels and puerulus settlement. Industry performance is monitored through compulsory catch and effort records from both fishers and processors and comprehensive data from the voluntary logbook scheme, all of which are used for modelling and stock assessment.

A risk assessment workshop to examine the low puerulus settlement was held in April 2009. The workshop focused on examining the 'likelihood' of factors that could have caused the decline in puerulus settlement. The workshop concluded that the decline in settlement could have been caused by changes in environmental conditions and productivity in the eastern Indian Ocean, or a decline in the abundance of the rock lobster breeding stock, particularly in the northern region of the fishery, or a combination of these two factors. A report on this workshop can be found on the Departments website (http://www.fish.wa.gov.au/docs/op/op071/fop71.pdfT).

The five projects listed below were submitted to the Fisheries Research and Development Corporation (FRDC) and were successful in securing funding. The objectives of the projects are to investigate various aspects of the possible causes and factors associated with the low puerulus settlements of 2007-08 and 2008-09.

Project 1 (FRDC 2009/018) Identifying factors affecting the low western rock lobster puerulus settlement in recent years.

Project 2 (FRDC 2008/087) Evaluating source-sink relationships of the Western Rock Lobster Fishery using oceanographic modelling.

Project 3 (FRDC 2009) Evaluating the use of novel statistical techniques for determining harvest rates and efficiency increases in the Western Rock Lobster Fishery.

Project 4 (FRDC 2009) Evaluation of population genetic structure in the western rock lobster.

Project 5 (FRDC 2008) Assessing possible environmental causes behind the reduced colonization of puerulus collectors by a wide suite of species.

An FRDC funded project to examine the effects of western rock lobster fishing on the deep-water ecosystem off the west coast of Western Australia has recently been completed. This project provided critical baseline data on the relationships between the abundance and size distributions of rock lobster and the different benthic habitats located in deeper waters, plus preliminary data on diets and the trophic role of rock lobster within these depths. Further ecological research in deep waters will be based on comparing fished and unfished areas using research closures. This research is supported by the WAMSI and a new FRDC project that started in 2009. The aims of this project include negotiating a suitable closed area in deep water to assess the ecological impacts of fishing, developing cost effective methods to monitor benthic communities in deep water and the collection of baseline information on lobster stocks, habitats and community structure to facilitate comparisons between fished and unfished areas. The ultimate outputs of this project will enable any impacts of lobster fishing on deepwater ecosystems to be quantified.

Other projects examining lobster populations between fished and unfished zones is ongoing at Rottnest Island and in the Marmion Marine Park. These projects consists of annual sampling using pots and underwater dive surveys at Armstrong Bay and Parker Point sanctuary zones. Results from the first three years after the no-take regions were implemented have shown a rapid increase in lobster numbers within the protected areas. This study also aims to provide additional information on growth, natural mortality and size/sex-specific catchability.

For the recreational component of this fishery, an annual mail-based survey of participants has been used to estimate the annual catch and effort for the past 20 years. These trends,

together with data on puerulus settlement, are used to predict the recreational catch and effort in following seasons. Since 2000/01, telephone diary surveys of recreational rock lobster fishers have been undertaken in most years. Estimates of recreational catch using this method are compared to the estimates from mail surveys. Phone diary surveys are considered to be more accurate than those from mail surveys because they eliminate the recall bias in the mail surveys and additionally, there is a higher participation rate in the survey from random sample selection. Sample sizes for the phone diary surveys have been increased since the 2006/07 survey to improve the accuracy of the result.

Research has commenced that aims to identify those parameters derived from mail surveys that are to be adjusted to lead to a catch estimate that is comparable to the diary survey estimates. Thus, mail survey effort estimates may be altered in the future. The comparison between effort levels from one season to the next season should, however, not be affected.

Priority Setting Process

Commercial: Until recently this was undertaken though the Rock Lobster Industry Advisory Committee (RLIAC) and subcommittees; annual RLIAC coastal tour. This will now occur through meetings between the Department of Fisheries and industry facilitated by WAFIC/Western Rock Lobster Council.

Recreational: Until recently this was undertaken by the Recreational Fishing Advisory Committee, a new process that will be facilitated by RecFishWest is in the process of being developed.

