

MSC ASSESSMENT

The Western Australia Rock Lobster Fishery

Draft Report for Public Posting and Comment

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MSC TAB Directives (All)

MSC Chain of Custody Certification Methodology (CoC CM) Version 5.

Accredited Certification Body:

Scientific Certification Systems, Inc.

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| 4 | | Final Report after Public Comment Period |

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1 INTRODUCTION

The Marine Stewardship Council (MSC) is a non-profit organization dedicated to the long-term protection or “sustainability” of marine fisheries and related habitats. First started as a joint initiative between Unilever and the World Wildlife Fund (WWF), the MSC is now a fully independent organization that is governed by an independent Board of Directors advised by a panel of scientific, economic, and fishery experts.

The MSC’s original mission statement promoted responsible, environmentally appropriate, socially beneficial, and economically viable fisheries practices, as well as the maintenance of biodiversity, productivity and ecological processes of the marine environment. The current MSC mission statement (redrafted in 2001) provides a slightly more focused mission and reads,

“To safeguard the world’s seafood supply by promoting the best environmental choice”.

Dedicated to promoting “well-managed” or “sustainable” fisheries, the MSC initiative intends to identify such fisheries through means of independent third-party assessments and certification. Once certified, fisheries will be awarded the opportunity to utilize an MSC promoted eco-label to gain economic advantages in the marketplace. Through certification and eco-labelling, the MSC intends to promote and encourage better management of world fisheries, many of which have been suggested to suffer from poor management.

The Marine Stewardship Council developed standards for sustainable fisheries management in a three-step process (May, Leadbitter, Sutton, and Weber, 2003): 1) Assemble a group of experts in Bagshot (UK) to draft an initial set of Principles and Criteria; 2) Conduct an 18-month process to review the standard in 8 major international venues; and 3) Convene a second set of experts in Warrenton, Virginia (Airlie Conference Center, USA) to revise and finalize the MSC Principles and Criteria.

The final MSC Fisheries Certification standard was issued in 1998, and has since been used as the basis by which fisheries are evaluated under the MSC program. In contrast, the MSC Certification Methodology has evolved over the past six years as has the MSC Standard and Certification Methodology for Chain of Custody. The latest documents concerning these requirements, processes, and procedures were used in this assessment.

1.1 The Fishery Proposed for Assessment

The fishery evaluated in this report is:

| | |
|---------------------|--|
| Species: | <i>Panulirus cygnus</i> |
| Geographic Area: | Western Australia – from Bunbury (34°24'S) in the south to Shark Bay (24°44'S) in the north. |
| Fishing Method: | Pots |
| Fishery Management: | Western Australia Minister of Fisheries, Western Australia Department of Fisheries |

1.2 Key Issues for the Assessment

There were a few areas of significant note in this assessment that needed some additional attention. The ones worth mentioning, and that are discussed in greater detail in Section 8 - Assessment Team Performance Evaluation, are:

1. Improved ERA:

The MSC Principles and Criteria are the standard by which all fisheries are evaluated under the Marine Stewardship Council (MSC) program. Principle 2 under the MSC requires that the fishery management system fully understands, analyses, and reports on those aspects of the fishery that either potentially or actually cause effects to the ecosystem in which the fishery operates. The concern that surfaced during this assessment is the ability of the fishery management system to properly identify potential ecological effects from fishing. There appears to be no formal assessment of ecological or ecosystem impacts from fishing. In addition, in areas where there are known effects (bycatch of fish and seabirds) there appears to be a lack of verification processes (such as observer data as in other groundfish fisheries). Both these issues are dealt with in greater detail in the body of this report.

2. Improved Assessment of WRL Stock Status

2 THE WESTERN ROCK LOBSTER FISHERY

The descriptions provided here are for context, and do not constitute an evaluation of the fishery. Section 8 provides the assessment of the fishery.

2.1 Wester Rock Lobster

2.1.1 The Target Species

The Western Rock Lobster occurs off the western coast of Australia, with the postlarval stages inhabiting the continental shelf from 1 to 200 meters in depth. The highest densities occur in waters less than 60 m in depth (Kailola et al., 1993).

The species, *Panulirus cygnus*, is a spiny lobster with long antennae. The anterodorsal aspect of the carapace bears 2 distinct, smooth supraorbital spines and behind them are 2 rows of 4–8 smaller spines. Each abdominal segment has a transverse groove. The older juveniles and adult lobsters (except 'whites') assume a reddish-purple colour with each moult. The carapace is uniformly coloured without obvious spots and markings, although the abdomen is spotted dorsally and laterally. Each walking leg has a broad, pale longitudinal stripe on its dorsal surface.

2.1.2 Life History

The life cycle of the western rock lobster includes a long (~9 month) oceanic larval phase during which mortality is especially high during El Niño events. Hatching of eggs occurs in summer (mostly December-January) on the outer continental shelf. The larvae disperse up to 1500 km offshore spending the better part of the year in the south-eastern Indian Ocean. The larvae then return to the continental shelf from about July onwards and metamorphose into the final 'puerulus' larval stage which moves onshore and settles in shallow reefs in less than 30m of water (Kailola et al., 1993; Phillips and Pearce 1997). Juveniles remain on shallow coastal reefs for 3-6 years before recruiting to the fishery (Philips et al., 1991).

Adults mate between July and December and females carry the spermatophores until eggs are spawned between August and January. Depending upon the female's size, 100 000 to 1 million eggs are spawned. These eggs are carried on the underside of the female's abdomen until hatched, which may take up to 10 weeks depending on the water temperature.

The size at which lobsters reach sexual maturity has been assessed only for females and varies with location and growth rate. Generally females are sexually mature at approximately 5–6 years of age, when their carapace length measures 90–95 mm. The sex ratio is usually 1:1.

Growth rates vary considerably along the coast. In general, pueruli settle at approximately 8 mm carapace length. One year after settlement, juveniles are about 2.5 cm in carapace length. Studies have shown 3-year-old juvenile lobsters of 3.9–5.5 cm carapace length, 4-year-olds between 5.6 and 6.8 cm carapace length, and 5-year-old and older animals with a carapace length greater than 6.9 cm.

P. cygnus are omnivorous and feed at night. Their diet changes according to moult stage, season and habitat. Postmoult lobsters prefer epiphytic coralline algae (e.g. *Corallina* species, *Metagonolithon* species) and intermoult forms prefer molluscan items. Adults eat similar but larger food to that of juveniles — epiphytic coralline algae, molluscs, small crustaceans, polychaete worms and sipunculids.

Predators include, but are not limited to, reef fish, sharks and octopus (*Octopus* species).

2.2 The Western Rock Lobster Fishery

A report by the Western Australian Department of Fisheries, Fisheries Management Paper No. 203 – Western Rock Lobster Ecological Risk Assessment 2005, provides a thorough and accurate description of the Western Rock Lobster Fishery, including its size, economic value, legislative context and management. The following paragraphs in this section of the assessment report are taken directly from the Fisheries Management Paper No. 203 to provide the general background of the fishery as required by the MSC.

“The commercial fishery for western rock lobster is the most valuable single-species fishery in Australia (worth between \$A200 and \$A400 million annually)

and usually represents about twenty per cent of the total value of Australia's fisheries. This fishery also supports a significant recreational fishery with about 37,000 rock lobster licences issued in 2002/03 and around 80% of these licences used to catch 300-400 tonnes (approx. 4% of the total commercial and recreational catch). The licence entitles fishers to use two pots and/or dive for rock lobster and keep up to 8 lobsters per day. As one of the first managed fisheries in Western Australia, data have been kept on the western rock lobster fishery since the early 1900s. The rock lobster fishery was declared limited entry in March 1963 when licence and pot numbers were frozen. Since 1963, boat numbers have declined from 836 to 565 (January 2004). The commercial catch has varied between 8,000t and 14,500t over the last 20 years mostly due to natural fluctuations in annual recruitment. The settlement of puerulus (one year old lobsters) is used to predict reliably recruitment levels and therefore catches three to four years ahead.

The current management package employs several measures to pursue the legislative objectives – at the heart of which is resource sustainability. The rock lobster management package is widely recognised as meeting this objective, but the extent to which some other fisheries management objectives are pursued has been a matter of debate. An overall cap on effort, a Total Allowable Effort (TAE), is imposed by limiting the capacity of the fishery to a total number of usable pots. Relatively liberal transferability provisions allow market forces to determine the most efficient use of licences and available entitlement (pots). This system of management is known as an Individually Transferable Effort (ITE) system.

The fishery is divided into [three] access zones. This distributes 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. Zonal 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 form of zonal management known as “closed areas” has been used in a number of instances. Rottneest and Quobba Point are closed to commercial fishing, and there are 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 for Conservation and Land Management (CALM). Other management tools of note are those of a biological nature. Specifically, harvesting excludes females in breeding condition, and animals outside the limits of minimum and maximum carapace length. Gear restrictions that constrain the design and construction of the pots, including the requirement for escape gaps, also play a significant role in controlling exploitation rates.”

3 FISHERIES MANAGEMENT SYSTEM

Again, the report by the Western Australian Department of Fisheries, Fisheries Management Paper No. 203 – Western Rock Lobster Ecological Risk Assessment 2005, provides an accurate and recent description of the Western Rock Lobster Fishery Management System that is quoted in this section of the assessment report.

“The Government of Western Australia operates under the Westminster system in which 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:

- *Fish Resources Management Act 1994 (FRMA)*;
- *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 these acts can be accessed via www.fish.wa.gov.au. 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 an 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*. Under the FRMA, there is a division of power between the Minister for Fisheries and the statutory office of the Executive Director of the Department of Fisheries. In broad terms, the Minister for Fisheries establishes the legal and policy framework for fisheries management, while the Executive Director (and staff) carries out the day-to-day administration of these frameworks.

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. For the western rock lobster fishery resource the relevant advisory committee is the Rock Lobster Industry Advisory Committee (RLIAC). However, the Minister is not limited to seeking advice only from RLIAC and

can, for example, seek advice directly from stakeholders, the Department of Fisheries or Parliamentary colleagues.

RLIAC is one of three statutory advisory committees established under the FRMA. As a statutory committee the FRMA specifically and explicitly establishes RLIAC's composition (including the chairperson), functions, constitution and proceedings.

Section 29 of the FRMA specifies that there are 14 membership positions on RLIAC comprising of an independent chairperson, the Executive Director, commercial rock lobster fishers, a recreational rock lobster fisher and processing / marketers of rock lobster. In addition to the formal membership, RLIAC has a number of permanent observers who participate in the process at the direction of the Chairperson. Representatives from the Conservation Council of Western Australia and the Western Rock Lobster Council are permanent observers while a senior member of the Minister's staff also attends meetings.

Section 30 of the FRMA states that:

- (1) The functions of the Advisory Committee [RLIAC] are –*
- a. to identify issues that affect rock lobster fishing;*
 - b. to advise the Minister on matters relating to the management, protection and development of rock lobster fisheries; and*
 - c. to advise the Minister on matters relating to rock lobster fisheries on which the advice of the Advisory Committee is sought by the Minister.*
- (2) The Advisory Committee [RLIAC] may do all things necessary or convenient to be done for or in connection with the performance of its functions.*

To provide additional non-legislative guidance for the operation of RLIAC, and other advisory committees, 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. This Guide covers all critical operational aspects for advisory committees such as RLIAC. For example, the guide covers the role of members and observers, procedural matters, disclosure of interests and executive support for advisory committees.

In a manner consistent with Fisheries Management Guide No. 3, RLIAC has established a number of sub-committees to assist it. Collectively these sub-committees cover strategic management, cost recovery finance, stock sustainability research and development, compliance and marketing issues.

In addition to its longstanding sub-committees, RLIAC recently established two Scientific Reference Groups (SRG's) responsible for ensuring that RLIAC is

provided with advice on how to ensure the western rock lobster resource is managed in a manner that is consistent with the principles of ecosystem based management (EBM).

All these subordinates of RLIAC have compositions and terms of reference set down by RLIAC and each subordinate reports directly to RLIAC and operates in a manner that is consistent with Fisheries Management Guide No. 3.

Traditionally, the focus of management, and therefore consultative processes, has been the commercial sector. However, the management and RLIAC processes have evolved to more explicitly recognize and include other stakeholders – in particular the recreational and conservation sectors.

Discussion with stakeholders occurs through a variety of fora, but regular and well-known features of the RLIAC process include the annual coastal tour and stakeholder meetings held three to four times in a twelve-month period. The coastal tour is a day long forum with rock lobster stakeholders, including conservation representation, coordinated and organised by RLIAC. The tour is open to the public and held in October each year and visits three major rock lobster ports between Fremantle and Geraldton. This forum is widely recognised by rock lobster stakeholders as a mechanism for receiving the most up-to-date scientific advice on the status of the fishery within an ESD framework and discussing new and ongoing management issues in the context of the three-year planning process. Background material and the program for the upcoming coastal tour can be viewed and downloaded from www.fish.wa.gov.au around late September each year.

In recent years, RLIAC's consultation and communication with stakeholders has been further enhanced by conducting half day "Stakeholder meetings" prior to a meeting of RLIAC itself. Held quarterly, these stakeholder meetings provide regular opportunities for all rock lobster stakeholders to have direct input into the RLIAC process throughout the year.

RLIAC communication and engagement with stakeholders on the assessment of the annual technical report is through a variety of mediums:

- RLIAC News – published quarterly
- www.rocklobsterwa.com.
- Scheduled RLIAC meetings
- Scheduled Joint Stakeholder meetings
- Annual RLIAC coastal tour and accompanying background documentation and reports
- RLIAC Executive Officer

One of the purposes of these communication and consultation processes is to ensure stakeholders and the community more generally have access to relevant information, reports and advice that shape the advice RLIAC provides to the Minister. For example, reports from the Scientific Reference Groups are available through a variety of means. By making information available and by providing for a for discussion and exchange of ideas, RLIAC encourages input from stakeholders and the community into the management process.”

As the primary and statutory source of advice on all matters relevant to the management of the western rock lobster resource and use of it, RLIAC has an extensive network of expert advisers across its various subordinate committees, reference groups and processes that also provide opportunities for RLIAC to engage directly with stakeholders more broadly.

As the recipient of much advice from RLIAC on management issues, the Minister requires legislative power to turn knowledge and advice 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 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 on the advice of the Rock Lobster Industry Advisory Committee. The administration of these arrangements becomes the responsibility of the Executive Director 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 Executive Director. 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 at www.fish.wa.gov.au .

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 that applies 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 licence to fish recreationally for western rock lobster. A process is

currently underway to make the collection of orders and regulations available online.

To assist RLIAC and its subordinate committees and reference groups in developing management advice for the Minister, a fisheries management 'decision rules framework' for the western rock lobster fishery has been developed.

The costs of managing (including conducting research for management) the Western Rock Lobster Fishery are met from a variety of sources, including in particular significant contributions each financial year from the:

- West Coast Rock Lobster industry through the established cost recovery process;
- State Government;
- Fisheries Research and Development Corporation;
- Industry Development Unit; and
- Development and Better Interests Fund.”

4 PROCESSING AND TRANSHIPMENT

For the western rock lobster fishery, all landings are recorded and reported. Processing occurs at shore-side plants where landings are monitored by fishery enforcement officers and recorder by each licensed processing facility. Landings at remote locations are loaded into refrigerated trucks and transported to processing facilities. Each processor controls the trucking of its product from landing locations to processing facilities. No transshipments are made at sea.

This report acknowledges that sufficient monitoring takes place to identify the fishery of origin for all landed western rock lobster. This is sufficient to allow a Chain of Custody to be established from the point of landing forward for all products derived from the fishery. MSC chain of custody certifications were not undertaken in this project, and therefore, are to be undertaken on a separate and individual basis for those entities that may wish to identify and/or label products derived from the MSC certified fishery.

5 THE ASSESSMENT PROCESS

Scientific Certification Systems, Inc. conducted a pre-assessment of the western rock lobster fishery, as required by the MSC program, prior to the initial certification. After review of the pre-assessment, the applicants for certification authorized the formal, full assessment of the fishery. Since that time, the western rock lobster fishery was certified (March 2000) and completed annual audits through November 2005. This report constitutes a re-assessment of the fishery as required by the MSC once the original certificate has completed the 5-year term of the original certificate. Due to complications in the re-assessment process, SCS applied to the MSC for a variance in the certification methodology to allow the re-assessment process to

carry through beyond the 5-year term of the original certificate. As part of that application process, SCS also requested an extension of the original certificate through 31 May 2006. The MSC granted the variance and the extension of the original certificate due to extenuating circumstances. All aspects of the assessment process for this re-assessment were carried out under the auspices of Scientific Certification Systems, Inc., an accredited MSC certification body, and in direct accordance with MSC requirements (MSC Fisheries Certification Methodology Version 5), except where the MSC approved a variance in its methodological requirements.

In order to ensure a thorough and robust assessment process, and a process in which all interested stakeholders could participate, SCS took the approach of allowing additional time as needed for both industry and stakeholders to respond to requests for information and participation.

To be thorough and transparent, SCS provided opportunities for input at all stages of the assessment process, whether required or not by MSC procedures. The general steps followed were:

- Team Selection

SCS contacted the client, stakeholders in the environmental community, and the Department of Fisheries to solicit input on retaining the same assessment team members as participated in the original assessment. Comments were all positive with the exception of the Department of Fisheries. A letter was submitted to SCS that described concerns about conflicts of interest for both Dr. Bruce Phillips and Dr. Trevor Ward. SCS reviewed all pertinent materials submitted by the Department of Fisheries and additional materials solicited from Drs. Phillips and Ward. SCS concluded that the activities identified by the Department of Fisheries were acceptable to SCS and did not constitute a significant impediment to Drs. Phillips and Ward completing a thorough, independent, and objective review of the fishery. As a result, SCS retained the services of all three of the original assessment team members for the purposes of this re-assessment.

- Setting Performance Indicators and Scoring Guideposts

As required by the MSC assessment process, the assessment team drafted a set of performance indicators and scoring guideposts to correspond to the MSC Principles and Criteria. These were posted for more than the required comment period to allow stakeholders to provide comments.

- Input on fishery performance

Once performance indicators were finalized, SCS requested that the applicants compile and submit written information to the assessment team illustrating the fishery's compliance with the required performance indicators. At the same time, SCS requested that stakeholders submit their views on the fishery management

system's functions and performance. The client provided most of the information needed prior to the actual interviewing process. However, a number of documents and/or data were provided on an ongoing basis as the assessment team, the managers, or the applicants found them to be relevant. After the initial scoring of the fishery, additional information was requested to clarify points that the assessment team still found to be unclear.

- Meetings with industry, managers, and stakeholders

SCS planned for and conducted meetings with stakeholders, industry, fishery managers, and fishery scientists as required.

- Scoring fishery

The assessment team scored the fishery using the required MSC methodology and without input from the client group or stakeholders. A select set of indicators were reviewed a second time, due to the acquisition of additional information by the assessment team. All team members participated in and agreed upon the outcome of the additional review.

- Drafting report

The assessment team in collaboration with the SCS lead assessor, Chet Chaffee, drafted the report in accordance with MSC required process.

- Selection of peer reviewers

SCS, as required, released an announcement of potential peer reviewers soliciting comment from stakeholders on the merit of the selected reviewers. No comments were received other than from the client.

- Peer Review and Public Comment on Draft Reports
.As required, SCS will have this report peer reviewed and posted for public comment for the appropriate amount of time.

5.1 Evaluation team

| | |
|---------------------------|--|
| Project Manager: | Dr. Chet Chaffee, SCS (USA) |
| Assessor MSC Principle 1: | Dr. Tony Smith (CSIRO) |
| Assessor MSC Principle 2: | Dr. Trevor Ward (University of Western Australia) |
| Assessor MSC Principle 3: | Dr. Bruce Phillips (Curtin University of Technology) |

5.2 Other Fisheries in the area and summary of previous certification evaluations

There are some specific fisheries that operate wholly or partially within the boundaries of the West Coast Rock Lobster Fishery. These include:

- The Shark Bay Prawn Managed Fishery
- The Abalone Managed Fishery
- The Shark Bay Scallop Managed Fishery
- The Abrolhos Island Scallop Fishery
- Abrolhos Island and Mid West Trawl Managed Fishery
- South West Trawl Managed Fishery
- Shark bay Beach Seine and Mesh Net Managed Fishery
- Exmouth Gulf Beach Seine Fishery
- Western Australian Salmon Managed Fishery
- Australian Herring Fishery
- West Coast Purse Seine Managed Fishery
- Mid West Purse Seine Managed Fishery
- Sharp bay Snapper Managed Fishery
- West Coast Gillnet and Demersal Longline Interim Managed Fishery

A previous assessment under the MSC program was conducted on the western rock lobster fishery in 1999 – 2000. The assessment was conducted by Scientific Certification Systems, Inc. under contract to the Western Australian Fishing Industry Council. Under the initial assessment, the western rock lobster fishery was certified with a number of conditions. In general, the conditions assigned to the fishery during the initial assessment were addressed by the client. However, SCS found during its last surveillance audit of the fishery that in a number of instances, the work completed to address the conditions was still lacking the robustness thought necessary by the assessment team. The need for additional effort in part was a result of conditions that required more time than originally anticipated. In other instances, it was the result of a learning process. The requirements put upon the fishery after the initial assessment were the first within the MSC system and embodied leading edge ideas about ecosystem management that required a learning process to deliver. Contracts now in place and required to be completed as part of the original assessment and this re-assessment will provide the robust ecosystem review necessary to improve the management of the fishery in terms of providing comprehensive management of potential and actual ecosystem impacts.