Review Timeline

A stock assessment workshop took place from 20 – 24 May 2010. The objectives of the workshop were motivated by the audit conditions set by the Marine Stewardship Council's auditors for the Western Rock Lobster Fishery (WRLF), as well as the need for regular review of the 2010 stock assessment. The workshop considered the structure of the current model to be appropriate, however its complexity could be simplified. The workshop also advised that more data sources and parameters should be incorporated within the model to improve its estimates of precision. A major outcome of the workshop was the development of an ITQ version of the model that also incorporated many of the suggested changes made by the reviewers. This model is currently being tested with the aim of it forming the basis of future models. A report on this workshop will be released for public comment in 2010. The next MSC surveillance visit will be in November 2010.

Recent Publications:

Caputi, N., de Lestang, S., Feng, M. & Pearce. A. (2009). Seasonal variation in the long-term warming trend in water temperature off the Western Australian coast. *Marine and Freshwater Research*. 60: 129-139.

Caputi, N., Melville-Smith, R., de Lestang, S., Pearce, P. & Feng, M. (2009). The effect of climate change on the western rock lobster (*Panulirus cygnus*) fishery of Western Australia. *Canadian Journal of Fish and Aquatic Sciences*. in press

de Lestang, S., Caputi, N. & Melville-Smith (2009). Using fine-scale catch predictions to examine spatial variation in growth and catchability of *Panulirus cygnus* along the west

coast of Australia. *New Zealand Journal of marine and Freshwater Research*. 43: 443-455.

Melville-Smith, R., de Lestang, S. & Thomson, A.W. (2009). Spatial and temporal changes in egg production in the western rock lobster (*Panulirus cygnus*) fishery. *New Zealand Journal of marine and Freshwater Research*. 43: 151-161.

Melville-Smith, R., de Lestang, S., Beale, N.E., Groth, D. and Thompson, A. (2009). Investigating reproductive biology issues relevant to managing the western rock lobster broodstock. Final Report to Fisheries Research and Development Corporation project 2003/005: 114 pp

Key to symbols in the matrix/summary tables:

■ Indicates that the activity is funded and planned to occur.

O Indicates that the activity is part of a proposal but is not yet funded.

West Coast Western Rock Lobster Fishery Research Projects	*Research Status*	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*2014/15*	*Comments*
1. Retained Species Stock Analysis							
1.1 Basic Biology of indicator species (Growth, Reproduction, Diet, Natural mortality)	Ongoing	■	■	■	■	■	Still some work required
1.2 Other Biology							
Recruitment Dynamics	Underway	■	■				Investigating 2008/09 recruitment failure
Migration	Underway	■	■				
Lobster spawning rates	Underway	■					
By-product Octopus basic biology	Underway						The basic life history studied / recruitment
1.3 Stock Assessment	Ongoing	■	■	■	■		
Annual Assessment	Ongoing	■	■	■	■	■	
Develop New Model	Underway	■	■				New model being developed
Shallow Water Depletion Assess.	Underway	■	■				
Deep Water Depletion Assessment	Underway	■	■				Initial trials underway
Change in Ratio and Index Removal	Proposed	■	■				Funded by the FRDC
1.4 Fishery Monitoring	Ongoing	■	■	■	■	■	
Commercial Catch & Effort	Ongoing	■	■	■	■	■	
Processor Returns	Ongoing	■	■	■	■	■	
Commercial Monitoring	Ongoing	■	■	■	■	■	
Puerulus Monitoring	Ongoing	■	■	■	■	■	
Research Logbooks	Ongoing	■	■	■	■	■	
Spawning Stock Survey	Ongoing	■	■	■	■	■	

West Coast Western Rock Lobster Fishery Research Projects	*Research Status*	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*2014/15*	*Comments*
Fishing Power	Ongoing	■	■	■	■	■	
Recreational Catch and Effort	Ongoing	■	■	■	■	■	
Stock & recruitment	Ongoing	■	■	■	■	■	
Meshed Pot monitoring	Ongoing	■	■	■	■	■	
2. Habitat & Ecosystem							
2.1 Bycatch	Ongoing	■	■	■	■	■	Monitoring
2.2 Listed Species	Ongoing	■	■	■	■	■	Monitoring of all interactions
Sea Lion Interactions and behaviour	Completed						Pot design to stop juvenile sea lions entering pots has been developed and implemented
2.3 Habitat	Ongoing	■	■	■	■	■	
Seagrass and Limestone reef effects	Completed						Sufficient for management
Coral Reef effects	Underway	■	■				Study at the Abrolhos Islands – annual monitoring of potential damage to coral
Habitat Mapping	Underway	■	■				FRDC proposal to use cameras as a method of obtaining habitat data now funded
Habitat - recruitment relationships	Proposal		O	O			FRDC proposal to understand relationship between habitat and puerulus recruitment requirements
2.4 Ecosystem/Environment	Ongoing	■	■	■	■	■	
Deep water ecosystem study	Underway	■	■	■			Closed area monitoring
Jurien Bay inshore	Completed						SRFME/WAMSI study
Dongara inshore	Completed						CSIRO studies in the 1980s
Rottnest and Metro Sanctuary zones	Underway	■	■	■	■	■	Comparing fished *vs*. unfished (DoF and ECU)
2.5 Oceanography	Underway	■	■				
Leeuwin Current monitoring	Ongoing	■	■	■			
Oceanographic Modelling	Underway	■	■				FRDC funded
Impacts of ocean conditions on catch rates	Underway	■	■				
2.6 Other impacts on fishery							Nothing identified
3. Management Analysis							
3.1 Socio-economic							
Bio-Economic modelling	Underway	■	■				CRC funding obtained
Economic Analysis (MEY)	Underway	■					Examination of Maximum Economic Yield
3.2 Resource Access (Shares)							
Determination of access shares	Periodic		■				Needed for IFM / ITQ
Monitoring of shares	Ongoing	■	■	■	■		Needed for IFM ITQ
3.3 Compliance							
Enforcement efficiency	Underway	■	■				
3.4 Management Systems							
Input vs output controls	Completed						Industry moving to Quota In 2010/11

West Coast Western Rock Lobster Fishery Research Projects	*Research Status*	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*2014/15*	*Comments*
4. Industry Development							
4.1 Production Technology							
Puerulus growout	First Stage Completed						Awaiting outcomes of policy on ownership of puerulus
More Efficient Lobster Pot Design		■					CRC project
4.2 Post Harvest							
4.3 Marketing							Completed by Industry
5. Priority Review							
WRLC/WAFIC		■	■				Annual review of R&D plan
6 Science Review							
Stock Assessment	Ongoing		■	■	■	■	Last completed in detail in 2010
MSC audits	Ongoing	■	■	■			Yearly audits

APPENDIX 6 – WRL RESEARCH ON THE EFFECTS OF FISHING

Summary table of current and planned research on effects of fishing for western rock lobster on the ecosystem, MSC Principle 2.
Letters in column marked conceptual model correspond to bold type letters on the conceptual model which has been copied below the table.

Project Title	Lead Agency	Funding Source	Study Location	Objectives / Project Description	Status	Conceptual Model
Assessing the ecological impact of the Western Rock Lobster fishery in fished and unfished areas	DoF	FRDC	Jurien (30° line)	1. Identification and assessment of suitable unfished reference areas to exclude rock lobster fishing in deep-water 2. Development of a qualitative trophodynamic model that will provide a conceptual framework for determining sampling protocols, indictors and targets. 3. To provide cost effective methods to measure deep-water ecosystems in both fished and unfished reference areas	Funded 2010/2012	A, B, C, E, F
Trophic interactions and ecological modelling for EBFM	DoF and ECU	WAMSI 4.2	Jurien (deep-water) + Metro region (shallow-water)	1. Improve understanding of the possible indirect impacts of fishing or other affects on trophic interactions (e.g. removal of keystone species) 2. To determine the main processes leading to changes in trophic interactions 3. To design experiments to examine the potential impact of fishing on benthic habitats, community structure or biodiversity	Funded 2009/2011	B, E, F
Indicative Development Plan, including baseline habitat and human use maps, to guide future development within the Houtman Abrolhos Islands	DoF	State NRM	Abrolhos Islands	Map the shallow-water benthic habitats of the Abrolhos Islands using remote sensing techniques and field based ground truthing.	Funded 2010/2011	A