6.0 THE MSC EVALUATION PROCESS

The Marine Stewardship Council standards for sustainable fisheries management were developed through an 18-month process (May, Leadbitter, Sutton, and Weber, 2003). An original draft was developed by an expert working group, which met in Bagshot, UK in 1996. The draft standard was then presented through a series of 8 workshops that lasted 3 days each. Comments from each of the workshops, and from written submissions to the MSC were compiled and made available to a second expert working group at Airlie House in Virginia, USA.

The final MSC standard (see below) was issued in 1998, and has since been used as the basis by which fisheries are evaluated under the MSC program. The western rock lobster fishery was evaluated using this same standard.

The scope of the MSC Principles and Criteria relates to marine fisheries activities up to but not beyond the point at which the fish are landed. The MSC Principles and Criteria apply at this stage only to marine fishes, fresh water fishes, and invertebrates (including, but not limited to shellfish, crustaceans and cephalopods). Aquaculture and the harvest of other species are not currently included. Issues involving allocation of quotas and access to marine resources are considered to be beyond the scope of these Principles and Criteria.

6.1 MSC Principles and Criteria

MSC PRINCIPLE 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

MSC Criteria

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.

3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

MSC PRINCIPLE 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

MSC Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

MSC PRINCIPLE 3

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

MSC Criteria:

A. Management System:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact

of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;

3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
5. incorporates an appropriate mechanism for the resolution of disputes arising within the system;
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;
10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - a. setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b. identifying appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
 - c. providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
 - d. mechanisms in place to limit or close fisheries when designated catch limits are reached;
 - e. establishing no-take zones where appropriate;
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

B. MSC Operational Criteria:

Fishing operations shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimize mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;

15. minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

6.2 Interpretation of MSC Principles for Performance Evaluations

Along with developing a standard for sustainable fisheries management, the MSC also developed a certification methodology that provides the process by which all fisheries are to be evaluated. The MSC accredits certification bodies (businesses) that can show that the expertise and experience necessary to carry out MSC evaluation is present in the organization. In addition, each certification body must demonstrate its fluency with the MSC standards and evaluation methods through the use of these in a fishery evaluation

The methods are provided in great detail through documents that can be downloaded from the MSC website (www.msc.org). At present, the Fisheries Certification Methodology is in its 5th version, issued April 2004.

The MSC Principles and Criteria are general statements describing what aspects need to be present in fisheries to indicate that they are moving toward sustainable management. The certification approach or methodology adopted by the MSC requires that any assessment of a fishery or fisheries move beyond a management verification program that simply provides third-party assurances that a company's stated management policies are being implemented. The MSC's 'Certification Methodology' is designed to be an evaluation of a fishery's performance to determine if the fishery is being managed consistent with emerging international standards of sustainable fisheries.

Using its expertise in fisheries management, fisheries biology and ecology, ecosystem monitoring, and stock assessments, the assessment team developed a set of performance indicators (see Section 8) to be consistent with the intent and extent of the MSC Principles and Criteria.

The performance indicators developed for MSC Principles 1 and 2 are structured such that all the Subcriteria and Performance Indicators are directly associated with a single MSC Criterion within a Principle. There is no duplication of Performance Indicators among MSC Criteria or MSC Principles.

The structure of the Subcriteria and Performance Indicators developed under MSC Principle 3 is somewhat different. Under MSC Principle 3, the Evaluation Team noted significant difficulty in developing a logical hierarchy of measures that remained unique to each MSC Criterion but also maintained a logical connection between indicators. Much of the difficulty stemmed from the fact that the 17 MSC Criteria under MSC Principle 3 vary in nature from general objectives to specific measures, but are not presented in a hierarchical framework from the very broad to the specific. Instead, the 17 MSC Criteria under MSC Principle 3

describe factors with significant redundancy. As a result, the Evaluation Team felt it would be better to construct a logical hierarchy that incorporates all the requirements spelled out by the 17 MSC Criteria and note the relationship of each Performance Indicator to the various MSC Criteria, as many of the Performance Indicators proposed can be linked to a more than one MSC Criterion.

The performance indicators and scoring guideposts adopted in this evaluation are based on the evaluation team's interpretation of the MSC Principles and Criteria, as applied to the particular case of western rock lobster. To develop the set of indicators and scoring guides used in this re-assessment, it is required by MSC methods to examine all current sets of performance indicators and scoring guides and use these to determine what is necessary for the current assessment project. Although this fishery was assessed previously, the use of performance indicators has evolved over the past 5 years of fishery assessments under the MSC initiative, and each set is noticeably different today compared to the set used in the original assessment of western rock lobster. The sets of indicators now in use are much more explicit and detailed to allow for a more comprehensive and objective review process. Only one recent assessment, the Baja California spiny lobster fishery, provided a recent set of indicators and scoring guides that the assessment team felt represented a similar type of fishery and therefore should be used to inform the drafting of the set used in this re-assessment. The MSC has made it clear that each fishery should be judged according to its particular circumstances and requirements, in line with the principles and criteria that they have set. In particular the performance indicators and scoring guideposts used to judge this fishery are meant to be similar to, but not necessarily identical to, those used to assess the Baja California fishery as the two lobster fisheries are still different in size, economic value, and in fishing effort and catch. It is also worth noting that the standards for MSC certification may not correspond exactly to the standards required by the fishery management plan or by the regional or national legislation under which it operates. Therefore, if the assessment points out areas where the fishery management does not exactly meet the MSC standards, it is not automatically suggestive of poor management, but a reflection of how well the fishery management system may comply with the standards for well-managed and sustainable fisheries set by the Marine Stewardship Council.

Also, it is important to remember when reading the scoring guideposts under each performance indicator that the scoring criteria established are regarded as cumulative. Thus, the fishery must first satisfy the criteria specified for a score of 60, before being assessed against those scoring guideposts required to score at the 80 level. In turn, those required for the 80 level must be attained before attempting to assess the fishery against those criteria specified to score 100.

Last, it is also important to understand that a specific methodology is required by the MSC to take the scores assigned to each indicator and determine the cumulative score under each MSC Principle. The methodological process required is called AHP or Analytical Hierarchy Process. This process required the assessment team to both prioritize and weight (on the basis of priority) each indicator. The weights are then used as multipliers to adjust the scores based on their predetermined level of importance within the hierarchy. Scores are then summed under each MSC Principle to get an unweighted average score (see Using the AHP and Expert

Choice to Support the MSC Fisheries Certification Process on the MSC website – www.msc.org).

6.3 Submission of Data on the Fishery

One of the most significant, and difficult, aspects of the MSC certification process is ensuring that the assessment team gets a complete and thorough grounding in all aspects of the fishery under evaluation. In even the smallest fishery, this is no easy task as the assessment team typically needs information that is fully supported by documentation in all areas of the fishery from the status of stocks, to ecosystem impacts, through management processes and procedures.

Under the MSC program, it is the responsibility of the applying organizations or individuals to provide the information required by the assessment team. It is also the responsibility of the applicants to ensure that the assessment team has access to any and all scientists, managers, and fishers that the assessment team identifies as necessary to interview in its effort to properly understand the functions associated with the management of the fishery. Last, it is the responsibility of the assessment team to make contact with stakeholders that are known to be interested, or actively engaged in issues associated with fisheries in the same geographic location.

In the western rock lobster fishery the applicant (WAFIC) provided a submission that reviewed the information available for the fishery. The information was compiled in a format that outlined the data relevant to each performance indicator, including the client's view as to how the fishery compared to the standard. In addition, the client provided a bibliography and copies of all papers cited in its submission to SCS. The client also arranged for the assessment team to meet with the appropriate scientists, managers, and enforcement officials at the organizations responsible for the science and management of the fishery.

In contrast to the applicant's role in MSC assessments, the stakeholders in the fishery are under no specific obligation, other than personal preference, to provide the assessment team with information. Therefore, a significant effort was made to contact and solicit comments from stakeholders to ensure the assessment team understood their concerns.

7 ASSESSMENT TEAM MEETINGS AND INTERVIEWS

7.1 Justification for selection of items/persons inspected.

The sites and people chosen for visits and interviews were based on the assessment team's need to acquire information about the management operations of the fisheries under evaluation. Agencies and their respective personnel responsible for fishery management, fisheries research, fisheries compliance, and habitat protection were identified and contacted with the assistance of the client group and stakeholders. In addition, professional fisher's associations and industry associations were identified and contacted.

7.2 Fishing industry and fishery management meetings

The assessment team met with the client on more than one occasion to discuss aspects of the fishery and gather additional information. A number of meetings/phone calls were simply held to organize additional meetings and to clarify issues relating to data submissions to the evaluation team. Table 1 provides a general list of the people and organizations met during the assessment process.

During this fishery assessment, numerous attempts were made to gather direct information and/or opinions from a variety of stakeholders, some known to directly participate in various aspects of the management of the western rock lobster fishery. Submissions were provided by Nic Dunlop (representing a coalition of environmental organizations), Lorraine Hitch and Paul Gamblin on behalf of WWF, and Mr. David Offord. In addition, the assessment team in full met with a number of persons representing environmental organizations in Perth, and initiated conference calls individually with Mr. Offord and with WWF.

Table 1 Organizations and People Interviewed as part of the Sablefish Fishery Assessment Process

| | | |
|-----------------|--|-----------------------------------|
| Full Assessment | ▪ Management | WA Department of Fisheries |
| | ▪ Ecosystem | Tim Bray |
| | ▪ Stock Assessment and Stock Status | Rhys Brown |
| | | Jim Penn |
| | | Nick Caputi |
| | | Rick Fletcher |
| | | Roy Melville-Smith |
| | | Peter Rogers |
| | | WAFIC |
| | | Max Ball |
| | | Guy Leyland |
| | | Graham Short |
| | Stakeholders | WA Conservation Council |

WA Wilderness Society

WWF

Mr. David Offord

Rock Lobster Council

8 ASSESSMENT TEAM PERFORMANCE EVALUATIONS

After completing all the reviews and interviews, the assessment team is tasked with utilizing the information it has received to assess the performance of the fishery. Under the MSC program, the process for assessing the fishery is performed by prioritizing and weighting the indicators relative to one another at each level of the performance hierarchy established when the assessment team developed the set of performance indicators and scoring guideposts for the fishery. Subsequent to this, the assessment team assigns numerical scores between 0 and 100 to each of the performance indicators. All of this is accomplished using decision support software known as Expert Choice, which utilizes a technique known as AHP (Analytical Hierarchy Process). A full description of the AHP process can be found on the MSC web site (www.msc.org). In essence, the process requires that all team members work together to discuss and evaluate the information they have received for a given performance indicator and come to a consensus decision on weights and scores. Scores and weights are then combined to get overall scores for each of the three MSC Principles. A fishery must have normalized scores of 80 or above on each of the three MSC Principles to be recommended for certification. Should an individual indicator receive a score of less than 80, a 'Condition' is established that when met, would bring the fishery's performance for that indicator up to the 80 level score representing a well-managed fishery.

Below is a written explanation of the assessment team's evaluation of the information it received and the team's interpretation of the information as it pertains to the fishery's compliance with the MSC Principles and Criteria.

MSC Principle 1

Principle 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

1.1 (MSC Criterion 1) The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.

The intent of this Criterion under the MSC assessment system is to ensure that a fishery is managed and fished in ways that allow as much extraction as possible while maintaining healthy populations of the target and non-target species in the area of the fishery. In addition, it is aimed at evaluating whether the management also takes into consideration the ecological impacts that could occur as a result of fishing.

This issue was formerly assessed in 1999-2000 by the SCS assessment team during the initial certification process for the WRL fishery. In addition, SCS has reviewed this issue in depth during surveillance audits from 2001-2005. As part of the surveillance audits, SCS found a number of issues of concern with the most recent assessment in the fishery related to productivity of the target stock. The issues of sufficient concern to cause the need for corrective actions to be invoked were identified and reported in 2005 (see SCS Surveillance Report from 2005). The corrective action relevant to getting a better understanding of the current assessments on target stock productivity are being addressed by a formal review of the Department of Fisheries assessment methods and results. The review is being conducted by Dr. Norm Hall (Murdoch University). The Terms of Reference (TOR) for the review are:

1. Review the data descriptions and data sets that were available to the Department of Fisheries (the Department) when it conducted its 2004 and 2005 western rock lobster stock assessments.
2. Review the different time series of data and model outputs and assess the implications of the weights given to alternative data sets during the 2004 and 2005 stock assessments.
3. Review the technical description of the modelling and statistical analyses that were undertaken to produce the 2004 and 2005 stock assessment results that were presented to the Rock Lobster Industry Advisory Committee (RLIAC) and other stakeholders.
4. Review the 2004 and 2005 stock assessments and the conclusions on stock status that were drawn from the results of the assessments.
5. Review the written advice provided to the RLIAC and to stakeholders in which the results, conclusions, and implications of the 2004 and 2005 stock assessments for the western rock lobster fishery were reported.
6. Discuss with Department of Fisheries' staff, the data, assessments and the various issues raised by Scientific Certifications Systems (SCS) in its 2005 Final Surveillance Report (December 2006).

7. Report on the general "robustness" of the advice that has been provided to stakeholders on the status of the resource and the need for the specified management responses.
8. Recommend any improvements to the stock assessment process for the western rock lobster fishery that could provide future stock assessment with additional reliability and robustness.

The work will be peer reviewed by Dr. Jim Ianelli (United States, National Marine Fisheries Service) and then subsequently reviewed by SCS.

This work in many ways addresses many of the deficiencies identified under Principle 1 in this re-assessment process. As a result, many of the Conditions identified in this section of the report are directly linked to the ongoing work by Dr. Hall if SCS found that the issues were the same. If issues are different, new and separate Conditions are identified.

1.1.1 There should be sufficient information on the target species and stock to allow the effects of the fishery on the stock to be evaluated.

1.1.1.1 The identification and reporting of target species is well documented.

Scoring Guidepost 60

There is only a moderate degree of confidence in proper identification and reporting of the target species.

Scoring Guidepost 80

There is a high degree of confidence in proper identification and reporting of the target species.

Scoring Guidepost 100

There is a very high degree of confidence in proper identification and reporting of the target species.

Score 100

The species is clearly differentiated from other rock lobsters in the region. Genetic studies suggest a single panmictic population across the area of the fishery. Reporting arrangements are comprehensive. This indicator meets the 100 scoring guideline.

1.1.1.2 The life history of the species (including age at maturity, natural mortality, growth, and fecundity) is understood.

Scoring Guidepost 60

There are serious gaps in information but the basis of the life history is understood adequately to support a rudimentary evaluation of the fishery.

Scoring Guidepost 80

The life history of the species is clearly documented and understood well enough to support a high degree of confidence in the evaluation of the fishery.

Scoring Guidepost 100

All aspects of the life history of the species are clearly documented and understood so as to support a very high degree of confidence in the evaluation of the fishery.

Score 90

Most aspects of the life history of the species are clearly documented and understood (Gray, 1992). The basic biology of the WRL was established early in the history of the fishery, and all basic life history parameters (fecundity, growth, natural mortality) have been studied and are well understood (Phillips & Brown, 1989). Tagging studies, as well as information on spatial and temporal patterns of catches, have established the seasonal and life history stage movement patterns of the WRL (Caputi et al., 2003). These studies support a high to very high degree of confidence in the evaluation of the fishery.

1.1.1.3 The geographical range of the target stock is known.

Scoring Guidepost 60

An estimate of the geographical range of the target stock is available.

Scoring Guidepost 80

A reliable estimate of the geographic range of the target stock is available including seasonal patterns of movement/availability.

Scoring Guidepost 100

The complete geographic range of the stock, including seasonal patterns of movement/availability, is reliably estimated.

Score 95

The complete geographic range of the stock, including seasonal patterns of movement/availability, is reliably estimated. The fishery targets a single well-identified species, which has a well defined range and is not found elsewhere. The spatial origins of egg production are being studied along with studies to better understand larval mixing and recruitment under various oceanographic circumstances (e.g. Caputi et al. 2001, Griffin et al 2001, Caputi et al. 2003). Commercial WRL fishers have provided a comprehensive record of catch and fishing effort by one degree blocks via compulsory monthly returns (100% of the fleet) since 1945 and via voluntary daily log books (between 30 and 38% of the fleet) since 1965, which provide detailed information on catch and fishing effort by location (10 minute transects by depth), breeding state, by-catch, undersize returned, environmental conditions, gear and bait type used, etc. Overall the fishery nearly meets the 100 scoring guideline for this indicator.

1.1.1.4 Information on reproductive output, and on recruitment and its relationship to parental stock is understood.

Scoring Guidepost 60

There are enough years of information available on indices of recruitment and parental spawning stock abundance to support a rudimentary evaluation of the fishery.

Scoring Guidepost 80

Estimates of fecundity at size, growth rates, sexual maturity at size, and relationship of recruits to spawners are understood well enough to support a high degree of confidence in the evaluation of the fishery.

Scoring Guidepost 100

There is comprehensive and reliable information on the fecundity at size, sex ratio, sexual maturity at size, and factors affecting recruitment, and these are monitored over time to detect trends and shifts and to support a very high degree of confidence in the evaluation of the fishery.

Score 95

There is comprehensive and reliable information on the fecundity at size, sex ratio, sexual maturity at size, and factors affecting recruitment, and these are monitored over time to detect trends and shifts (e.g. Morgan, 1977). There is long history of quality investigations into larval settlement and recruitment, and their relationship to spawning stock, environmental factors, and subsequent recruitment to the fishery and catches, summarized in a series of publications (Morgan et al. 1982, Caputi and Brown, 1989 and 1993, Caputi et al. 2003). There is a continuous time series of data on larval settlement since the late 1960s. In recognition of concerns about using fishery dependent catch rates as an index of stock abundance, a fishery independent survey of spawning stock levels was established and has operated since 1992. (Hall & Chubb, 2001). The stock recruitment-environment relationship is well understood. (Pearce & Phillips, 1994; Caputi et al., 2001). Overall, this information provides high to very high support for evaluation of the fishery.

1.1.1.5 Information is collected on the abundance/density of the stock.

60 Scoring Guidepost

- Either fishery dependent or fishery independent indices are available on the abundance of the stock biomass for a number of years.
- Qualitative information exists on the appropriateness of the indices as proportional indicators of stock size and to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

- Fishery dependent and/or fishery independent indices are available on the abundance of the stock for a number of years.

- Uncertainties in data and indices have been analysed and accounted for.
- The indices are understood well enough to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

- Fishery independent indices are available on the abundance and density of the stock over sufficient years to assess longer term trends.
- Indices are consistent and there is clear evidence that they are proportional to the stock size and of sufficient precision to support a very high degree of confidence in the evaluation of the fishery.
- Uncertainties have been fully analyzed.

Score 75

The fishery has done a good job of collecting abundance data over time – both fishery dependent and fishery independent. Fishery dependent indices of abundance stretch back to 1971, while fishery independent data collection was initiated in 1992. Moreover there is also a fishery independent time series of puerulus settlement over a long period of time, supporting information on recruitment. The various abundance time series are presented annually e.g. in Caputi et al. (2004). More recently, additional derived indices of abundance have also become available (Wright et al., in press). Statistical uncertainty in most of these indices has been derived, though not often presented. The main problem with these data currently lies in inconsistencies in trends between different time series. These inconsistencies, and the inability of the models currently in use to fit these data, raise serious questions about the relationship between the indices and abundance of the stock. Thus despite the large effort going into collecting data to support indices of abundance, these data are not currently understood well enough to support a high degree of confidence in the evaluation of the fishery.

Corrective action

Resolve any identified inconsistencies between time series (for details of suggested approach, see Corrective action for indicator 1.1.5.1). Inconsistencies will be identified by the existing review by Dr. Norm Hall (Murdoch University) as described under Principle 1, Criterion 1 above. Under this Corrective Action, WAFIC will be obliged to address any identified inconsistencies with an Action Plan that spells out the work to be performed and the outcomes achieved, and the Action Plan will have to be approved by SCS.

1.1.1.6 The size structure of catches is measured.

60 Scoring Guidepost

Data on the size structure of catches are known well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Data on the size structure of catches in the main fishery are of adequate accuracy and measured for enough years to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

There is comprehensive and reliable data on the size structure of all significant catches (including recreational catches) to support a very high degree of confidence in the evaluation of the fishery.

Score 90

The size structure of the catch is monitored in several ways. Monitoring of size composition of commercial catches has occurred since 1971. Monthly processor returns provide data on whole landed weights and grade categories. Although recreational catches (that represent 5-8% of total catch) are not monitored for size, the location and depth distribution of these catches are well known and size composition can be inferred from commercial catches in the same depths and areas. Overall these data support high to very high support for evaluation of the fishery.

1.1.2 There should be sufficient information on the fishery to allow its effects on the target stock to be evaluated

1.1.2.1 Fishery related mortality is recorded/ estimated (including landings, discards and incidental mortality).

60 Scoring Guidepost

Sufficient information is available to allow accurate estimates to be made of landings broken down as required for a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Landings from commercial and recreational fishing are accurately estimated and monitored by area/zone to support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

- Landings from commercial and recreational fishing are accurately estimated and monitored by area/zone to support a very high degree of confidence in the evaluation of the fishery.
- Mortality caused by returning undersized fish to the water is well understood and accounted for.

Score 95

Landings from commercial and recreational fishing are accurately estimated and monitored by area/zone. Commercial WRL fishers have provided a comprehensive record of catch and fishing effort (catch rates/abundance) by one degree blocks via compulsory monthly returns (100% of the fleet) since 1945 and via voluntary daily log books (30 to 38% of the fleet) since

1965, which provide detailed information on catch and fishing effort (catch rates/abundance) by location (10 minute latitude transects by depth and distance offshore), breeding state, by-catch, undersize returned, environmental conditions, gear and bait types used. Fishers from all areas participate in the logbook program, and while they are not randomly chosen, they do provide a relative indicator of catch distribution and catch rates. There is an annual postal survey that is used to estimate the total annual recreational catch. Estimates of the recreational catch and effort are also predicted 3 years in advance of the season based on puerulus settlement. An improved method for estimating recreational catch has been undertaken in recent years based on a phone/diary approach to obtain detailed catch and effort records. (Melville-Smith et al. 2001 and in press). Mortality caused by returning undersized WRL to the water has been well researched, understood and accounted for (Brown and Caputi, 1986). There have been improvements to escape gaps and in the time allowed to keep undersize and mature females before returning them to sea to reduce mortality of the protected part of the stock. This information provides very high support for evaluation of the fishery, with the only concern being the non-random nature of the logbook program.

1.1.2.2 Fishing effort is recorded, estimated, and standardized to effective fishing effort.

60 Scoring Guidepost

Nominal effort data are available which can be used to estimate effective fishing effort well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Accurate estimates of effective fishing effort have been made and support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

Comprehensive records are kept of fishing effort, recorded at sub-annual intervals at an appropriate degree of spatial resolution and have been standardized to effective fishing effort and support a very high degree of confidence in the evaluation of the fishery.

Score 75

There is a comprehensive program to collect and analyze data on catch and effort for the commercial fishery. This relies on a compulsory reporting requirement for all fishers, augmented by a voluntary research logbook program with a significant level of industry participation. Estimates of effective fishing effort have been made for the WRL fishery (e.g. Morgan, 1977, Brown et al. 1994) and changes in fishing power (effective versus nominal effort) have received detailed attention (Fernandez et al., 1998). Population depletion methods are also used to estimate the exploitation rate in the fishery and these are used in assessing the status of the WRL stocks (e.g. see Caputi et al., 2004 and Wright et al., in press). It is therefore the case that considerable effort has been expended on data collection and analysis with regard to effective fishing effort. However the work of Wright et al. in particular raises some serious doubts about just how well effective effort and changes in catchability are understood. Based on that work, there now appear to be unexplained cycles and trends in

catchability that are not consistent with other data in the fishery (or at least have not yet been reconciled with those data). Thus, despite the quantity of data and studies available, this indicator does not appear to meet the 80 scoring guideline of supporting a high degree of confidence in the evaluation of the fishery.

Corrective action

Undertake further analysis and review of the results in Wright et al. (in press) and provide an explanation for apparent cycles and trends in catchability. Reconcile these results with trends in other time series of data for the fishery, by fitting all time series simultaneously to models of the fishery and showing where any inconsistencies lie.

1.1.2.3 Fishing methods and gear types are known throughout the fishery.

60 Scoring Guidepost

Main fishing methods and gear types are known for the fishery well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Main fishing methods and gear types are known and information is available on the geographical areas of use and support a high degree of confidence in evaluation of the fishery.

100 Scoring Guidepost

- All fishing methods and gear types employed in the fishery are known.
- In-situ observations are made of fishing practices.
- The information and observations support a very high degree of confidence in the evaluation of the fishery.

Score 95

The commercial fishery employs a standard pot design and the gear and bait used are recorded in the log book program. The form of pot used by recreational fishers is also regulated. Changes to escape size and other aspects of pot design have been recorded over time (since at least 1965). There has been considerable research effort on design and effectiveness of the fishing gear. *In situ* observations have been made of the operation of fishing gear. The information on fishing methods and gear types used from the voluntary log books and the commercial catch monitoring is used in the evaluation of the fishery. This information provides very high support for the evaluation of the fishery.

1.1.2.4 Changes in selectivity are known and accounted for.

60 Scoring Guidepost

Some information is available on selectivity and qualitative changes in selectivity, sufficient to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

Changes in fishing practices and regulations, and hence selectivity, are well estimated and are sufficient to support a high degree of confidence in evaluation of the fishery.

100 Scoring Guidepost

There is comprehensive information on changes in selectivity over time and space, sufficient to support a very high degree of confidence in the evaluation of the fishery.

Score 90

This scoring indicator focuses on changes in selectivity of the gear, rather than broader changes in catchability. Selectivity itself has been well studied, with considerable research on effectiveness of gear, and careful documentation of changes in gear over time. The effect of gear type, fishing practices and regulations and environmental factors (e.g. moon phase, water temperature, swell, etc) have been researched and are systematically collected and documented. The information is used to account for changes in selectivity when assessing the status of the stock or changing the management regime (e.g. Srisurichan, 2001 and Srisurichan et al., in press). Overall, this information provides high to very high support for evaluation of the fishery.

1.1.2.5

Other fisheries in the area that are not subject to certification are identified and monitored.

60 Scoring Guidepost

- There is some information relating to other fisheries in the area that are not subject to certification, sufficient to identify significant impacts on the target species.
- Where necessary, impacts by these fisheries are accounted for in the stock assessments well enough to support a rudimentary evaluation of the fishery.

80 Scoring Guidepost

- Any other fisheries impacting on the target species and not subject to certification are identified.
- Where significant mortalities of the target species from those fisheries occur, they are included in the stock assessments and support a high degree of confidence in the evaluation of the fishery.

100 Scoring Guidepost

All fisheries (and other sources of human-induced mortality) impacting on the target species in the area that are not subject to certification are identified, monitored, and included in the stock assessments and support a very high degree of confidence in the evaluation of the fishery.

Score 95

All fisheries (and other sources of human-induced mortality) impacting on the target species in the area that are not subject to certification are identified, monitored, and included in the stock assessments. There is only one other rock lobster fishery, the Windy Harbour /Augusta (WH/A) managed rock lobster fishery, that takes a small amount of WRL in the extreme south of the range of *P. cygnus*, i.e. south of 34 degrees 24 minutes south latitude (south of Cape Leeuwin). This fishery targets both WRL and southern rock lobster (*Jasus edwardsii*). WH/A is a limited entry fishery and since 1996, when the fishery went through a significant restructuring (boat and trap reduction), there are only two boats using 320 traps. The average catch for the ten years 1994/95 to 2003/04 was 16.3 tonnes. Puerulus settlement in this fishery is very low and extremely variable because the fishery is at the extreme south of *P. cygnus*' range. Therefore there is also great variability in catch from season to season. WH/A has virtually the same rules (minimum size, ban on taking spawning females, trap sizes, closed season, etc) as the WRL fishery. The WH/A fishery is assessed annually but is not subject to MSC certification. In summary, this indicator comes close to achieving the 100 scoring guideline.

1.1.3 Appropriate reference levels have been developed for stock abundance and/or fishing mortality rate.

1.1.3.1 Limit and/or target reference points that are appropriate to the stock have been identified and applied.

60 Scoring Guidepost

- Limit and/or target points have been chosen and are justified by general agreement among fishery scientists and managers that they are appropriate to achieve long term sustainability for the target stock.

80 Scoring Guidepost

- Limit and target points are justified based on stock biology or exploitation history, and they are measurable given data and assessment limitations.
- There is no significant scientific opposition about those points outside the management agency.

100 Scoring Guidepost

- Limit and target points are justified based on stock biology, uncertainty, variability, data limitations and statistical simulations of these factors.
- There is no significant scientific opposition about those points outside the management agency.
- Limit and target points take account of ecological impacts and uncertainties associated with those impacts.

Score 80

The limit reference point for egg production used in this fishery is empirically based and is set at the level of the late 1970's and early 1980's, which, on a stock-wide basis, is estimated to

be about 25% of the unfished egg production. This reference point has been widely agreed and there is no significant opposition to it. Fishery dependent data to estimate levels of egg production relative to 1980 are collected, and fishery independent data exist since 1992. However the statistical robustness of these data is questionable as there are inconsistent trends between data series, so the fishery scores at the 80 level for this indicator.

1.1.3.2 **Reference points meet acceptable international standards (such as those determined by FAO).**

60 Scoring Guidepost

Reference points recognise appropriate international standards and are being developed to meet these.

80 Scoring Guidepost

Reference points recognise, and are in line with, acceptable international standards.

100 Scoring Guidepost

Reference points meet or exceed international standards.

Score 90

The current biological reference point used in this fishery is the level of egg production in the late 1970's and early 1980s, estimated to be 25% of unfished level of egg production. This level was chosen to maintain the breeding stock at levels corresponding approximately to those in the late 1970s, when the exploitation rate was significantly lower than in recent years. Despite the stock having subsequently reached levels as low as 15% of unfished levels of egg production, there is no empirical evidence that this led to a decline in recruitment levels (larval settlement or subsequent fishery recruitment). Recruitment appears to be environmentally determined at the breeding stock levels seen in the fishery to date. The recruitment to the fishery has been maintained for almost two decades with egg production at or below this level, which suggests that the fishery should continue to be sustainable if this standard is maintained (Hall and Chubb 2001). Although the international standard for a biomass limit reference point is not fully agreed, the spawning biomass corresponding to 20% of unfished levels is often used. The limit reference point for the WRL fishery (25%) is slightly higher than this level. The limit reference point therefore slightly exceeds international standards.

1.1.4 **There is a well-defined and effective harvest strategy to manage the target stock.**

1.1.4.1 **There is a mechanism in place to contain harvest as required for management of the stock.**

60 Scoring Guidepost

- Mechanisms exist to monitor and (if necessary) reduce harvest.

- Such mechanisms have not been tested, but nevertheless provide a moderate degree of confidence in the management of the stock.

80 Scoring Guidepost

- Mechanisms are in place to reduce harvest as and when required to maintain, or allow the target stock to return to, productive levels.
- These provide a high degree of confidence in the management of the stock.

100 Scoring Guidepost

- Mechanisms are in place to reduce harvest as and when required to maintain (or allow the target stock to return to) productive levels
- They provide a very high degree of confidence in the management of the stock.
- Measures to demonstrate effectiveness are in place.

Score 90

The WRL fishery is managed using input controls. A variety of control measures are used, including pot limits, closed seasons, size controls, and limits on take of berried females. Monitoring programs are designed to measure egg production levels, with the aim of keeping these above 1980 levels (about 25% of unfished levels). By the early 1990s, exploitation rates had increased and egg production levels were as low as 15% of unfished levels (Walters et al., 1993, Hall and Chubb 2001). Effort levels were reduced in 1993 resulting in fairly rapid recovery of egg production levels. There is therefore empirical evidence to support the statement that mechanisms are in place to reduce harvest as and when required to maintain, or allow the target stock to return to, productive levels, and monitoring is being maintained to assess effectiveness of these measures. However there is currently some uncertainty about the robustness of some of the indices derived from the monitoring (given contradictory signals and inability of models to fit the data). This indicator has therefore been scored at between the 80 and 100 levels.

1.1.4.2 There are clear, tested and agreed decision rules set out for effective management of the stock.

60 Scoring Guidepost

- It can be demonstrated that decision making, though not documented or agreed, is logical and appropriate.
- Rules have not been tested, but there is a moderate degree of confidence in their effectiveness for management.

80 Scoring Guidepost

- Clear decision making rules exist, are fully documented and formally agreed, but have not been fully tested.
- Decision rules are reconciled with reference points and with data and assessment limitations and there is a high degree of confidence in their effectiveness for management.

100 Scoring Guidepost

- Clear, documented, and tested decision rules are fully implemented and have been fully reconciled with reference points and there is a very high degree of confidence in their effectiveness for management.
- Data and assessment limitations have been periodically evaluated.

Score 80

A decision rule framework has recently been developed for the WRL fishery (Bray 2004), representing a positive step forward for the fishery. This framework includes the use of agreed biological reference points, and agreed management responses (in a general sense) to exceeding them. The decision rules have not as yet been formally tested using simulation approaches to check for their robustness (e.g. against data and assessment limitations). However they do embody reasonable features and make use of reasonable reference levels. The decision rule framework has been agreed by stakeholders and is currently being used to deal with a potential egg production problem in Zone B (northern part) of the fishery (Anon 2004, Bray 2004 and Anon 2005). On balance, therefore, this indicator appears to meet the 80 scoring guideline.

1.1.4.3 There are appropriate management tools specified to implement decisions for management of the stock.

60 Scoring Guidepost

- Management tools exist to implement management decisions.
- Some evidence exists to show that these tools can be effective and there is a moderate degree of confidence in their effectiveness for management.

80 Scoring Guidepost

- Management tools have been specified to implement management decisions.
- Evidence exists to show clearly that the tools support a high degree of confidence in their effective use for management.

100 Scoring Guidepost

- Management tools have been specified to implement management decisions.
- Tools are responsive, relevant and timely. Performance of the tools has been evaluated and evidence exists to show clearly that tools achieve their objectives and support a very high degree of confidence in the effectiveness for management.

Score 85

As noted for indicator 1.1.4.1, the fishery is management by input controls, and a wide variety of management tools are used, and have been used in the past. These tools are used to manage exploitation rates in the fishery, with the aim now being to maintain the stock above 1980 levels. Evidence exists to show that application of these tools does work. For example the stocks were assessed to be well below reference levels in the early 1990s (Walters et al. 1993)

and a package of management measures was introduced in 1994 including, an 18% reduction in trap numbers, an increase the minimum size from 76 to 77 mm carapace during the whites migration (December-January), a maximum size to protect large spawning females and other measures, which resulted in relatively rapid recovery of stock levels (Hall and Chubb 2001). Although this recovery strategy was successful, more recent analyses suggest that further restrictions are again needed (Caputi et al. 2004). This indicator therefore appears to somewhat exceed the 80 scoring level.

1.1.4.4 Harvest strategies are precautionary

60 Scoring Guidepost

- Harvest rates respond appropriately to low stock size
- Uncertainties about stock status are documented

80 Scoring Guidepost

- Harvest rates are reduced at low stock sizes
- Decision rules are explicitly precautionary (are more conservative as uncertainty about resource status increases)

100 Scoring Guidepost

- The harvest strategy includes formal rules to achieve rapid recovery if stocks approach or fall below limit reference points
- Harvest rates are an explicit and inverse function of levels of uncertainty about stock size

Score 75

The currently agreed harvest strategy (Bray 2004) includes explicit measures to reduce exploitation rates as stocks approach or exceed lower reference levels. However this harvest strategy does not currently include explicit measures to be more precautionary as uncertainty about stock status increases. This indicator does not therefore meet the 80 scoring guideline.

Corrective action

This Corrective Action is also tied to the current review being conducted by Dr. Norm Hall (Murdcoch University). Based in part on the outcomes of Dr. Hall's review, WAFIC will be required to revise the harvest strategy framework to include explicit reference to measures of uncertainty about current stock status and how this needs to be measured. Uncertainty should take account of trends in the full range of indicators available to the assessment. In addition, WAFIC is required to facilitate a revision in management responses by the Department of Fisheries so that they are more explicitly precautionary with respect to uncertainty in stock status.

WAFIC will be required to detail the work planned to meet this Corrective Action in an Action Plan that will be submitted to SCS for approval.

1.1.5 There is a robust assessment of stocks.

1.1.5.1 Robust assessment methods are used to provide advice on stock status

60 Scoring Guidepost

A robust empirical approach to assessing stock status is adopted

80 Scoring Guidepost

- Robust assessment models are used to assess stock status on an annual basis.
- Assessment models incorporate and integrate a variety of relevant information and data about the fishery

100 Scoring Guidepost

- Assessment models are used and capture all major features appropriate to the biology of the species and the nature of the fishery and the nature of the management questions being asked.
- The assessment models incorporate and integrate all relevant information and data about the fishery. They use statistically robust methods of fitting to the data, and deal explicitly with both process and measurement error.

Score 70

While there has been previous modelling of the stock undertaken in the WRL fishery (Walters et al. 1993; Hall and Chubb 2001), annual assessments of stock status consist of reports summarizing trends in a range of indicators, including breeding stock indices, catch, effort, catch rates, puerulus settlement rates, and most recently, trends in residual stock and catchability from depletion estimates (Anon, 2004 and 2005; Caputi et al. 2004; Wright et al. in press). There has been no serious attempt to fit stock assessment models to these data since at least 2001 – there are certainly no reports available of such work having been undertaken. The Director of Research for the WA Department of Fisheries stated on a number of occasions during the previous MSC certification period for the fishery that the stocks are managed on an “empirical” basis, mainly on the basis of trends in spawning stock indices (both fishery dependent and fishery independent). He strongly resisted suggestions that it would be desirable or even useful to fit stock assessment models to the available fishery data, or that stock management should be based on such modelling. While trends in key indicators have been unambiguous and consistent across indices, this purely empirical approach has perhaps been defensible. However a number of problems have now clearly emerged with the approach. These problems were documented in detail in a document sent to WAFIC in March 2005, and are not repeated in detail here. In brief, the problems include apparent inconsistencies between fishery dependent and fishery independent indices of spawning stock abundance, inconsistent use of these indicators in reports to the fishery, apparent inconsistencies with other time series (such as abundance indices from depletion estimates), and inability of the Hall and Chubb model to fit recent trends in the data. (Although assessment models are not used in the fishery, a previous request by the MSC review team to show how the Hall and Chubb model fitted recent data did result in provision of two Excel

spread sheets. These confirmed failure of the model to fit the data). Although WAFIC provided a response to the issues and concerns raised in March 2005, this response did little to address the problems raised. This indicator clearly does not meet the 80 scoring guideline.

Corrective action

As a matter of urgency, a full quantitative assessment of the WRL stocks using appropriate models and fitting to all relevant time series data is needed.

This is in part contingent on the review underway by Dr. Norm Hall (Murdoch University). The review by Dr. Hall will provide the basis for a new and complete stock assessment that will correct any identified inconsistencies or deficiencies from past assessments. As part of Dr. Hall's review, the uncertainties about current stock status for the three management regions in the fishery is being undertaken. If additional work is needed after completion of Dr. Hall's review, WAFIC will be required to undertake that work as part of this corrective action.

1.1.5.2 The assessment takes sufficient account of major uncertainties in data (including evaluation of assumptions) to provide a robust assessment of the stock.

60 Scoring Guidepost

- Major uncertainties are identified.
- Some attempt has been made to evaluate these in the assessment.
- There is a moderate degree of confidence in the robustness of the assessment.

80 Scoring Guidepost

- The assessment takes into account major uncertainties in the data and functional relationships.
- The most important assumptions have been evaluated, the consequences are known.
- There is a high degree of confidence in the robustness of the model.

100 Scoring Guidepost

- The assessment addresses all significant uncertainties in the data and functional relationships and evaluates the assumptions in terms of scope, direction and bias relative to management-related quantities.
- There is a very high degree of confidence in the robustness of the model.

Score 65

This indicator scores the same as indicator 1.1.5.1, and for the reasons outlined in that indicator. While some attempt has clearly been made to address statistical uncertainties in individual indicators, little or no attempt has been made to reconcile uncertainties between indicators.

Corrective Action

The corrective action is the same as for indicator 1.1.5.1.

1.1.5.3 Uncertainties and assumptions are reflected in management advice.

60 Scoring Guidepost

- Major uncertainties are recognised and are reported in management advice, as well as possible implications of those uncertainties on the management advice.
- There is a moderate degree of confidence in the adequacy of uncertainties addressed in the management advice.

80 Scoring Guidepost

- Major uncertainties and assumptions are addressed in the management advice and through the appropriate decision rules to address those limitations.
- There is a high degree of confidence in the adequacy of uncertainties addressed in the management advice.

100 Scoring Guidepost

- All significant uncertainties and assumptions are addressed and reflected in the management advice, including appropriate decision rules.
- There is a very high degree of confidence in the adequacy of uncertainties addressed in the management advice.