Abrolhos Islands long-term monitoring	DoF	Internal	Abrolhos Islands	Long-term monitoring of benthic habitats using a series of permanent transects. Transects are surveyed annually and the percentage cover of benthic habitats are recorded using diver operated stereo video	2006-ongoing	A, D
Spatio – temporal variability in assemblages of mobile invertebrates colonizing artificial habitats along the coastline of Western Australia	DoF/UWA	FRDC	Various coastal locations	Monitoring community composition of marine flora and fauna colonizing puerulus collectors along the Western Australian coastline Determine the influence of environmental parameters on the floral and faunal communities colonizing puerulus collectors	Funded 2010/2011	F
IMOS	National	National	WAIMOS (Jurien/Abrolhos/ Rottnest)	Monitoring benthic habitats using AUV	Funded	A, D
Catchability of Western Rock lobster ***(*Panulirus cygnus***); the influence of temperature, light intensity, habitat and commercial fishing apparatus	Murdoch	FRDC		To examine the effects of a number of factors on the catchability of lobsters	Funded, to be completed in 2012	F
Development of an industry-based habitat mapping/monitoring system	DoF	FRDC	Statewide	1. Development of a cost-effective digital monitoring system 2. Comparison of functionality and effectiveness with conventional habitat mapping methods 3. Trial use of system by industry and development of habitat maps	FRDC Full Proposal 2010/11	A, D, F
Understanding processes that affect recruitment of western rock lobster to the fishery over a latitudinal gradient	DoF/UWA	FRDC	Statewide	Determine the relationship between benthic habitat composition and the abundance and distribution of different life stages of the western rock lobster Develop a low cost monitoring program	Proposed FRDC EOI 2011/12. Some components currently being conducted by DoF	A, D, F

				for on going assessment of on benthic habitats and western rock lobster		
Identifying factors affecting the low western rock lobster puerulus settlement in recent years	DoF	FRDC	Statewide	1. To use a larval advection model and the rock lobster population dynamics model to assess the effect of spatial distribution of the breeding stock on the puerulus settlement 2. To assess environmental factors (water temperature, current, wind, productivity, eddies) and breeding stock affecting puerulus settlement 3. To examine climate change trends of key environmental parameters and their effect on the western rock lobster fishery	July 2009-June 2012	N/A
Management implications of climate change effect on fisheries in Western Australia	DoF	FRDC	Statewide	1. Assess future climate change effects on the Western Australia marine environments using a suite of IPCC model projections, downscaled to the key shelf regions and the spatial and temporal scales relevant for key fisheries 2. Examine the modelled shelf climate change scenarios on fisheries and implications of historic and future climate change effects 3. Review management arrangements to examine their robustness to possible effects of climate change	January 2011-December 2013	N/A
Development of a long-term program to monitor coastal communities within the Swan region	DoF	DoF	Rottnest Island	Provide a baseline of biological information for western rock lobster in the Swan Catchment Region Provide a cost-effective and efficient sampling protocol for the continued assessment and recording of these	2008-ongoing	E,F

				biological parameters into the future Produce a long-term time series as a robust indicator of relative "health" of the Swan Catchment into the future		

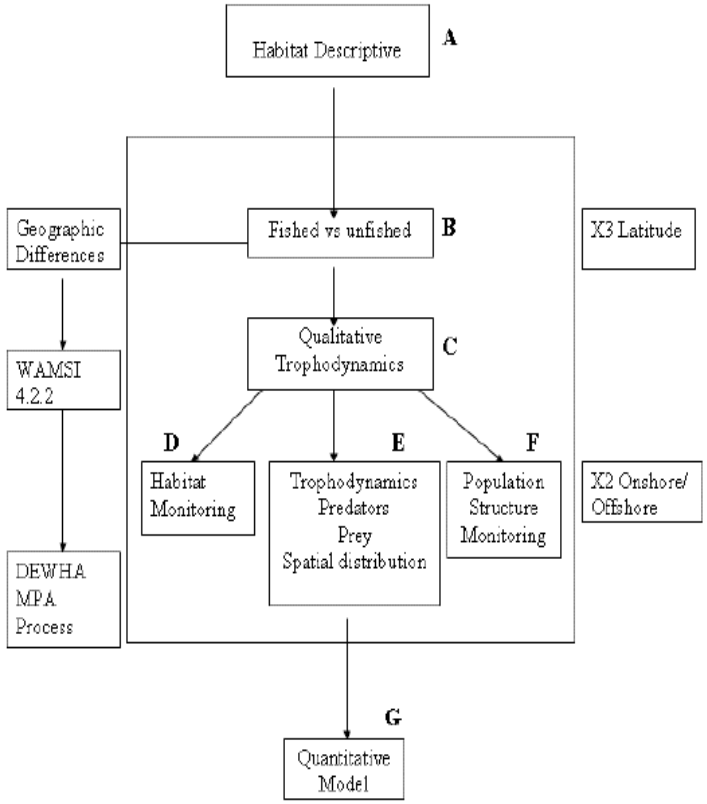

Figure 1. Effects of Fishing Advisory Group (EFAG) conceptual model for ecosystem research on western rock lobster. Bold letters correspond to current research projects listed in Table 8.