Score 65

The general approach of the WA Department of Fisheries in providing advice to stakeholders is to stress certainty rather than to discuss uncertainty in assessments. As already noted, the approach to providing assessment advice is essentially an empirical and descriptive one, but this has become confounded recently due to inconsistencies across different data sets. Despite this, the Department continues to put forward advice on a “best assessment” basis, mainly relying on the strength of the monitoring and empirical indicators to support this approach. In responding to this indicator, WAFIC’s (and presumably the Department’s) assertion was that “There is a high degree of confidence in the adequacy of uncertainties addressed in the management advice. This is based on the use of high quality, robust empirical data (e.g. time series of spawning stock estimates – fishery dependent and independent) and where necessary sophisticated models that take into account the major uncertainties in the data and functional relationships (e.g. Hall and Chubb 2001)”. It has already been noted that indicators may not be as robust as claimed and that the models do not account for major uncertainties in the data (see 1.1.5.1), and where stock projections are given in support of management advice (e.g. Anon 2004, Figure 3), there is no indication of uncertainty in those projections (see also indicator 1.1.5.5). The advice given to stakeholders on alternative management arrangements to halt the decline in stock levels in the Northern Zone does not include any quantitative evaluation of uncertainties in advice (Anon 2005). This indicator is given a score of 60 based on there being at least a qualitative statement of uncertainty about the causes of the decline in stock status in the Northern Zone, e.g. “there is currently a resource sustainability problem in

the northern zone and this has most likely been caused by a significant increase in the efficiency and effective effort of the fleet” (Anon 2005, page 6).

Corrective action

In all future advice by management to RLIAC, the Minister, and stakeholders, it should become a routine feature that management advice include not only “best estimates” of stock status and forecast effects of management arrangements, but also provide a clear indication of major uncertainties in those assessments and projections. This should not cause problems for maintaining stock status provided precautionary approaches to uncertainty are also built into decision rules (see also Corrective action to indicator 1.1.4.4).

1.1.5.4 **The assessment evaluates current stock status relative to reference points.**

60 Scoring Guidepost

Stock status relative to reference points is assessed empirically

80 Scoring Guidepost

The assessment model evaluates stock status relative to the reference points.

100 Scoring Guidepost

The assessment provides a robust measure of the probability of exceeding reference points.

Score 85

Stock status relative to reference points is shown for empirical spawning stock indices (Caputi et al. 2004). Where assessment models have been used, the probability of the stock exceeding reference points has been calculated (Hall and Chubb 2001). As noted, this assessment has not been updated for some time. This indicator therefore scores slightly above the 80 scoring guideline.

1.1.5.5 **The assessment includes a quantitative evaluation of the consequences of current harvest strategies.**

60 Scoring Guidepost

- The assessment forecasts the consequences of current harvest strategies for the stock.
- There is moderate confidence in the robustness of the advice.

80 Scoring Guidepost

- The assessment includes a robust forecast of the consequences of current harvest strategies.
- There is a high degree of confidence in the adequacy of the harvest evaluation.

100 Scoring Guidepost

- The assessment includes the consequences of current harvest strategies, forecasts future consequences of these and evaluates stock trajectories under decision rules.
- There is a very high degree of confidence in the adequacy of the harvest evaluation for a robust assessment.

Score 65

Annual assessments have generally included catch forecasts (based on puerulus settlement rates) but not stock level forecasts (because these would require an assessment model). However concerns arose during 2004 about stock levels in the Northern Zone of the fishery, and information was provided to stakeholders concerning a range of possible management responses (Anon 2004). This information included stock projections under 3 levels of effort reduction (Figure 3 in Anon 2004). The basis for these stock projections is very inadequately described in the report (there is no technical reference and only mention of use of “recognised modelling techniques”). The model used for the projections appears to be an update of the Hall and Chubb model, but as already referred to in the discussion of indicator 1.1.5.1, this model clearly does not fit recent trends in the data. Figure 3 is misleading in that it brings together an empirical time series (the fishery dependent spawning stock index) with model projections, and with no indication of uncertainty. This is a very inadequate basis on which to formulate significant changes to management of the fishery. As a result, this indicator scores well below the 80 scoring guideline.

Corrective action

This Corrective Action is directly inked to the corrective action for indicator 1.1.5.1 and the review currently underway by Dr. Norm Hall (Murdoch University).

The results from both of these efforts (work by Dr. Hall and work to address the Corrective Action under 1.1.5.1) are to be used as the basis for stock projections under current and proposed management arrangements to assess the probability of the stock remaining above agreed reference levels. Where the assessment can not reconcile contradictory trends in different time series of data, undertake sensitivity tests to these uncertainties in assessing consequences of future harvest strategies.

1.1.6 The stock is at or above appropriate reference levels.

1.1.6.1 The stock is at or above appropriate reference levels.

60 Scoring Guidepost

Assessments show the stock is likely above the limit reference point.

80 Scoring Guidepost

Assessments show the stock is likely above the target reference point.

100 Scoring Guidepost

Assessments show the stock is very likely above the target reference point most of the time in recent years.

Score 95

Spawning stock indicators show that the stock is currently above the 1980 reference level (and has been for several years). This indicator scores slightly below the 100 level due to some of the uncertainties in the assessment of stock status discussed under other indicators.

1.2 (MSC Criterion 2) Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.

1.2.1 When the stock is below the target point, there are measures to rebuild the stock specified and implemented for recovery and rebuilding of the stock.

60 Scoring Guidepost

Appropriate rebuilding measures through reduction in exploitation exist and are being implemented. Rebuilding measures other than reduction in exploitation are being considered. Measures are implemented even if they have not been tested. Fishing mortality is further reduced if the stock is below the limit reference point.

80 Scoring Guidepost

Appropriate rebuilding measures are being implemented to promote recovery within reasonable time frames. Measures have been tested and can be shown to be rebuilding the stock. Target fishing mortality is nearly zero if the stock is below the limit reference point.

100 Scoring Guidepost

Appropriate rebuilding measures are being implemented to promote recovery as quickly as is possible. Additional measures are being implemented to prevent problems in the future. Total fishing mortality is nearly zero if the stock is below the limit reference point.

Not assessed as criterion does not apply.

1.3 (MSC Criterion 3) Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

1.3.1. The size/sex/genetic structure of the stock is monitored to detect significant impairment of reproductive capacity.

60 Scoring Guidepost

- Population size/sex structure is based on some sampling and verification.

- Some information on stock spatial structure is available.

80 Scoring Guidepost

- Population size/sex structure is based on adequate sampling and verification.
- The spatial structure of the stock is reasonably well understood.

100 Scoring Guidepost

- Population size/sex structure is well estimated with only insignificant errors.
- Genetic studies of the stock in relation to spatial structure have been undertaken.

Score 90

Population size/sex structure is well estimated via a comprehensive at sea catch monitoring program covering about 30% of the fleet. Some genetic studies of stock structure have been undertaken and suggest a single genetic stock. The long larval live in a well mixed oceanic system is assumed to be responsible for the lack of local, genetically distinct stocks, though different resource trends between the northern and southern zones suggest some spatial structuring. This indicator therefore scores between the 80 and 100 levels.

1.3.2 Information from stock assessment indicates no fishery-induced changes in the size/sex/genetic structure that would have significantly impaired reproductive capacity.

60 Scoring Guidepost

Any fishery-induced trends in recruitment or spawning stock levels have not been shown to be due to changes in the size/sex/genetic composition of the stock.

80 Scoring Guidepost

There are likely no downward fishery-induced trends in reproductive capacity on local stocks or genetically monitored stocks due to changes in the size/sex/genetic structure.

100 Scoring Guidepost

There is a high degree of confidence that there are no downward fishery-induced trends in reproductive capacity on local stocks or genetically identified stocks due to changes in the size/sex/genetic structure.

Score 80

While the stock has fluctuated significantly over many years, there are no long term downward trends in abundance apparent and none that can be attributed to changes in the size/sex/genetic structure of the population. This indicator therefore scores at the 80 level.

Principle 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends

2.1 (MSC Criterion 1) The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.

2.1.1 There is adequate knowledge of the ecosystem relevant to the distribution, life history strategy and fishery for the target species.

2.1.1.1. The nature and distribution of habitats relevant to the fishing operations is known.

60 Scoring Guidepost

- Some limited information on habitats exists in specific areas of the fishery,
- The distribution of fishing operations is broadly mapped.

80 Scoring Guidepost

- The nature and distribution of the most significant habitats where the fishery operates have been mapped using an agreed and known classification system.
- The detailed distribution of fishing operations in space and time is regularly monitored and reported in a format that does not risk proprietary and confidential information.

100 Scoring Guidepost

- The nature and the distribution of all habitats relevant to the fishing operations are known in detail, and mapped based on a known and agreed biophysical classification system as well as recent information.
- The nature and distribution of all fishing operations are known in fine-scale detail, and regularly reported in a format that does not risk proprietary and confidential information.

Score 80

The detail of the habitats where the fishery operates is known for the Abrolhos region (Chubb et al. 2002, Webster et al. 2002), and there are various local-scale studies that have mapped habitats in some specific inshore areas where the fishery operates (e.g. Phillips et al. recent papers). However, the deeper waters, and much of the remaining inshore waters have not been mapped in any detail across the fishery. It has been assumed that the deep-water areas are probably not as topographically complex as the inshore areas, and some areas may be reasonably understood from analysis of existing information held by individual fishers derived from acoustic data captured on their fishing vessels. However, recent studies by the Australian Institute of Marine Sciences may suggest otherwise. Also, research projects (the FRDC project and the CSIRO/SRFME project) that include aspects of habitat mapping are

underway in selected areas, and these activities may be extended to the others areas in the fishery in due course (January 2005 FRDC progress report).

The details of fishing operations are recorded in 1-degree blocks through compulsory fisher returns, and some additional detail is recorded voluntarily by about 30-38% of the fishers in 10-minute blocks on a daily basis. Together with gear control, this provides sufficient detail to enable the impacts of the fishery to be determined at a broad scale, and is adequate to meet the MSC 80 standard for fisheries of this type.

The assessment team has been given the impression through the interviewing process that the mapping research for deepwater habitats will continue, and current projects implemented to map habitats both within marine parks and in other inshore waters will continue to provide an increasing knowledge base on habitat distribution, particularly in B and C zones.

2.1.1.2 Information on non-target species affected by the fishery, including incidental mortality, is known.

60 Scoring Guidepost

The main non-target species in the fishery have been identified, and trends in abundance have been assessed.

80 Scoring Guidepost

- The main non-target species affected by the fishery are known from past or current research, and information is available regarding their distribution, abundance and population status.
- The data on bycatch and incidental mortalities of non-target species are routinely collected, synthesised and assessed by fishery managers.
- Data and assessments about the effects of fishing on non-target species are made available for public review.

100 Scoring Guidepost

- Detailed information is available on the main non-target species affected by the fishery, including their distribution, abundance, population status, ecology, and conservation status.
- The data on non-target species affected by the fishery are collected and analyzed in detail annually, including species, size, age, and sex composition where appropriate.

Score 85

The main non-target species that are, or could be retained as by-product from this fishery appear to be octopus (*Octopus tetricus*, and occasionally *O. ornatus*), deep-sea crabs (champagne (spiny) crabs *Hypothalassia acerba*, crystal crabs (*Chaceon sp.*), snow crabs, and king crabs), and a variety of commercially valuable finfish species. Other species (such as sea lions, sea horses, wrasses, manta rays, moray eels, and Port Jackson sharks) may also be taken as bycatch in pots, but these are not retained. Species known to occasionally suffer a

direct interaction with fishery gear, although not taken in pots, include leatherback turtles, whales, and dolphins – the protected species are assessed in criterion 2.2.

Octopus are the main by-catch, and their population abundance is monitored as part of this fishery. Octopus are also the target of a separate fishery. Stocks appear to be in a healthy condition (WA Fisheries ESD report No. 4).

Deep sea crabs occur in deeper waters off the west coast. Occasional catches are made of champagne crabs - but they mostly occur outside the range that western rock lobsters are fished. By-catches of crystal crabs, which are more highly priced and are more vulnerable to overfishing, appear to be rare. This crab species only occurs deeper than around 400m, to about 1000m depth. Both crabs are now the target of a small managed fishery and controls are being developed to place a small catch limit on WRL boats. There has been a recent research project on the biology and fishery for these crabs (Smith et al., 2004, FRDC projects).

There is current concern about the exploitation status of the dusky whaler shark *Carcharinus obscurus* off Western Australia. Juveniles of these sharks are targeted by a managed gillnet and longline fishery, but the stock cannot withstand additional exploitation of adults. Adult sharks were formerly taken on hooks set on a short line attached to WRL traps but this practice has now been prohibited to protect the population of this shark.

Since 1990 there have been 23 entanglements of commercial lobster fishing gear with humpback whales in WA waters (WRLF Whale Code of Practice, 2005). Estimates of reporting rate of whale entanglement are as low as 3% (evidence presented to the 2005 ERA Experts workshop). However, this level of entanglement, even allowing for a low reporting rate, is considered unlikely to significantly reduce the recovery rate of humpback populations.

The evidence of sea lion drowning in pots in the fishery suggests that up to about 20 juveniles may be drowned each year in the fishery. The total pup production is estimated to be about 170 per breeding event (about each 17 months) in the Abrolhos and mid-west region of the fishery (2005 ERA Workbook). The natural mortality rate of seals between pup and sexual maturity (often 5 or more years) is high (70% in the New Zealand fur seal). In the Australian sea lion it is unclear how critical the impact is of the additional level of mortality imposed by the bycatch in this fishery, but clearly the bycatch of 20 to 30 pups per breeding event is likely to have a major impact on the island populations of this region. Here the availability of knowledge and information is assessed; the ecological impacts of this level of bycatch is assessed in Criterion 2.2 below.

The fishery has a persistent but low level of interaction with leatherback turtles. A small number of turtles are reported as becoming entangled in fishing gear, or struck by fishing vessels. Leatherback turtles are protected in WA, and are listed as Vulnerable under the Commonwealth EPBC Act. The consequences of this level of interaction are unclear, although are unlikely to be major.

Moray eels are abundant as bycatch, but they are not recorded and are usually returned to the water alive. The consequences of this are unknown, and the risks are considered to be low (2005 ERA Workbook).

Sea horses are protected under the Commonwealth EPBC Act. Sea horses will apparently attach to lobster pots and ropes, and may be killed when the gear is retrieved. The level of mortality imposed, and the population consequences are both unknown. However, the risk is considered to be low (2005 ERA Workbook).

Dusky whaler sharks are considered to be at risk from bait bands that may be occasionally discarded (with bait boxes) at sea by fishing vessels. The populations of this species are considered to be vulnerable to overfishing as a result of the commercial shark fishery, the illegal shark finning operations and the impacts of additional sources of mortality such as the bait bands (2005 ERA Workbook).

Most of this information is made available for stakeholder review and assessment through the ERA process.

This information on bycatch species is adequate to permit assessment of the impacts of this fishery on such species. The additional data collection designed and implemented as a result of the original MSC assessment in 2000 indicates the fishery scores slightly above 80 and therefore receives a score of 85.

2.1.1.3 The trophic relationships of the target species within the food web are known.

60 Scoring Guidepost

Key prey, predators and competitors with the target species are known, and research is being designed to study foodwebs in the region.

80 Scoring Guidepost

- The basic structure of the regional foodwebs has been determined.
- Information is available on the position and general importance of the target species in the environment at key life stages.

100 Scoring Guidepost

Quantitative information is available on the position and importance of the target species within the food web at key life stages, derived from empirical studies.

Score 85

The key prey, predators and competitors of lobsters, and the basic structure of the regional food webs in inshore waters have been determined, based on research in shallow coastal waters conducted over about 40 years. Considerable early research on food and feeding behaviour of the lobster in shallow water was conducted by CSIRO. Further research in shallow water is continuing (under CSIRO/SRFME projects). However, the food web

relationships in deeper waters are not well understood, and a research project is underway to assemble better information on lobster diet in these waters (FRDC/DoF project).

There is quantitative information on the position and importance of the target species within the food web for the younger life stages resident in shallow waters but not in deep waters, and not in systems that are unfished.

The main environmental forcing features, such as the dominance of the Leeuwin current in dynamics of the coastal systems, and seasonal dynamics of the lobster are broadly understood, and are adequate to enable a broad scale interpretation of trophic relationships to be established.

This trophic information is limited in spatial scale, and there is only limited detail about predators of the lobster, but this conforms to the MSC 80 level standard and exceeds it minimally for a fishery of this type.

2.1.1.4 **There is information on the potential for the ecosystem to recover from fishery related impacts.**

60 Scoring Guidepost

Key elements of the functioning of the ecosystem, including natural forcing factors, relevant to the fishery have been identified and ecosystem research is ongoing.

80 Scoring Guidepost

Based on the outcomes of research projects, models and estimates of resilience and recovery potential of the main dependent species are being developed to take account of impacts of the fishery, important aspects of ecosystem dynamics, environmental uncertainty and factors external to the fishery.

100 Scoring Guidepost

- Detailed information is available on the resilience of the benthic ecosystem, and the potential for affected species and communities to recover from fishery related impacts.
- The information used to establish resilience should be as robust as information that could be derived from empirical studies comparing fished and unfished areas.

Score 75

Key elements of the functioning of the ecosystem where the fishery operates have been broadly identified for shallow water habitats, and there are shallow water research projects (CSIRO/SRFME) underway to further address aspects of ecosystem function in habitats where lobsters live in the central west (Jurien) area of the fishery. However, there is only limited knowledge of deep-water habitats that support the older lobsters, and limited knowledge of species that may be ecologically dependent on lobsters.

There is no list or group of ecologically dependent species, and although there is an extensive list of dietary types and species, the only species assumed to be ecologically dependent by the

fishery management system appear to be those taken as by-product species. No justification has been provided for this implicit set of assertions. The resilience of any actually ecologically dependent species to the impacts of fishing cannot therefore be assessed.

There is evidence that by-product species are not being overexploited (above), but no relevant information or analysis has been provided for assessment of other species.

Research projects are underway in both deep and shallow waters, but it is not yet clear if they have been designed to address this issue of resilience and recovery from the effects of fishing. The research plan that was proposed by the Eco SRG (Ecological Scientific Reference Group) has not been developed, and it is unclear if this will be a continuing initiative, if it will address this issue, or if the plan will be able to be implemented into effective research activities.

At the time of assessment, other than for by-product species, no evidence was provided relevant to the issue of the resilience or potential for recovery from fishing impacts of species that may be ecologically dependent on lobsters. There are no research programs in place that will provide such data and information, and this therefore does not meet the MSC 80 standard for a fishery of this type.

Corrective Action

To improve the score of this indicator, the client must propose an action plan that will improve performance of the management to be equivalent to the 80 Scoring Guidepost – “Based on the outcomes of research projects, models and estimates of resilience and recovery potential of the main dependent species are being developed to take account of impacts of the fishery, important aspects of ecosystem dynamics, environmental uncertainty and factors external to the fishery.”

The client must ensure that models and estimates of resilience and recovery potential of the main dependent species in the fishery are being developed. In addition, the client must ensure that the models developed will take account of impacts from the fishery and the uncertainty surrounding the models and data.

The CB will require evidence that a plan (of research) to develop these models is developed. The research plan should outline strategies that will be used to determine what impacts, if any, are occurring, and the extent of the impacts. Strategies could include, but are not limited to, comparing impacts of the fishery using areas that are unfished with suitable/comparable fished areas at a scale that is appropriate and robust enough to understand impacts from fishing across the entire fishery. Regardless of the strategy or strategies chosen, the research plan should identify and provide evidence for the studies being scientifically robust.

The client will be required to show that the research plan is either developed with input from fully independent experts with demonstrated world-class credentials and research experience in ecological impacts of fishing (such as those on the ECO-SRG) or that it is properly reviewed by a set of independent experts of equal qualification. Additionally, the client must consult stakeholders (individuals and/or organizations in the commercial fishing industry,

recreational fishing industry, and conservation groups) in the design and development of the plan.

The client is also required to show implementation of the research plan, as well as at least 1 year of data collection and analysis before the end of 2010.

This Condition is a follow on to Conditions from the initial assessment and is required to be fully completed in the time frame of this certification.

2.1.2 There is adequate knowledge about the effects of fishing on habitats and species in the areas of the fishery.

2.1.2.1 The trophic linkages and interactions between the non-target species and the target species are known.

60 Scoring Guidepost

- The target species prey, predators and competitors are known in the main areas of the fishery.
- Changes due to fishing on the prey, predators, and competitors of the target species are generally understood.

80 Scoring Guidepost

- The potential trophic impacts to the prey, predators, and competitors of the target species from fishing on all life stages of the target species have been assessed.
- The information used to establish trophic impacts is as robust as that derived from studies comparing fished and unfished areas.

100 Scoring Guidepost

- The trophic impacts between the target species and the main non-target species have been determined using quantitative information on the target species and the main non-target species.
- The information used to establish trophic changes is as robust as that derived from studies comparing fished and unfished areas.

Score 75

The main bycatch species are reasonably well known (see 2.1.1.2 above), and the fishery-induced mortality is used as the basis to assess risks to their populations. This was the basis of information and evidence used in the 2001 ERA to assess the risks posed by the fishery to bycatch species (other than the protected or endangered species which are assessed under Criterion 2 below). It also is the basis that was used to assess risks in the (yet to be completed) 2005 ERA process. However, the other ecologically related and non-target species (those not retained as by-product) have received little attention in terms of trophic impacts from the fishery. These species include various species of finfish, sea horses, Port Jackson sharks, wrasses and potentially invertebrates, as well as the range of lobster prey and predators.

No evidence of trophic impacts of the fishery was presented for this assessment based on data and information that is as robust as knowledge derived from comparisons of fished vs. unfished areas.

This lack of evidence and the lack of credible research projects to begin to develop such information is not consistent with the MSC 80 standard for a fishery of this type.

Corrective Action

Same as for 2.1.1.4 above. In addition, the research plan developed and studies implemented must include studies that assess the impacts of the fishery on trophic linkages between the lobsters and their predators and prey at the lobsters main life stages. The strategies for assessment of impact must meet the standard of evidence that is at least equal to the quality and robustness of evidence derived from appropriate and adequate comparisons of (space and time) areas that are unfished with areas that are fished.

2.1.2.2 There is adequate knowledge of the impacts of fishing gear on the habitat.

60 Scoring Guidepost

The main impacts of gear use on habitat have been identified including type, extent and location.

80 Scoring Guidepost

- Impacts of gear use on the main habitat types have been identified, including type, extent, location and frequency.
- Use of fishing gear in sensitive habitats is minimal.

100 Scoring Guidepost

- The impacts of gear on habitats have been quantified, including details of any irreversible changes.
- Fishing gear is not used in or near sensitive habitats, and physical disturbance to any habitat has been shown to be minimal.

Score 95

Fishing gear appears to be not used intensively in any habitats that are highly sensitive and vulnerable to the physical impacts of gear use (such as dragging of pots, or entanglement with lines, floats etc). However, the fishery does operate in and around coral reef habitats in the Abrolhos area, and while pots appear to be not be set directly on high risk coral patches or reefs, they are set in close proximity to high risk coral systems. They are also set on seagrass beds and on coral-algal assemblages considered to be of moderate biological risk from damage by pot fishing (pot densities are estimated up to 40 potlifts per hectare per fishing season in large areas classified as of moderate biological risk) (Webster et al. 2002). There

therefore appears to be a risk of moderate levels of environmental damage from fishing in the Abrolhos area.

The impact of fishing gear on limestone and granite reefs, seagrass and sand habitat that make up a majority of the remaining habitats in the fishery was assessed by the 2001 ERA process as a low risk, although it was acknowledged that this was not strongly supported by quantitative field studies of impact. The information base is thus not substantial for assessing the physical impacts of the fishery in these habitats (other than coral reefs), but it is determined that for all of those habitat types other than seagrass beds and coral-macroalgal assemblages, the risk is likely to be low and hence the need for information is limited. The research studies to be undertaken in shallow waters (the CSIRO/SRFME projects) as part of the Strategic Research Plan (Condition 2.1) may be developed to address amongst others the impacts of fishing on seagrass beds, including the physical impacts of pot deployment and rates of recovery of any physical damage. However, the evidence presented for assessment indicates that the directions of this research as yet remain uncertain.

2.1.3 There is adequate knowledge about the risks to the ecosystems, habitats and species that are posed by bait, bait bands or lost gear.

2.1.3.1 Use of bait and loss of bait bands and fishing gear during fishing operations is known and reported, and is within acceptable levels of impact.

60 Scoring Guidepost

- Use of bait and loss of gear across the fishery can be documented from fishery and sales data.
- The risks and impacts of bait use and loss of gear have been assessed and there is no evidence of significant detrimental ecological impacts.

80 Scoring Guidepost

- The type, quantity and location of bait, bait bands and related packaging material, and gear lost during fishing operations is monitored, assessed and reported regularly.
- Risks from bait use (including loss of bait packaging) and gear loss have been determined through the ERA process (see 2.1.2.2 above), and are generally maintained within acceptable levels

100 Scoring Guidepost

- There is detailed knowledge of the type, quantity and location of bait used in all areas of the fishery.
- The bait bands, bait packaging, and gear lost at sea are monitored and independently verified through a fishery-wide waste-management audit conducted using vessel level data.
- There is a comprehensive gear reconciliation program, which is designed to track and validate the life-cycle fate of all fishing gear used in the fishery.

- The ecological impacts of all forms of bait used and bait bands and gear lost during fishing operations are monitored and always maintained within acceptable levels across the full range of the fishery.

Score 75

There is detailed knowledge of the type, quantity and location of bait used in all areas of the fishery. This information is obtained from daily fishing logbook returns that are completed by 30 to 38% of all commercial fishers and from information provided by processors.

The type, quantity and location of bait, bait bands and related packaging material, and gear lost during fishing operations is monitored and assessed using vessel-level data. Information is obtained from daily fishing log book returns that are completed by 30 to 38% of all commercial fishers and the monthly at-sea commercial catch monitoring programme.

About 15% of the pots used in this fishery are lost (presumably at sea) each year. The plastic components of the pots are an important and persistent visual component of the beach litter across the fishery region. The wooden components may be less persistent in the environment, and probably create less of an environmental hazard.

The commercial fishery has a Code of Practice regarding the handling of bait and bait packaging material. Bins for the disposal of bait packaging, etc are provided at each rock lobster port. A beach clean up survey conducted in the Perth area indicates that there has been a significant decline in fishery-sourced rubbish between 1992 and 2002 (Poynton et al. 2002 — unpublished report from the Friends of Marmion Marine Park/ CALM survey of beach litter in Marmion Marine Park comparing litter in 1985, 1992, and in 2002).

An internal report on the bait handling procedures submitted to the assessment team (Monitoring of Bait handling code of practice; Draft March 2005) indicates that there is a high level of compliance with the required procedures, although not full compliance. The report does not indicate the basis for sampling of the vessels to be surveyed, nor the procedures adopted to ensure the independence and robustness of the data.

Information from research programs conducted by the DoF indicates that once the bait has been used or lost from a trap, escapement of rock lobsters is high. Traps are therefore not very effective in retaining lobsters over periods longer than 5 days once the bait is depleted. Rock lobsters have been shown to be able to survive without food for months, which would give them ample opportunity to escape from discarded or lost 'ghost fishing' traps. In addition, traps are fitted with escape gaps which allow smaller animals to escape from 'ghost fishing' pots.

The risks from bait and bait packaging bands have been assessed in the 2001 and 2005 ERA workshops, and determined to be low. However, while there is knowledge of the amounts and types of bait, and the use of bait bands across the fishery, there are few reliable data on

impacts that could be used to make a reliable assessment of the level of risk posed by bait bands. Some specific concerns have been raised by stakeholders about impacts of bait bands on dusky whaler sharks.

While there is a basic system for monitoring the use and loss of bait, bait bands and other fishing equipment, there are no concise evaluation, summary and reporting systems that regularly review and assess the issues surrounding bait use and bait bands in this fishery for reporting to stakeholders. Also, although there has been one assessment of beach litter possibly sourced from the fishery, there has been no systematic assessment of the effectiveness of the Code of Practice, and more broadly, only very limited ecological evidence is available to assess the impacts of bait bands lost or discarded to the ocean from the fishery.

Corrective Action

The client must present evidence to verify the fishery's compliance with the Bait Handling Code of Practice.

Evidence should be presented in the form of a scientifically defensible sampling scheme and related analyses that identifies how these materials are treated at sea, and quantitatively and statistically evaluates the number and mass of materials taken onto and off fishing vessels, in various seasons and regions of the fishery.

2.1.4 Levels of acceptable impact are set and objectives established to address and restrain any significant negative impacts of the fishery on the ecosystem to within the acceptable levels of impact.

2.1.4.1 The impacts of the fishery on ecosystem structure, function, biological diversity, productivity, and habitat structure are within acceptable levels of impact and there has been an assessment of risks.

60 Scoring Guidepost

- Levels of acceptable impacts for the main non-target species and habitats in the fishery have been estimated.
- The main impacts of the fishery on the ecosystem from the removal of target stocks and non-target species are within acceptable levels of risk.

80 Scoring Guidepost

- Levels of impacts (biological reference points) for key aspects of the ecosystem within main fishing areas have been estimated to be within acceptable levels.
- The information used to establish acceptable levels of impact should be as robust as that derived from empirical studies comparing fished and unfished areas.
- There is a comprehensive and publicly reviewed and accepted ERA assessing the effects of the fishery on the ecosystem that shows there are no areas of high risk.
- Research is underway to study impacts identified as medium risk and to rectify the main gaps in knowledge identified in the ERA.

100 Scoring Guidepost

- The effects of the fishery (removal of target and non-target species) on the ecosystem have been quantified in all areas where the fishery operates using studies comparing fished and unfished areas, and impacts are found to be maintained within acceptable levels.
- Risk assignments are reassessed on a regular basis.

Score 70

There have been two assessments of the ecological risks from the fishery, the 2001 and 2005 workshops and related reports. The 2001 ERA and its reports were not considered adequate by the SCS audit team, but the requirement to conduct a fully defensible and scientific ERA was relaxed on the condition that a number of key issues that were poorly addressed by the 2001 ERA were nonetheless fully addressed with the context of the following EMS. Some of these matters are still outstanding and have not been resolved.

The 2005 ERA process has not been completed, but the aspects that have been submitted for assessment here are clearly inadequate, and do not meet the MSC 80 standard for assessing the ecological risks of this fishery. Major weaknesses include the failure to implement a robust and peer reviewed scientific ERA, the lack of a precautionary approach to gaps in knowledge, and the lack of involvement of a relevant range of ecological expertise and stakeholders, and the failure to provide the ERA with relevant and available data/knowledge pertinent to assessing the risks of the fishery.

There is as yet no systematically derived and comprehensive research plan for the fishery that deals effectively with the ecological impact issues. This was a requirement of previous conditions of MSC certification of this fishery, but as yet this has not been completed to an acceptable standard.

The current situation in the fishery is that the levels of acceptable impact have been determined for the two main non-target species (octopus and deep-water crabs), and these have been set in the context of production impacts not impacts on the conservation of the populations.

The levels of acceptable impact on habitats have not been estimated, although it is clear that the actual level of impact on at least the most sensitive habitat potentially impacted by the fishery (coral reefs) has been assessed, and management measures are suitably in place to avoid unacceptable levels of impact.

No substantive evidence has been presented for assessment about the impacts of the fishery on ecosystem structure, function, diversity, productivity or habitats caused by the removal of target stocks. There is no acceptable research plan in place to determine this, and there are no acceptable levels of risk established either in support of, or as a result of, a credible ERA process that relate to a number of these matters.

Evidence provided for assessment indicates that the research projects in shallow waters (CSIRO/SRFME) are not currently directed to assessment of the ecological impacts of fishing, although this may possibly be part of future research.

Corrective Action

A new Ecological Risk Assessment must be conducted by the client to a standard that meets the requirements identified by Dr. Mark Burgman in his 2005 review of ERA methods previously used in this fishery, which includes soliciting, receiving, and acting on advice from stakeholders, fishery managers, and the CB (Certification Body). This new ERA should be conducted within 4 years of the date of certification. The risks must be based on scientifically defensible evidence and inference about the possible hazards in the fishery, and moderate level risks, or hazards where there is insufficient information to determine risk, must be then used as the basis for an assessment of the impacts of the fishery across the full spatial scale of the fishery. The new ERA should at a minimum also cover all aspects of the 80 scoring guidepost for this indicator.

In addition, the research plan and implementation developed under 2.1.1.4 must integrate the information from the ERA.

2.1.4.2 Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction.

60 Scoring Guidepost

The management system includes some level of impact identification and avoidance/reduction in the main areas of the fishery.

80 Scoring Guidepost

- Management objectives and practices are designed to detect and reduce impacts, although they may not have been fully tested.
- The key impacts of the fishery that have been identified as posing a significant risk are mitigated on a precautionary basis using appropriate management tools (such as gear or deployment modifications, seasonal restrictions, size restrictions, closed areas, etc.).

100 Scoring Guidepost

Management objectives and strategies to detect and reduce impacts have been developed, tested and are deployed across the fishery.

Score 75

The fishery has a strong process for managing adverse impacts when they are detected and established as a matter of priority for action within the management system. This is well demonstrated through the matters of Sea Lion bycatch (assessed in Criterion 2.2), the commitments to assess and respond to management issues in the Abrolhos area, and the Code of Practice commitments to reduce entanglements of fishing gear with whales.

The system for identifying issues to be matters for concern and management response is the WRL Management System (WRL MS), and the related ERA/EMS system. While these two areas are well structured to detect issues, and to identify appropriate types of management responses, there is only limited evidence that these structures operate in an acceptable way.

The WRL MS contains three important committees (the WRL ESD Committee, the SLSRG, the EcoSRG) that should operate to support the system for detecting and managing impacts, including setting appropriate forms of objectives and mitigation strategies. Of these, only the SL SRG appears to be operating effectively, and even then it appears to be limited in its capacity to provide independent advice and support for mitigating Sea Lion bycatch to acceptable levels. The Eco SRG does not operate effectively—meetings are poorly organised, the outcomes do not properly address the TOR for the committee, the members do not reach agreement, and the organisational aspects are inadequate (agendas, papers, minutes and meeting reports are not timely).

The WRL ESD appears to have never met, or if it has, there have been no documented outcomes. Evidence provided to the assessment suggests that the RLIAC committee structure is under review, and that an alternative structure may be implemented.

The EMS system as it is identified for use in this fishery appears adequate to implement all the priorities that are developed in the ERA process if it functions fully and properly. The system described is a good system for structuring the projects, and for reporting procedures, although the process and the outcomes are not easily available to stakeholders.

The ERA is a serious weakness in this overall process. As assessed in 2.1.4.1, neither the 2001 or the 2005 ERA meet the MSC 80 standard in risk assessment, and this is a major weakness in the context of this Indicator.

If the risk assessment issues are addressed and if the WRL MS is improved to be an effective and operational system with regard to environment and ecological issues, the fishery would meet the standard of world's best practice for this Indicator.

Corrective Action

To meet the requirements of the performance indicator, the client must ensure that management performance meets the 80 scoring guidepost which states:

“Management objectives and practices are designed to detect and reduce impacts, although they may not have been fully tested.

The key impacts of the fishery that have been identified as posing a significant risk are mitigated on a precautionary basis using appropriate management tools (such as gear or deployment modifications, seasonal restrictions, size restrictions, closed areas, etc.)”

The system described for the operation of the WRL Management System, the EMS (Environmental Management System) and the ERA, through correspondence between the Department of Fisheries and SCS, suggests the entire management system would adequately

handle environmental factors if there was evidence that all parts of the system described in the WRL-MS and EMS were active and working. Fully implementing all the prescribed parts of the management system, or some other similar construct that meets the intent of this Condition, would be sufficient if it properly addresses the following key aspects:

- The management system should include a group, committee or set of groups or committees (previously identified to SCS as the WRL ESD Committee, the SL SRG, and the Eco SRG) that meet at least annually to discuss potential ecological risks from fishing and the management measures, if any, needed to address identified risks. The group(s), or committee(s), old or new, should have a published agenda and provide minutes and reports for public review.
- The groups(s) or committee(s) should publish reports at 6 monthly intervals, on the functioning of the EMS and progress toward meeting the stated EMS objectives for identifying risks and mitigating impacts.

2.2 (MSC Criterion 2) The fishery is conducted in a manner that does not threaten biological diversity (at the genetic, species or population levels) and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.

2.2.1 Fishing is conducted in a manner that does not have unacceptable impacts on protected, endangered, threatened, or icon species.

2.2.1.1 There is adequate information on the presence and populations of protected, endangered, threatened, or icon species.

60 Scoring Guidepost

There is a program in place to identify protected, threatened, endangered or icon species that may be affected by the fishery.

80 Scoring Guidepost

Protected, threatened, endangered or icon species likely to directly interact with the fishery have been identified, and their likely space and time interactions have been assessed.

100 Scoring Guidepost

There is a detailed knowledge of all populations of protected, endangered, threatened, or icon species that directly or indirectly interact with the fishery, including an assessment of critical habitats and the spatial and temporal interactions with the fishery.

Score 85

The main protected, endangered, threatened, or icon species that may interact with the fishery have been documented. These species are catalogued as part of the ERA process, and their likely space and time interactions assessed as part of the risk assessment process. The main species are sea lions, whales, dolphins, turtles, seabirds, and possibly seahorses. Other species of possible concern include sharks and manta rays.

The issues of possible interaction of these species are summarised in the data submitted to, and the reports of, the 2001 and 2005 ERA workshops. The results of the 2005 ERA are incomplete, but it seems likely that the information base is adequate to be able to make a qualitative assessment of the likely level of interaction with the fishery for most of these species.

On this question of the knowledge base of the distribution and possible places and times of interaction of any protected, endangered, threatened, or icon species with the fishery, performance is consistent with the MSC 80 standard.

2.2.1.2 There is adequate information about the interactions of the fishery with protected, endangered, threatened or icon species.

60 Scoring Guidepost

The main interactions directly related to the fishery are known.

80 Scoring Guidepost

Quantitative estimates have been made of the nature and extent of interactions for the main protected, threatened, endangered or icon species that directly interact with the fishery.

100 Scoring Guidepost

Impacts on all protected, endangered, threatened or icon species are regularly assessed, quantified, documented and publicly reported

Score 85

The interactions with identified protected, endangered, threatened or icon species is recorded in a voluntary logbook program completed by 30 to 38% of fishers. Currently, the main focus of this is to record the bycatch of sea lions. These data are summarised for use in the ERA workshop process.

The limitation of data and knowledge of direct interactions to the data contained in the voluntary logbook program is a significant problem in the fishery. Evidence has previously been provided that the logbook data is broadly consistent with data derived from the DoF commercial sampling program conducted for stock management purposes. However, this is largely anecdotal, and only provides some measure of support for the voluntary program data. For example, it is not clear if small species of importance (such as seahorses) are likely to be recorded in either of these programs.

The fishery performance is generally consistent with MSC standards for protected, endangered or threatened species, but more robust data and knowledge may become important for assessing risks as awareness of icon species increases.

Recommendation

The fishery should take a more systematic approach to identifying and documenting the interactions with protected, endangered, threatened or icon species that occur in the region of the fishery. This should include a program of fishery-independent validation of the voluntary logbook data, and the random extension of the logbook program to other vessels which do not normally participate in the logbook program. Additional tools such as vessel profiling procedures (comparisons between observed and non-observed bycatch rates) should be developed for application in this fishery to assess patterns of interactions with these species that could indicate systemic under-reporting problems.

2.2.1.3 The level of interaction of the fishery with protected, endangered, threatened or icon species that constitutes an unacceptable risk has been determined.

60 Scoring Guidepost

Acceptable limits and risks are set by state, national or international legislative requirements and interactions with the fishery appear to create no ecological threats to populations of the species concerned.

80 Scoring Guidepost

- Acceptable levels of interaction with protected, threatened, endangered or icon species have been set to avoid any important impacts that may affect the spatial distribution, reproductive success, population structure, or conservation status of these species, and critical interactions with the fishery have been determined.
- Levels of acceptable interaction and impacts have been determined through a robust peer reviewed scientific process, involving the relevant range of ecological expertise and stakeholders.
- The information used to determine levels of acceptable impact has been shown to be robust and/or precautionary.

100 Scoring Guidepost

The direct and indirect interactions of the fishery with any protected, endangered, threatened or icon species are determined and restrained to within acceptable levels to avoid any important impact at any time across the fishery.

Score 85

The most important risk of the fishery for protected, endangered, threatened or icon species currently appears to relate to the bycatch of Sea Lions. For other such species that may be affected by the fishery, the risk that the fishery may have unacceptable levels of impact on spatial distribution, reproductive success, population structure or conservation status appears to be low. However, to some extent this depends on the ERA process, and for some species the information base is somewhat limited. For example, stakeholders have raised concerns about the effects of the fishery (impact of bait bands) on one species of shark, but this issue remains to be assessed.

The level of acceptable bycatch of Sea Lions in the fishery has been set at zero by the SL SRG, and this has guided management responses to the issue. The information base for the zero bycatch target is limited, but a reasonably precautionary approach has been applied. This level has been reviewed in the 2005 ERA process, and considered to be appropriate.

There appear to be few other interactions of high or moderate risk between the fishery and protected, endangered, threatened or icon species, and so the level of unacceptable risk is implicitly set below the level of current interaction.

Overall, the combination of explicit and implicit levels of unacceptable risk that appear to have been set in the fishery appear to be consistent with the MSC 80 standard.

2.2.1.4 The impacts of the fishery on protected, endangered, threatened, or icon species do not exceed acceptable levels.

60 Scoring Guidepost

Studies in the fishery have examined fishery impacts on populations of protected, endangered, threatened or icon species and mitigation strategies are in place and being developed where appropriate.

80 Scoring Guidepost

Regular assessment of the conservation status and the impacts of the fishery on each protected, endangered, threatened or icon species demonstrates that impacts are generally maintained within acceptable levels.

100 Scoring Guidepost

- The conservation status and impacts of the fishery on all protected, endangered, threatened or icon species are regularly assessed, quantified, documented and publicly reported through independent external expert review using empirical data.
- Impacts are maintained within the acceptable levels in all areas where the fishery operates.

Score 75

The impacts of the fishery on protected, endangered, threatened, or icon species generally, except for Sea Lions, appear to be maintained within acceptable levels. The evidence for this is limited, but risks and actual impacts generally appear to be low for most of the protected, endangered, threatened, or icon species that are known to occur in the same area as the fishery operates. The EMS provides for regular review and assessment of the risk assignments, although there is no systematic process for routinely providing this information to stakeholders and seeking their input. Evidence submitted to the assessment indicates that the key forum for this (the WRL ESD committee) has not been activated, and its role is being reviewed with a view to disbanding it.

The bycatch of Sea Lions currently exceeds the zero target level, and so the impacts of the fishery on the sea lion populations of the southern area of Zone B and the northern area of Zone C (centred around Jurien) currently exceeds the acceptable level.

For the fishery to attain the 80 level for this Indicator, Sea Lion bycatch must routinely be monitored in a robust surveillance system, and the bycatch level must normally be found to be zero based on monitoring data.

Corrective Action

SLED Implementation and Verification

SLEDs must be introduced into the mandatory zone in the 2006/07 fishing season. The mandatory zone is the area shown on Figure 1 in the document 'Additional issues for SRG discussion', presented to the SL SRG meeting in September 2005. The SLEDs must be used for all WRL fishing within the mandatory zone.

The use and effectiveness of the SLEDs in the mandatory zone must be monitored and verified commencing with the 06/07 fishing season. The bycatch of Sea Lions must be monitored using a system that is sufficient to provide scientifically relevant results. It is clear that a full monitoring system across the entire mandatory zone may be too costly to be approved and implemented, especially without relevant evidence that it is needed. As a result, it is necessary that additional discussions occur between all groups (conservation stakeholders, managers, scientists) to determine the best course of action to monitor the effectiveness of SLEDs. WAFIC must bring together all interested parties to discuss this issue, and within 6 months of the certification of the fishery provide a plan of action to SCS for monitoring the effectiveness of SLEDs. WAFIC is also required to implement the proposed monitoring system before the next fishing season 2006/2007.

2.2.2 Objectives are established and mitigation is implemented to address and restrain impacts of the fishery on protected, endangered, threatened or icon species to within acceptable minimum levels.

2.2.2.1 Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction to avoid or mitigate impacts of the fishery.

60 Scoring Guidepost

- Specific interactions have been identified, and some management systems are in place to reduce impacts although they may not have been fully tested.
- Studies across the fishery are examining the fishery impacts on populations of the listed, protected and icon species, and mitigation strategies are being developed where appropriate

80 Scoring Guidepost

- The key impacts of the fishery have been established through a robust scientific process and agreed through public consultation.
- The significant risks are mitigated on a precautionary basis using appropriate management tools (such as gear or deployment modifications, seasonal restrictions, size restrictions,

closed areas, etc.) to adequately protect the main populations of protected, endangered, threatened or icon species within the main fishing areas.

100 Scoring Guidepost

Management objectives and fishing practices to detect and reduce impacts have been developed, tested and are fully deployed across the fishery. These objectives and practices are designed to adequately protect populations across the full range of the fishery, and are based on the use of closed areas to provide highly precautionary levels of protection, or on equivalently robust and precautionary approaches.

The effectiveness of mitigation strategies in restraining the impacts of the fishery is regularly reviewed through independent external expert review.

Score 75

Management objectives and fishing practices to detect and reduce impacts are developed through the ERA and SRG processes that have been established for the fishery and in the EMS that has been developed.

Mitigation strategies have been developed and implemented in relation to the risks of pot impacts on the hard coral habitats of the Abrolhos Islands region.

The WRL Council has recently developed a Code of Practice, in conjunction with DCLM, to reduce the rate of entanglement of fishing gear with whales (mainly Humpbacks and Southern Right whales). The data on the rate of entanglements is limited, and the Code of Practice will provide a better process for accurately recording and reporting such entanglements. The fishery is required to take all practical steps to minimise the interactions with whales, but the presently presumed rate of entanglement is not likely to cause a significant impact on the whale populations.

The bycatch of Sea Lions exceeds the zero target level, and so the impacts of the fishery on the sea lion populations of the southern area of Zone B and the northern area of Zone C (centred around Jurien) currently exceeds the acceptable level.

The use of Sea Lion Excluder Devices (SLEDs – a structural modification to the pots) to mitigate the bycatch of Sea Lions were re-investigated and found to be effective. The expectation is that SLEDs will be made mandatory for all fishing commencing in the 06/07 fishing season in an area of Zone B and Zone C in waters shallower than 20m depth where all previously recorded bycatch of Sea Lions has occurred (to be known as the mandatory area).

While the evidence indicates that the SLEDs are likely to be important mitigation devices, their effectiveness in the fishery in routine day-to-day use, under variable conditions and with different proximity to sea lion rookeries still needs to be verified. At this time, there is no evidence that the effectiveness of the SLEDs will be verified through detailed monitoring of actual level of bycatch in the area in which the use of SLEDs is to be mandatory.

Corrective Action

Same as for Indicator 2.2.1.4.

2.3 (MSC Criterion 3) Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

2.3.1 There are tested measures in place that allow for the rebuilding of affected populations.

2.3.1.1 Proposed management measures to modify fishery practices in response to the identification of unacceptable ecological impacts of the fishery have been tested.

60 Scoring Guidepost

A mechanism has been set for the modification of fishing practices in light of the identification of unacceptable impacts on ecosystems and dependent species.

80 Scoring Guidepost

For fishery-induced impacts identified as significant, management measures should be developed to successfully modify fishery practices in light of the identification of unacceptable ecological impacts of stock depletion on dependent species, habitats or ecosystems.

Strategies for mitigating impacts and rebuilding populations of affected species have been determined through a robust peer reviewed scientific process, involving the relevant range of ecological expertise and stakeholders.

100 Scoring Guidepost

There are procedures in place in the management system that are providing a highly timely and demonstrably effective modification of fishery practices in light of the identification of any unacceptable ecological impacts.

Score 85

This Indicator applies to populations of non-target and ecologically dependent species that are trophically related to the target species, including by-product species from the fishery, that are classified as depleted. The depletion of the populations may not necessarily have been caused directly or indirectly by the fishery, but this indicator focuses on assessing the potential issue that the continuing activities of the fishery may be causing either further declines or preventing a reasonable rate of recovery in the depleted non-target populations.

The only non-target species that clearly falls into this category is the Sea Lion. While there are a number of other species that could be considered to be depleted, their ecological linkages or bycatch levels appear to be such that it is unlikely that the implementation of

further control measures beyond those already in place in the fishery would have a significant effect on rebuilding of their populations.

The Australian Sea Lion (*Neophoca cinerea*) is a protected species in WA, and is listed as Vulnerable under the Commonwealth EPBC Act, and is determined here to be a depleted ecologically-related species. This species is Australia's only endemic seal and is the least abundant seal in Australian waters. The Australian population is estimated to be about 11,200, about 70% of which are found in South Australia. The current population is considered to be a small fraction of the historic populations, which were heavily harvested in the 18th and 19th centuries. The sea lions are now constrained to the western part of their former national distribution — from the Abrolhos Islands region in WA to The Pages Islands, near Kangaroo Island in South Australia. There is some evidence to suggest that the population overall is in decline, and lobster fishing (presumed to include both SA and WA lobster fisheries — the SA fishery is for a different species of lobster and is not part of the MSC certified WRLF) is cited as one of the factors likely to be contributing to the decline, or preventing recovery (<www.deh.gov.au/biodiversity/threatened/species/australian-sea-lion.html#judged>). The current low levels of bycatch in this fishery, although still uncertain, are nonetheless unacceptable, since the Sea Lion is at the edge of its current range, and typically this is the most vulnerable habitat for mammal species when subject to environmental and human-induced pressures. Also, the existence of relatively independent range-edge populations is an important aspect of the conservation ecology of such species, since this is where adaptations to other (non-fishing) pressures may be developed, and where genetic differences leading to enhanced resistance to factors like climate changes may be most easily fixed into populations, hence enhancing the adaptability of the species as a whole. The WA rookeries are considered to be highly isolated and independent, and the most precautionary approach to this problem is therefore to consider each breeding rookery as an isolated population for management purposes.

The fishery has developed and conducted initial trials of SLEDs to mitigate the bycatch of Sea Lions, with a target of achieving a zero bycatch. However, the SLEDs have not yet been implemented in the fishery, and further trials are now underway to optimise their design. This matter is assessed in Indicator 2.2.2.1, and Corrective Action 2.6 applies.

Strategies to deal with the sea lion issue has been developed with the involvement of the SL SRG, which provides independent expert advice. For the other species, assessments are expected to be made through the ERA process, although this is not yet fully functional to an acceptable level.

For this indicator, the trials that have been undertaken, and the trials currently underway, constitute a moderate level of tested mitigation measures, even though they have not yet been implemented in the fishery. The impact of not implementing the SLEDs has been assessed in 2.2.1.4 above.

Principle 3 Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends

Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
5. incorporates an appropriate mechanism for the resolution of disputes arising within the system¹;
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;

10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - a) setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b) identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
 - c) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
 - d) mechanisms in place to limit or close fisheries when designated catch limits are reached;
 - e) establishing no-take zones where appropriate;
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure. Management System Criteria:

B. Operational Criteria

Fishing operation shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.
17. that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

3.1 The management system has a clearly defined scope, capable of achieving MSC Principles and Criteria and includes short and long-term objectives, including ecosystem objectives, consistent with a well managed fishery

3.1.1 The management system has objectives which incorporate and apply an adaptive and precautionary exploited stock strategy [Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

Scoring Guidepost 60

The management system requires the development of sustainability indicators, and there are basic attempts to control effort.

Scoring Guidepost 80

The management system has sustainability indicators, including catch rates, and sets objectives related to these data, and has implemented measures to control effort.

Scoring Guidepost 100

The management system includes scientific assessment of stocks and sets precautionary long-term stock management objectives and the harvest strategy includes effective effort and/or output controls to maintain stocks at productive levels (specified by appropriate target and limit reference points), and provide for the recovery of depleted stocks to specified levels within specified time frames. The harvest strategies are evaluated using robust assessment methods that consider the use of a range of management tools. Stock assessments and harvest strategy evaluations are undertaken in an open process and the methods and results made available in published reports and these evaluations are periodically externally reviewed.

Score 90

There is an effective and comprehensive management system in place for the fishery based largely on input controls. The management system for the WRL is complex, but has recently been put together in a single document (Anon. (2004a) as suggested in the 2000 certification report. The management system includes, regulations (issued under *Fish Resources Management Regulations 1995*), notices under the management plan, license conditions, and Ministerial Guidelines.

The management system includes scientific assessment of stocks and sets long-term stock management objectives (Caputi et al., 2004; Bray, 2004; Anon, 2004c, Wright et al., in press; Anon, 2005).

Spawning stock limit points have been set and are justified based on stock biology or exploitation history, and they are measurable.

Statistical simulations have been undertaken on aspects of data limitations, uncertainty and variability. The level of spawning stock is robustly estimated using a comprehensive set of fishery dependent and fishery independent data sets.

- The minimum reference point for egg production is set at the level of the late 1970's and early 1980's, which, on a stock-wide basis, is estimated to be about 25% of the unfished egg production.
- The WRL fishery has been divided into three management zones (Zone A, B and C) and the level of the spawning stock in each zone has been set to ensure the sustainability of the total stock (Caputi et al., 2004).
- If the breeding stock in any of the three areas falls below the reference level corrective management responses are triggered (Bray, 2004 ; Anon 2004c, 2005), the elements of which have been tested and found to be effective for the recovery of depleted stocks.
- Harvest strategies are evaluated using assessment methods that consider the use of a range of management tools (Bowen, 1994; Donohue, 1998a, 1998b; Bray, 2004; Anon, 2004c; Anon, 2005)
- The results of stock assessments and harvest strategy evaluations are made available in published reports

The harvest strategy includes effort and/or output controls to maintain the required level of breeding stock. The strategy includes:

- Management through input controls based on individual transferable effort (tradable units that allow fishers to use a finite number of traps according to the number of units they hold) with the ability for management to vary the total number of traps used in the fishery during a fixed fishing season through variations in the unit value.
- There is a limit on the total number of units within the fishery (69,288 - only 56,906 traps can be used after unit-value reductions and units lost through prosecutions) and within each of the three zones of the fishery.
- The annual fishing season is for a fixed period from 15 November to 30 June in Zones B and C and from 31 March to 30 June in Zone A, limiting the opportunity for fishers to take lobsters .
- There are prohibitions on the taking of berried, setose, tar-spot, or oversize females (>105 mm north of 30°S and >115 mm south of that line) and sub-legal sized lobsters (77/76 mm). The taking of maximum size, non-setose females was allowed in 2001/02 as an adaptive management process.
- A zone-based management system reduces the risk of local concentrated fishing effort depleting key elements of the breeding stock (e.g. Abrolhos Islands).
- Three or four escape gaps are used in each trap to substantially decrease the opportunity for undersize lobster to remain in the traps when they are pulled.
- Limits on the size and structure of traps are designed to maintain the current level of their fishing efficiency.

- Compliance policing focuses on checks of the legality of lobsters consigned to processors and at sea inspection of traps use by individuals so that trap usage does not exceed that allowed on the licence and that strict trap design/dimensions are adhered to.
- The use of new technology that may increase fishing efficiency is monitored.
- Harvest strategies maintain stocks at productive levels (specified by appropriate limit reference points), and provide for the recovery of depleted stocks to specified levels within specified time frames. Because the level of the reproductive stock in Zone B has declined below the 25% reference level, a recovery plan has been instituted in 2005.

The management system includes a scientific assessment of the stock and set long-term management objectives and the harvest strategy includes controls to maintain stocks. The methods and results are made available in published reports.

3.1.2 The management system incorporates and applies an effective strategy to manage the ecological impacts of fishing [Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

Scoring Guidepost 60

The management system uses data on non-target species to inform management strategies, but there are no formal assessment procedures.

Scoring Guidepost 80

The management system considers ecological impacts from fishing, and has procedures for dealing with ecological issues that involves the appropriate range of scientific expertise and stakeholders.

Scoring Guidepost 100

The management system has an explicit and well defined strategy that takes into account all significant ecological impacts of the fishery, including non-target species and habitats, in developing and implementing management measures in the fishery to ensure that ecological impacts are well managed.

Score 80

The management system has an explicit and well-defined strategy that takes into account some ecological impacts of the fishery, including non-target species and habitats.

Two ERAs have been conducted for the Fishery, the most recent in 2005. However, the ERA conducted in 2005 had deficiencies in the manner in which it was conducted and its outcomes. Key weaknesses were the lack of an appropriate mix of experts and stakeholders, and the constraints on evidence and data provided to the ERA workshops as the basis for risk assignments.

An Environmental Management System has been adopted and implemented for the Western Rock Lobster Fishery (Anon 2004b). This is as yet based principally of the findings from the first ERA conducted in 2001.

The EMS and other associated documents (e.g. Scientific Reference Group reports) provide an assessment of the fishery's interaction with:

- bycatch, e.g. octopus;
- protected and icon species, e.g. sea lions, turtles, whales and sea birds; and
- sensitive habitat, e.g. coral at the Abrolhos Islands.

Research has been, and is being, undertaken on the fishery's interaction with sea lions with a view to legislating for excluder devices in the pots to prevent sea lions entering, to be used in the areas of the fishery most likely to interact with sea lions.

A research program is underway to look at some aspects of the impact of the fishery on deepwater ecology.

The management system considers ecological impacts from fishing, and has procedures for dealing with ecological issues that involve a range of scientific expertise and stakeholders.

3.1.3 The management system incorporates and applies an effective strategy to manage the socio-economic impacts of the fishery, and the fishery is free from significant subsidies, which promote over fishing or ecosystem degradation. [Relates to MSC Criteria 3.2, 3.4, 3.6, 3.7]

Scoring Guidepost 60

The fishery management system seeks to understand social and economic consequences of decision-making but there are no formal arrangements. There are no significant direct subsidies to the fishery that might promote over fishing or ecosystem degradation.

Scoring Guidepost 80

The long-term interests of people dependent on fishing for food and livelihood are formally considered under the management system, in a manner consistent with ecological sustainability. There are no significant direct subsidies to the fishery that might promote over fishing or ecosystem degradation.

Scoring Guidepost 100

The system considers the long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability. Socio-economic impacts are quantitatively assessed and/or stakeholder representation in the development of management advice is sufficient to ensure that the full range of socio-economic impacts are identified and considered. All aspects of fishery are free from direct subsidies that might promote over fishing or ecosystem degradation.

Score 95

The decision making process for the fishery takes into account the social and economic impacts of management (Anon 2005), including consultation with stakeholders and stakeholder representation on advisory committees to ensure that a range of socio-economic impacts are identified and considered.

The system considers the long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability:

- A process to consider rights of indigenous fishers is in place (Franklyn, 2003).
- Two projects are currently underway, or recently completed, on the social and economic aspects of the Western Rock Lobster Fishery relating to a comparison of input vs output management regimes.

The system considers the long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability. Socio-economic impacts are considered. All aspects of the fishery appear to be free from significant direct subsidies that might promote over fishing or ecosystem degradation.

3.1.4 There is a well-defined strategy for research related to the objectives of the fishery

3.1.4.1 The management system has a plan for research needed to support the harvest strategy [Relates to MSC Criterion 3. 8]

Scoring Guidepost 60

Research support for management is provided on an ad-hoc basis, with resources subject to competitive allocation. Some of the research results are considered and adopted within the management system.

Scoring Guidepost 80

There is a strategically developed research plan to support the management system, including the harvest strategy. Resources are generally available for the high priority studies in support of management. Most research results are considered and adopted.

Scoring Guidepost 100

There is a research plan, designed jointly by scientists, managers and stakeholders, to support the management system, including the harvest strategy. Resources are always available to support the high priority research needs of management.

The research results are made public and they are considered and adopted within the management system.

Score 90

There is a comprehensive research plan and monitoring programme, designed jointly by the Department of Fisheries scientists, the Scientific Research Groups, managers, the Rock Lobster Industry Advisory Committee (RLIAC) and stakeholders to support the management system including the harvest strategy. The research sub-committee of RLIAC is tasked specifically with designing this research plan. The components of the research plan include strategic research, tactical research to resolve current issues in any sector of the fishery, as well as research and monitoring of the commercial and recreational fisheries. For example:

- breeding stock monitoring – fishery dependent and independent;
- puerulus settlement monitoring;
- commercial catch monitoring at sea
- catch and effort data collection and analysis, e.g. compulsory monthly returns and research log books;
- monthly processors grade category data;
- recreational fisher and catch surveys;
- stock assessment, including evaluation of harvest strategies
- economics, marketing, product enhancement
- ecological studies; etc.

Resources are available to support research for the needs of management, ensuring that the high priority research needs are always funded, e.g.:

- fishing industry funds;
- State Government funds. and
- FRDC funds;

Research results are made public (e.g. scientific publications and Department of Fisheries publications, including the annual State of the Fisheries report to Parliament) and are considered and adopted under the management system by RLIAC, Department of Fisheries and Government in their decision making processes, for example management responds to stock assessments with measures to maintain and restore breeding stocks when necessary.

There is a research plan, designed jointly between scientists, managers, and some stakeholders to support the harvest strategy. Resources are available to support the high priority need of research. Research results are public, and they are considered and adopted within the management system.

3.1.4.2 The management system has a plan for research needed to support the understanding of the ecological impacts of fishing [Relates to MSC Criterion 3.8]

Scoring Guidepost 60

Some limited research to support ecosystem management is undertaken, and some of the research results are considered and adopted within the management system.

Scoring Guidepost 80

There is a strategically developed research plan to support the needs of ecosystem impacts assessment. Resources are generally available for the high priority studies in support of ecosystem management issues. Most research results are considered and adopted.

Scoring Guidepost 100

There is a research plan, designed jointly by scientists, managers and stakeholders, to support the ecosystem and to address significant environmental risks and impacts of fishing. The effectiveness of the research plan has been assessed, and resources are always available to support the high priority research needs for the management of ecosystem issues. The research results are made public and they are considered and adopted within the management system.

Score 80

There is a West Coast Rock Lobster Strategic Operational Plan January 2004 – December 2009 endorsed by RLIAC under the management system which includes activities needed to support the understanding of the ecological impacts of fishing, under the objective of achieving an ecosystem based management of the fishery. This plan does not appear to be peer reviewed, or otherwise examined externally to RLIAC and the Department of Fisheries. The RLIAC Research sub-committee develops a strategic plan for research which is then endorsed by RLIAC. The RLIAC Research sub-committee plan has still to be amended to take account of the Coast Rock Lobster Strategic Operational Plan. A separate research plan is being developed by the Ecosystem Scientific Reference Group, although this has not been completed and submitted to RLIAC for assessment.

The effectiveness of the research plans have yet to be fully assessed. In some cases studies have determined the impact on sensitive coral habitat at the Abrolhos Islands, but the other projects, such as the understanding of the ecological impacts of fishing in deepwater, are ongoing.

Resources are available to support research to understanding some of the ecological impacts of fishing.

Research results are made public (e.g. scientific publications and the Department of Fisheries publications, including the annual State of the Fisheries report to Parliament)

Results of research are routinely considered and adopted by RLIAC, Department of Fisheries and Government in their decision making processes within the management system, e.g. the management response to research of impacts on sea lions.

There is a strategic research plan for the Fishery which includes some studies to assess the impacts of the Fishery on the ecosystem. Resources are available to support high priority studies.

3.2 The management system recognizes applicable legislative and institutional responsibilities and coordinates implementation on a regular, integral, explicit basis

3.2.1 The fishery is managed and conducted in a manner that respects international conventions and agreements and not under any controversial unilateral exemption to an international agreement [Relates to MSC Criterion 3.1]

Scoring Guidepost 60

The management system appears to operate within applicable international law, although no detailed examination of this has been made.

Scoring Guidepost 80

The management system does not employ or in any manner seek to operate within any exemption to otherwise applicable international law.

Scoring Guidepost 100

All measures taken within the management system are in compliance with relevant international treaty obligations, and the management system does not undertake unilateral exemption from any treaty obligation pertaining to the fishery.

Score 100

The fishery is not conducted under a controversial unilateral exemption to an international agreement.

Binding documents to which Australia is a party and apply to the Western Rock Lobster Fishery are:

- The United Nations Convention on Biological Diversity; and
- The United Nations Convention on the Law of the Sea.

There are no reports in the press or other media of the Fishery not complying with these international agreements.

3.2.2 The fishery is managed and conducted in a manner that complies with domestic law [Relates to MSC Criterion 3.16]

Scoring Guidepost 60

The management system appears from preliminary observations to operate within applicable domestic laws.

Scoring Guidepost 80

The management system appears to be in compliance with all substantive and procedural aspects of applicable domestic law and procedural audit systems.

Scoring Guidepost 100

The management system is consistently in compliance with all substantive and procedural aspects of applicable domestic law

Score 100

The State of Western Australia manages the Fishery under the Commonwealth Government's Offshore Constitutional Settlement (OCS) arrangement, on behalf of Australia.

Numerous State and Commonwealth Agencies such as: the Department of Transport (vessel surveys) the Australian Quarantine Inspection Service (import of bait and export of fish), Conservation and Land Management (conservation and protection of marine mammals and management of marine national parks), the Department of Environment (conservation of the environment), the various State Port Authorities and the Commonwealth Department of Environment and Heritage all have some direct and indirect impacts on the operation of fishermen and management of the fishery. However, while such agencies are regularly consulted and may influence development of policy and even day-to-day operational management, the Department of Fisheries is the only agency, under the existing legislative arrangements and the Commonwealth Government's Offshore Constitutional Settlement (OCS) arrangement, with direct responsibility for management of the fishery.

Important Commonwealth Government legislation that impacts on the WRL fishery is the *Environmental Protection and Biodiversity and Conservation Act 1999*.

The legislative basis for management of the Western Rock Lobster Fishery consists of Western Australian legislation:

- West Coast Rock Lobster Management Plan 1993;
- Ministerial Policy Guidelines;
- *Fish Resources Management Act 1994* (FRMA); and
- *Fish Resources Management Regulations 1995* (FRMR).

The management system is consistently in compliance with all substantive and procedural aspects of applicable domestic law.

There are no reports in the press or other media of the management of the Fishery not complying with any domestic laws.

There are a small number of successful prosecutions of fishers for violations of aspects of domestic law in WA, including the Fisheries Act, the Environment Protection Act, and other relevant domestic laws that might have an impact on the fishery or its environment but these are insignificant.

3.3

Stakeholders are directly involved in management of the fishery, disputes can be settled within the system and the managers have useful advice on which to base decisions

3.3.1

The management system involves all categories of stakeholders appropriately on a regular, integral, explicit basis [Relates to MSC Criterion 3.2]

Scoring Guidepost 60

The management system makes decisions after consulting major stakeholder groups.

Scoring Guidepost 80

The management system provides effective processes for the involvement of stakeholders, and makes decisions after consulting all significant stakeholder groups.

Scoring Guidepost 100

The management system makes transparent decisions that fully account and serve all stakeholder groups, and stakeholders are fully involved in the decision making process.

Score 70

The management system makes decisions that serve most stakeholder groups. Stakeholders are involved in providing advice to the decision making process, e.g. commercial WRL fishers, recreational fishers, conservation sector, fishing sector generally.

A representative of Conservation Council of WA participates in the management of Western Rock Lobster Fishery as a permanent observer, but not as a member, on RLIAC along with representatives from the Western Rock Lobster Council and Western Australian Fishing Industry Council (WAFIC). Issues raised by observers are discussed and summarized in RLIAC's minutes, but these are not released to the public. Only a Chairman's summary is released.

Proposals for a conservation member of RLIAC have been made for several years, but without effect. The primary stakeholder consultation mechanism established under the EMS (the WRL ESD Committee) has not met, and is likely to be disbanded.

There are many complaints from stakeholders of the failure of the management system to keep them informed of the situation and to inform them only after the decisions have been taken, and not the reasons why they have been taken. This relates to a failure of the overall consultation process for the environmental aspects of the fishery.

Stakeholders are involved in providing advice, but not in the decision making of management. In general, managers are provided with useful advice on which to base decisions.

Corrective Action

The management system must provide opportunity for better representation of stakeholder views and concerns in the advisory functions associated with management of the fishery. This can be accomplished in a number of ways, including by adjusting membership on the RLIAC.

WAFIC must provide evidence to SCS that this is being considered within 12 months of certification, and implemented within 24 months of certification to address the deficiencies identified by SCS under this performance indicator.

3.3.2 The management system provides for timely and fair resolution of disagreements [Relates to MSC Criteria 3.2, 3.5]

Scoring Guidepost 60

Mechanisms for informal dispute resolution exist, and are used where required by some stakeholders.

Scoring Guidepost 80

The management system has mechanisms for both formal and informal resolution of disputes at all levels of management, and stakeholders generally accept the outcomes.

Scoring Guidepost 100

The management system has established objective mechanisms for resolution of disputes at all levels of, and for all issues arising within the system.

These procedures show evidence of being open to and used by a variety of participants and stakeholders and the results are public.

Score 85

The West Australian Government provides access for settlement of various kinds of disputes to the Minister, the State Ombudsman and the State Appeals Tribunal. An example of a resolved dispute is the Capes rock lobster surf closure (Minister for Fisheries 2005).

The RLIAC advisory Committee meetings provide an opportunity for public presentation and discussion of matters of dispute and stakeholders use this mechanism in this manner.

However, with regard to the environment this mechanism is less effective because of the limited consultation processes that are implemented in relation to environmental issues.

Integrated Fisheries Management (IFM) process (Toohey, 2002). The Western Rock Lobster Fishery is currently being assessed by the IFM Allocation Advisory committee. An Integrated Fisheries Management Advisory Committee has made recommendations to the Minister on catch allocations for the western rock lobster resource.

In general the management system provides for timely and fair resolution of disagreements.

3.3.3 The management system presents managers with clear, relevant information, which is considered in decision-making [Relates to MSC Criterion 3.2]

Scoring Guidepost 60

The management system's decision makers are provided with clear and relevant information under the management system.

Scoring Guidepost 80

The decision makers show evidence of considering and using the clear and relevant information provided to them under the management system.

Scoring Guidepost 100

The management system regularly presents decision makers with analyzed alternatives for action, and the pattern of behaviour by decision makers that reveals that they have found the information provided to them to be useful.

Score 90

The management system regularly presents decision makers with analysed alternatives for action and shows evidence of a pattern of behaviour by decision makers that reveals that they have found the information provided to them to be useful.

For example see:

- *Long Term Management Strategies for the Western Rock Lobster Fishery (Volumes 1-4)* September 1994 (Bowen 1994).
- *Management of Western Rock Lobster Fishery. Advice to Stakeholders on Resource Sustainability Matters, September 2004* (Anon 2004c).
- *Management of the Western Rock Lobster Fishery. Advice to Stakeholders –Assessment of Resource Sustainability Measures, January 2005* (Anon 2005).

RLIAC presents regular reports to the Minister of their discussions with stakeholders and the public, and provides advice on special issues.

Managers and the Minister are generally provided with clear, relevant information, which is considered in decision-making.

3.4 The management system applies information through implementation of measures and strategies (by rule or by voluntary action of fishery) that demonstrably control the degree of exploitation of the resource in the light of the natural variation in ecosystems

3.4.1 The management system has measures and strategies that are effective for restricting gear and practices to avoid by-catch, minimize mortality of by-catch, and reduce discards [Relates to MSC Criterion 3.12, 3.17]

Scoring Guidepost 60

By-catch reduction has been considered by the management system and a preliminary plan is in place. The fishers assist and cooperate in the collection of the catch, discard and other information on the fishery.

Scoring Guidepost 80

By-catch reduction methods are part of the management system. The fishers assist and cooperate, and provide resources for, the collection of catch, discard and other information on the fishery.

Scoring Guidepost 100

There are specific measures in place to eliminate by-catch and discards in the management system and the results are measured against a series of targets.

Score 90

There are specific measures in place to significantly reduce by-catch and discards in the management system and results are measured against a series of goals. For example, the Fish Resources Management Regulations specify the gear that can be used in catching rock lobsters. The Department of Fisheries enforcement staff, check gear and measure compliance with regulations and research staff monitor bycatch and discards on-board working vessels

- The type and size of traps and entrance funnels are specified;
- the mandatory use of three or four escape gaps in each trap to reduce the retention of non-target species and undersize rock lobsters; and
- exclusion devices to eliminate the capture of sea lions are being tested.

The fishers assist and cooperate with authorities in the collection of catch, discard and other information on the fishery. For example, 30 to 38% of commercial fishers provide via daily research logbooks information on the number of undersize landed onboard their vessels and returned to the sea, interactions with protected species, etc.

There are measures and strategies in place that are effective for restricting gear and practices to avoid by-catch, minimize mortality of by-catch, and reduce discards. By-catch of and/or interactions with sea lions has been identified as a problem area but is being dealt with, although the exact extent of the problem and its solution remain to be identified.

3.4.2 The management system has measures and strategies that minimize adverse impacts on the habitat [Relates to MSC Criteria 3.10, 3.13]

Scoring Guidepost 60

The management system requires efforts to identify and document fishery impacts on all habitats.

Scoring Guidepost 80

The management system is gathering knowledge of sensitive habitats in the area of the fishery. As information concerning potential impacts on sensitive habitats is identified, there are mechanisms in place to assess whether the impacts are significant.

Scoring Guidepost 100

The management system identifies and documents fishery impacts on all habitats, and there are measures and strategies to minimize adverse impacts.

Score 85

The management system has identified and documented impacts on the fishery's most sensitive habitat (coral at the Abrolhos Islands) and there are measures in place to minimise adverse impacts on this habitat.

The majority of the habitat in the Fishery is "limestone" or "sand". The risk of adverse impact on this type of habitat is considered low.

3.4.3 The management system does not allow use of destructive fishing practices [Relates to MSC Criterion 3.14]

Scoring Guidepost 60

The management system prohibits the use explosives or toxic chemicals to kill or stun aquatic species.

Scoring Guidepost 80

The operational practices in the fishery attempt to minimize habitat impacts except those impacts that are physically unavoidable consequences of authorized uses of fishing gear. There is evidence that the fishery does not use explosives or toxic chemicals to kill or stun aquatic species.

Scoring Guidepost 100

The management system prohibits fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs, except those impacts that are physically unavoidable consequences of authorized uses of fishing gear. There is a monitoring system in place to determine if such impacts occur.

There are effective penalties for the use of any such destructive fishing practices.

Score 95

The management system specifies the practices that may be used to catch the lobsters and does not allow fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs.

The fishery does not use explosives or toxic chemicals to kill or stun aquatic species. There is a comprehensive and effective compliance system in place to determine if such practices occur. There are effective penalties for the use of destructive fishing practices under the *Fish Resources Management Act 1994* and the *Fish Resources Management Regulations 1995*.

The management system does not allow or condone the use of destructive fishing practices, and there are penalties in place for the use of such destructive fishing practices.

**3.4.4 The management system provides for rebuilding and recovery
[Relates to MSC Criterion 3.10]**

Scoring Guidepost 60

There are regular discussions on the state of the populations and stocks, which would identify if they were over exploited and in need of rebuilding.

Scoring Guidepost 80

Assessments are made of the population, and or stocks, to determine if they are falling below acceptable levels, so that plans for rebuilding could be developed.

Scoring Guidepost 100

Where populations or stocks impacted by the fishery have been found to have declined below prescribed levels, the management system is structured so that plans for rebuilding would be initiated.

Score 100

Where population or stocks impacted by the fishery have declined below acceptable levels, the management system is structured so that plans for rebuilding would be initiated.

The WRL fishery has been divided into three management zones (Zone A, B and C) and the level of the spawning stock in each zone has been set to ensure the sustainability of the total stock (Caputi et al., 2004). If the breeding stock in any of the three areas falls below the reference level corrective management responses are triggered (Bray, 2004 and Anon 2004c and 2005), the elements of which have been tested and found to be effective for the recovery of depleted stocks.

A stock rebuilding exercise has been initiated. Because the level of the reproductive stock of rock lobsters in Zone B has declined below the 25% reference level, a recovery plan has been instituted in 2005, based on a reduction in fishing effort.

Assessments of stocks are made annually, and where they are found to be depleted there is an automatic system in place to initiate plans for recovery.

**3.4.5 Incorporates no-take zones where appropriate [Relates to MSC
Criterion 3.10]**

Scoring Guidepost 60

The management system has the capacity to establish no-take zones.

Scoring Guidepost 80

The management system has considered the introduction of no-take zones, and has the ability to create them if necessary.

Scoring Guidepost 100

The management system has established no-take zones, where appropriate. The purpose and effectiveness of these no-take zones is described, assessed, and regularly reported.

Score 85

The management system has introduced no-take zones for a variety of purposes including minimizing interactions with other users and research.

The management system has established no-take zones in the past for prescribed purposes, particularly for research and if appropriate to the requirements of future research they would be established again. Zones are closed to commercial fishing around Rottnest Island, a popular recreation area, with the purpose of minimising hazards to navigation by trap ropes and floats. In the past there was a closure to commercial fishing within a mile of the shore. The effectiveness of this closure was assessed with the result that the closure was rescinded.

Research is currently being undertaken in no-take zones that have been established as part of the Jurien and Marmion marine parks and in the Department of Fisheries closed areas at Rottnest Island for other research projects.

In the Capes Region conflict between the community and the commercial fishers was resolved by a closure to allow surfing to be unimpeded by fishing operations (Minister for Fisheries 2005). It is not clear that either of these two sets of circumstances (marine parks and the surfing requirements) are appropriate for the purposes of the fishery, or for protection of ecosystems from the impacts of the fishery.

No-take zones have been introduced for a variety of purposes. These zones are identified, the areas and their existence and the reasons for their declaration made public.

3.4.6 The management system minimizes operational waste [Relates to MSC Criterion 3.15]

Scoring Guidepost 60

The fishery encourages minimization of operational wastes, and there is evidence of minimal wastes in the fishery.

Scoring Guidepost 80

The fishery has an effective code of practice that acts to minimise operational wastes.

Scoring Guidepost 100

There are monitoring and enforcement programs for operational waste from the fishery, which have been shown to be minimal through independent audits of compliance.

Score 85

The fishery has introduced a special Code-of-Practice that acts to minimise operational wastes.

Special collection facilities for waste have been set up at all harbour facilities.

Special efforts have been made to remove waste and ensure a waste free environment at the Abrolhos Island.

Observations on commercial vessels by the Department of Fisheries catch monitoring teams, and a beach cleanup survey, indicates that there is significant adherence to the Code-of-Practice. However, there are problems with complete elimination of beach waste including the identification of whether the waste comes from the fishery or other sources such as passing cargo and passenger vessels.

There are monitoring and enforcement programs for operational waste in the fishery, and wastes from the Fishery appear to have been reduced to a minimal level.

3.5 The management system provides for enforcement and compliance
[Relates to MSC Criteria 3.11, 3.16]

3.5.1 The management system enforces compliance in the fishery and has
knowledge of the level of illegal fishing on the target species.

Scoring Guidepost 60

The management system has a compliance and enforcement system and there is general compliance with the system. The level of illegal fishing is estimated.

Scoring Guidepost 80

The management system has established a compliance and enforcement system and has demonstrated a consistent ability to enforce applicable rules. The level of illegal fishing is estimated to be low.

Scoring Guidepost 100

The management system has established a comprehensive compliance and enforcement system. It contains procedures for effective compliance; monitoring, control, surveillance and enforcement, which ensure that management system controls are not violated and appropriate corrective actions, are taken. The effectiveness of the procedures is measured and the level of illegal fishing is known to be low.

Score 90

The management system has established a comprehensive compliance and enforcement system (Anon 2004a).

The effectiveness of the procedures is measured and the level of illegal fishing is assessed to be low Capelluti et al., (2002) Mc Kinlay (2003). There has been no independent assessment of the effectiveness of the compliance and enforcement.

The management system has established a comprehensive compliance and enforcement system. The effectiveness of the procedures is measured, and some of the information is made public. Problems with the sensitivity of the data have caused a number of reports to be declared as Confidential.

3.6 **The performance of the management system is regularly and candidly evaluated and adapted as needed to improve**

3.6.1 **The management system provides for internal assessment and review [Relates to MSC Criterion 3.3].**

Scoring Guidepost 60

The management system has an internal system for occasional evaluation of management performance.

Scoring Guidepost 80

The management system has an internal system for regular evaluation of management performance.

Scoring Guidepost 100

The management system has an internal, continuing, system for evaluation of management performance, and the results are made public.

Score 80

Comprehensive reviews of the long-term management strategies for the fishery and in particular an evaluation of the management options for the resource have been made by Bowen (1994), Donohue (1998 a, 1998b) and Anon. 2005.

Annual audits of the Department of Fisheries performance are undertaken. (Essentially the Department of Fisheries reports annually its performance against the three components (or 'bottom lines') of economic, environmental and social performance, directly tied to the concept and goal of Ecologically Sustainable Development (Department of Fisheries, Annual Reports) and these are made public. It is an internal assessment. This is the standard method of reporting on State government departments.

3.6.2 **The management system provides for external assessment and review [Relates to MSC Criterion 3.2, 3.3]**

Scoring Guidepost 60

The management system has a system for occasional external evaluation of management performance.

Scoring Guidepost 80

The management system has a system for a regular external evaluation of management performance.

Scoring Guidepost 100

The management system provides for an independent, expert review, of management performance, and the results are made public.

Score 85

Aspects of the management system undergo independent, expert review of performance on an annual basis, and in more detail on an irregular basis, by the Auditor General (WA) (1999), and the results of the review are made public. This is the standard method of reviewing State government departments.

The management system provides for a independent expert review of management performance against the three components (or ‘bottom lines’) of economic, environmental and social performance, directly tied to the concept and goal of Ecologically Sustainable Development, but only by the Western Australian Auditor General.

3.6.3 The management system identifies research needs and directs appropriate funding and other resources to these problems [Relates to MSC Criteria 3.3, 3.7]

Scoring Guidepost 60

Resources for research to support ecosystem management are adequate to address a number of the gaps in knowledge that are identified by the management system.

Scoring Guidepost 80

Resources for research to support ecosystem management are adequate to address the high priority gaps in knowledge that are identified by the management system, and most of the results of the research are adopted.

Scoring Guidepost 100

There is a strategic plan for monitoring and research to support ecosystem management and is part of the management plan. Resources are adequate to address significant environmental risks and impacts of fishing that are identified under the management system. The results are made public.

Score 80

There is a comprehensive research plan and monitoring programme, designed jointly by the Department of Fisheries scientists, the Scientific Research Groups, the Rock Lobster Industry

Advisory Committee (RLIAC) and some stakeholders to support the management system including the harvest strategy. The research sub-committee of RLIAC is tasked specifically with designing this research plan. The components of the research plan include strategic research, tactical research to resolve current issues in any sector of the fishery, as well as research and monitoring of the commercial and recreational fisheries. This is not a public document and is not subject to external review.

There is also a Strategic Plan for the Fishery developed by RLIAC. This is to maximise the long-term economic return to the State from the use of the rock lobster resource in the context of an Ecologically Sustainable Development framework and the pursuit of recognised commercial, recreational, conservation and social values (RLIAC Background Paper 7, 2005). This Strategic Plan takes precedence over that set by the research sub-committee, which is to amend its research plan accordingly.

Resources for monitoring and research are adequate to address significant environmental risks and impacts of fishing that are identified under the management system.

There is a comprehensive research plan and monitoring programme to support ecosystem management which is part of the management system. Resources are available to address significant environmental risks and impacts of fishing that are identified under the management system. The research plans are not confidential but have not had full public release nor been subject to external review.

9 TRACKING, TRACING FISH AND FISH PRODUCTS

MSC Chain of Custody requirements were only checked as far as the landing of fish on board legally licensed fishing vessels and found to be compliant with MSC requirements. Further chain of custody assessments were not conducted for any of the fish moving from boat deck into the processing segment of the fishery either onboard or at shoreside processors. It is highly recommended that any Chain of Custody certificates issued for product originating from this fishery also examine and verify the captain's logbook data, the required reporting data on catch from the fishery, and observer reports as part of ensuring that the fish products carrying the MSC logo are properly verified.

10 PEER REVIEW, PUBLIC COMMENT, AND OBJECTIONS

Two peer reviews were conducted by independent scientists as required by the MSC.

SCS has appended (Appendix 1) the peer reviewer comments to this report for public comment.

11 CERTIFICATION RECOMMENDATION AND PERFORMANCE SCORES

It is the assessment team's consensus judgment that the management of the Australian Western Rock Lobster Fishery complies with the MSC's requirements for achieving certification. Therefore, SCS as the certification body of record recommends that the fishery be issued a joint fishery/chain of custody certificate pending (1) the submission and approval of an Action Plan to show how the applicant intends (content and timelines) to meet the proposed conditions, and (2) proof of a contractual agreement between the applicant and an accredited certification body that assures the applicant will continue to comply with all specified conditions, all required surveillance audits, and all other responsibilities under the MSC program.

The WRL fishery achieved a normalized score of 80 or above on each of the three MSC Principles independently (Principle 1 – 85.59, Principle 2 – 80.30, and Principle 3 – 86.31). Although the evaluation team found the fishery in overall compliance (a normalized score at or above 80 on each MSC Principle), it also found the fishery's performance on a number of specific indicators to be below the established compliance mark (an unweighted score of 80 for a single indicator). In these specific cases, the MSC requires that the Certification Body set 'Conditions for Continued Certification' that when met bring the level of compliance for the select indicator up to the 80-level score. Table 3 below shows the overall results of the evaluation in terms of Principle 1, 2, and 3.

Table 3. Scoring assigned to fishery using Analytical Hierarchy Process (AHP).

| Principles, Criteria, Subcriteria, and Indicators | AHP Assigned Weight | AHP Assigned Score |
|---|---------------------------|--------------------------|
| MSC Principle 1 | .333 | 85.59 |
| MSC Criterion 1 | .714 | 86.23 |
| SC 1.1.1 | .151 | 87.82 |
| Indicator 1.1.1.1 | .081 | 100 |
| Indicator 1.1.1.2 | .153 | 90 |
| Indicator 1.1.1.3 | .125 | 95 |
| Indicator 1.1.1.4 | .182 | 95 |
| Indicator 1.1.1.5 | .301 | 75 |
| Indicator 1.1.1.6 | ..158 | 90 |

| | | | |
|--------------------|-------------------|-------|-------|
| SC 1.1.2 | | .127 | 88.35 |
| | Indicator 1.1.2.1 | .233 | 95 |
| | Indicator 1.1.2.2 | .261 | 75 |
| | Indicator 1.1.2.3 | .131 | 95 |
| | Indicator 1.1.2.4 | .285 | 90 |
| | Indicator 1.1.2.5 | .090 | 95 |
| SC 1.1.3 | | .141 | 83.33 |
| | Indicator 1.1.3.1 | ..667 | 80 |
| | Indicator 1.1.3.2 | .333 | 90 |
| SC 1.1.4 | | .151 | 81.67 |
| | Indicator 1.1.4.1 | .222 | 90 |
| | Indicator 1.1.4.2 | .222 | 80 |
| | Indicator 1.1.4.3 | .222 | 85 |
| | Indicator 1.1.4.4 | .333 | 75 |
| SC 1.1.5 | | .127 | 70 |
| | Indicator 1.1.5.1 | .200 | 70 |
| | Indicator 1.1.5.2 | .200 | 65 |
| | Indicator 1.1.5.3 | .200 | 65 |
| | Indicator 1.1.5.4 | .200 | 85 |
| | Indicator 1.1.5.5 | .200 | 65 |
| SC 1.1.6 | | .302 | 95 |
| | Indicator 1.1.6.1 | 1.00 | 95 |
| MSC Criterion 2 | | N/A | |
| | Indicator 1.2.1 | N/A | N/A |
| MSC Criterion 3 | | .286 | 84 |

| | | | |
|--------------------|-------------------|------|-------|
| | Indicator 1.3.1 | .400 | 90 |
| | Indicator 1.3.2 | .600 | 80 |
| | | | |
| MSC Principle 2 | | .333 | 80.30 |
| MSC Criterion 1 | | .375 | 78.69 |
| | SC 2.1.1 | .227 | 81.25 |
| | Indicator 2.1.1.1 | .250 | 80 |
| | Indicator 2.1.1.2 | .250 | 85 |
| | Indicator 2.1.1.3 | .250 | 85 |
| | Indicator 2.1.1.4 | .250 | 75 |
| | SC 2.1.2 | .227 | 85 |
| | Indicator 2.1.2.1 | .500 | 75 |
| | Indicator 2.1.2.2 | .500 | 95 |
| | SC 2.1.3 | .122 | 75 |
| | Indicator 2.1.3.1 | 1.00 | 75 |
| | SC 2.1.4 | .424 | 75 |
| | Indicator 2.1.4.1 | .714 | 75 |
| | Indicator 2.1.4.2 | .286 | 75 |
| MSC Criterion 2 | | .375 | 78.78 |
| | SC 2.2.1 | .667 | 80.67 |
| | Indicator 2.2.1.1 | .165 | 85 |
| | Indicator 2.2.1.2 | .165 | 85 |
| | Indicator 2.2.1.3 | .237 | 85 |
| | Indicator 2.2.1.4 | .433 | 75 |
| | SC | .333 | 75 |

| | | | | |
|-------------------|----------|-------------------|------|-------|
| | | Indicator 2.2.1 | 1.00 | 75 |
| MSC Criterion 3 | | | .250 | 85 |
| | SC 2.3.1 | | 1.00 | 85 |
| | | Indicator 2.3.1.1 | 1.00 | 85 |
| | | | | |
| MSC Principle 3 | | | .333 | 86.31 |
| SCS Criterion 3.1 | | | .173 | 86.43 |
| | | Indicator 3.1.1 | .286 | 90 |
| | | Indicator 3.1.2 | .286 | 80 |
| | | Indicator 3.1.3 | .143 | 95 |
| | SC 3.1.4 | | .286 | 85 |
| | | Indicator 3.1.4.1 | .500 | 90 |
| | | Indicator 3.1.4.2 | .500 | 80 |
| SCS Criterion 3.2 | | | .078 | 100 |
| | | Indicator 3.2.1 | .333 | 100 |
| | | Indicator 3.2.2 | .667 | 100 |
| SCS Criterion 3.3 | | | .155 | 81 |
| | | Indicator 3.3.1 | .400 | 70 |

| | | | |
|-------------------------|------------------|------|-------|
| | Indicator 3.3.2 | .200 | 85 |
| | Indicator 3.3.3 | .400 | 90 |
| SCS Criterion 3.4 | | .185 | 89.43 |
| | Indicator 3.4.1 | .192 | 90 |
| | Indicator 3.4.2 | .192 | 85 |
| | Indicator 3.4.3 | .079 | 95 |
| | Indicator 3.4.4 | .179 | 100 |
| | Indicator 3.4.5 | .179 | 85 |
| | Indicator 3.4.6 | .179 | 85 |
| SCS Criterion 3.5 | | .127 | 90 |
| | Indicator 3.5.1 | 1.00 | 90 |
| SCS Criterion 3.6 | | .282 | 81.67 |
| | Indicator 3..6.1 | .333 | 80 |
| | Indicator 3.6.2 | .333 | 85 |
| | Indicator 3.6.3 | .333 | 80 |

12 MEETING CONDITIONS FOR CONTINUED CERTIFICATION

To be awarded an MSC certificate for the fishery, the applicants must agree in written contract to develop an action plan for meeting the required 'Conditions'; a plan that must provide specific information on what actions will be taken, who will take the actions, and when the actions will be completed. The Action Plan must be approved by SCS as the certification body of record. The applicant must also agree in a written contract to be financially and technically responsible for surveillance visits by an MSC accredited certification body, which would occur at a minimum of once a year, or more often at the discretion of the certification body (based on the applicant's action plan or by previous findings by the certification body from annual surveillance audits or other sources of information). The contract must be in place prior to certification being awarded. Surveillance

audits will be comprised in general of (1) checking on compliance with the agreed action plan for meeting pre-specified 'Conditions', and (2) sets of selected questions that allow the certifier to determine whether the fishery is being maintained at a level of performance similar to or better than the performance recognized during the initial assessment.

We are mindful that even though the applicant (WAFIC) takes the necessary steps to meet conditions, it's capacity to affect the management system may be limited. In the case where the managers or other sectors of the fishery are not able to cooperate, it will be the applicant's responsibility to find other ways to effectively meet the conditions. The certification body will be mindful of the difficulties that may accrue as a result of different interests in the fishery when measuring performance against the required conditions.

12.1 General Conditions for Continued Certification

The general 'Conditions' set for the Western Rock Lobster fishery are:

- WAFIC must recognize that MSC standards require regular monitoring inspections at least once a year, focusing on compliance with the 'Conditions' set forth in this report (as outlined below) and continued conformity with the standards of certification.
- WAFIC must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, and a contract must be signed and verified by SCS prior to certification being awarded.
- WAFIC must recognize that MSC standards require a full re-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years.
- Prior to receiving final certification, WAFIC shall develop an 'Action Plan for Meeting the Condition for Continued Certification' and have it approved by SCS.

12.2 Specific Conditions for Continued Certification

In addition to the general requirements outlined above, WAFIC must also agree in a written contract with an accredited MSC certification body to meet the specific conditions as described in Section 8 and summarized below (within the agreed timelines that will be agreed in the 'Action Plan for Meeting the Condition for Continued Certification' to be approved by SCS).

1.1.1.5 Information is collected on the abundance/density of the stock.

Score 75

Corrective action

Resolve any identified inconsistencies between time series (for details of suggested approach, see Corrective action for indicator 1.1.5.1). Inconsistencies will be identified by the existing review by Dr. Norm Hall (Murdoch University) as described under Principle 1, Criterion 1 above. Under this Corrective Action, WAFIC will be obliged to address any identified inconsistencies with an Action Plan that spells out the work to be performed and the outcomes achieved, and the Action Plan will have to be approved by SCS.

1.1.2.2 Fishing effort is recorded, estimated, and standardized to effective fishing effort.

Score 75Corrective action

Undertake further analysis and review of the results in Wright et al. (in press) and provide an explanation for apparent cycles and trends in catchability. Reconcile these results with trends in other time series of data for the fishery, by fitting all time series simultaneously to models of the fishery and showing where any inconsistencies lie.

1.1.4.4 Harvest strategies are precautionary**Score 75**Corrective action

This Corrective Action is also tied to the current review being conducted by Dr. Norm Hall (Murdoch University). Based in part on the outcomes of Dr. Hall's review, WAFIC will be required to revise the harvest strategy framework to include explicit reference to measures of uncertainty about current stock status and how this needs to be measured. Uncertainty should take account of trends in the full range of indicators available to the assessment. In addition, WAFIC is required to facilitate a revision in management responses by the Department of Fisheries so that they are more explicitly precautionary with respect to uncertainty in stock status.

WAFIC will be required to detail the work planned to meet this Corrective Action in an Action Plan that will be submitted to SCS for approval.

1.1.5.1 Robust assessment methods are used to provide advice on stock status**Score 70**Corrective action

As a matter of urgency, a full quantitative assessment of the WRL stocks using appropriate models and fitting to all relevant time series data is needed.

This in part contingent on the review underway by Dr. Norm Hall (Murdoch University). The review by Dr. Hall will provide the basis for a new and complete stock assessment that will correct any identified inconsistencies or deficiencies from past assessments. As part of Dr. Hall's review, the uncertainties about current stock status for the three management regions in the fishery is being undertaken. If additional work is needed after completion of Dr. Hall's review, WAFIC will be required to undertake that work as part of this corrective action.

1.1.5.2 The assessment takes sufficient account of major uncertainties in data (including evaluation of assumptions) to provide a robust assessment of the stock.**Score 65**Corrective Action

The corrective action is the same as for indicator 1.1.5.1.

1.1.5.3 Uncertainties and assumptions are reflected in management advice.**Score 65**Corrective action

In all future advice by management to RLIAC, the Minister, and stakeholders, it should become a routine feature that management advice include not only "best estimates" of stock

status and forecast effects of management arrangements, but also provide a clear indication of major uncertainties in those assessments and projections. This should not cause problems for maintaining stock status provided precautionary approaches to uncertainty are also built into decision rules (see also Corrective action to indicator 1.1.4.4).

1.1.5.5 The assessment includes a quantitative evaluation of the consequences of current harvest strategies.

Score 65

Corrective action

This Corrective Action is directly linked to the corrective action for indicator 1.1.5.1 and the review currently underway by Dr. Norm Hall (Murdoch University).

The results from both of these efforts (work by Dr. Hall and work to address the Corrective Action under 1.1.5.1) are to be used as the basis for stock projections under current and proposed management arrangements to assess the probability of the stock remaining above agreed reference levels. Where the assessment can not reconcile contradictory trends in different time series of data, undertake sensitivity tests to these uncertainties in assessing consequences of future harvest strategies.

2.1.1.4 There is information on the potential for the ecosystem to recover from fishery related impacts.

Score 75

Corrective Action

To improve the score of this indicator, the client must propose an action plan that will improve performance of the management to be equivalent to the 80 Scoring Guidepost – “Based on the outcomes of research projects, models and estimates of resilience and recovery potential of the main dependent species are being developed to take account of impacts of the fishery, important aspects of ecosystem dynamics, environmental uncertainty and factors external to the fishery.”

The client must ensure that models and estimates of resilience and recovery potential of the main dependent species in the fishery are being developed. In addition, the client must ensure that the models developed will take account of impacts from the fishery and the uncertainty surrounding the models and data.

The CB will require evidence that a plan (of research) to develop these models is developed. The research plan should outline strategies that will be used to determine what impacts, if any, are occurring, and the extent of the impacts. Strategies could include, but are not limited to, comparing impacts of the fishery using areas that are unfished with suitable/comparable fished areas at a scale that is appropriate and robust enough to understand impacts from fishing across the entire fishery. Regardless of the strategy or strategies chosen, the research plan should identify and provide evidence for the studies being scientifically robust.

The client will be required to show that the research plan is either developed with input from fully independent experts with demonstrated world-class credentials and research experience in ecological impacts of fishing (such as those on the ECO-SRG) or that it is properly

reviewed by a set of independent experts of equal qualification. Additionally, the client must consult stakeholders (individuals and/or organizations in the commercial fishing industry, recreational fishing industry, and conservation groups) in the design and development of the plan.

The client is also required to show implementation of the research plan, as well as at least 1 year of data collection and analysis before the end of 2010.

This Condition is a follow on to Conditions from the initial assessment and is required to be fully completed in the time frame of this certification.

2.1.2.1 The trophic linkages and interactions between the non-target species and the target species are known.

Score 70

Corrective Action

Same as for 2.1.1.4 above. In addition, the research plan developed and studies implemented must include studies that assess the impacts of the fishery on trophic linkages between the lobsters and their predators and prey at the lobsters main life stages. The strategies for assessment of impact must meet the standard of evidence that is at least equal to the quality and robustness of evidence derived from appropriate and adequate comparisons of (space and time) areas that are unfished with areas that are fished.

2.1.3.1 Use of bait and loss of bait bands and fishing gear during fishing operations is known and reported, and is within acceptable levels of impact.

Score 75

Corrective Action

The client must present evidence to verify the fishery's compliance with the Bait Handling Code of Practice.

Evidence should be presented in the form of a scientifically defensible sampling scheme and related analyses that identifies how these materials are treated at sea, and quantitatively and statistically evaluates the number and mass of materials taken onto and off fishing vessels, in various seasons and regions of the fishery.

2.1.4.1 The impacts of the fishery on ecosystem structure, function, biological diversity, productivity, and habitat structure are within acceptable levels of impact and there has been an assessment of risks.

Score 70

Corrective Action

A new Ecological Risk Assessment must be conducted by the client to a standard that meets the requirements identified by Dr. Mark Burgman in his 2005 review of ERA methods previously used in this fishery, which includes soliciting, receiving, and acting on advice from stakeholders, fishery managers, and the CB. This new ERA should be conducted within 4 years of the date of certification. The risks must be based on scientifically defensible evidence and inference about the possible hazards in the fishery, and moderate level risks, or hazards where there is insufficient information to determine risk, must be then used as the

basis for an assessment of the impacts of the fishery across the full spatial scale of the fishery. The new ERA should at a minimum also cover all aspects of the 80 scoring guidepost for this indicator.

In addition, the research plan and implementation developed under 2.1.1.4 must integrate the information from the ERA.

2.1.4.2 Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction.

Score 75

Corrective Action

To meet the requirements of the performance indicator, the client must ensure that management performance meets the 80 scoring guidepost which states:

“Management objectives and practices are designed to detect and reduce impacts, although they may not have been fully tested.

The key impacts of the fishery that have been identified as posing a significant risk are mitigated on a precautionary basis using appropriate management tools (such as gear or deployment modifications, seasonal restrictions, size restrictions, closed areas, etc.)”

The system described for the operation of the WRL MS, the EMS and the ERA, through correspondence between the DoF and SCS, would be sufficient if there was evidence that it was active and working. Fully implementing the system as previously described, or some other construct, that meets the intent of this Condition is sufficient if it properly addresses the following key aspects:

- a group, committee or set of groups or committees (previously identified to SCS as the WRL ESD Committee, the SL SRG, and the Eco SRG) must meet at least annually to discuss potential ecological risks from fishing and the management measures needed to address those risks.
- The group(s), or committee(s), old or new, will have a published agenda and provide minutes and reports for public review.
- Reports, at 6 monthly intervals, will be provided on the functioning of the EMS and progress toward meeting the stated EMS objectives for identifying risks and impacts that need to be addressed and mitigated, as well as the relevant, effective and timely approaches and procedures proposed to mitigate any such impacts or risks.

2.2.1.4 The impacts of the fishery on protected, endangered, threatened, or icon species do not exceed acceptable levels.

Score 75

Corrective Action

SLED Implementation and Verification

SLEDs must be introduced into the mandatory zone in the 2006/07 fishing season. The mandatory zone is the area shown on Figure 1 in the document ‘Additional issues for SRG

discussion', presented to the SL SRG meeting in September 2005. The SLEDs must be used for all WRL fishing within the mandatory zone.

The use and effectiveness of the SLEDs in the mandatory zone must be monitored and verified commencing with the 06/07 fishing season. The bycatch of Sea Lions must be monitored using a system that is sufficient to provide scientifically relevant results. It is clear that a full monitoring system across the entire mandatory zone may be too costly to be approved and implemented, especially without relevant evidence that it is needed. As a result, it is necessary that additional discussions occur between all groups (conservation stakeholders, managers, scientists) to determine the best course of action to monitor the effectiveness of SLEDs. WAFIC must bring together all interested parties to discuss this issue, and within 6 months of the certification of the fishery provide a plan of action to SCS for monitoring the effectiveness of SLEDs. WAFIC is also required to implement the proposed monitoring system before the next fishing season 2006/2007.

2.2.2.1 Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction to avoid or mitigate impacts of the fishery.

Score 75

Corrective Action

Same as for Indicator 2.2.1.4.

3.3.1 The management system involves all categories of stakeholders appropriately on a regular, integral, explicit basis [Relates to MSC Criterion 3.2]

Score 70

Corrective Action

The management system must provide opportunity for better representation of stakeholder views and concerns in the advisory functions associated with management of the fishery. This can be accomplished in a number of ways, including by adjusting membership on the RLIAC.

WAFIC must provide evidence to SCS that this is being considered within 12 months of certification, and implemented within 24 months of certification to address the deficiencies identified by SCS under this performance indicator.

13 MSC LOGO LICENSING RESPONSIBILITIES

As the "applicant" for certification of the Western Rock Lobster fishery, WAFIC is the only entity that has the right to apply for a license to use the MSC logo. It is also the case that WAFIC has the right to approve the use of the logo for others associated with the fishery at its discretion.

14 CONCLUSION

The SCS Assessment team concluded after all aspects of the MSC procedures were followed, that the Western Rock Lobster fishery meets the standards of the MSC. The lead assessor for the assessment team presented all evidence to the SCS Certification Panel, which agreed with the assessment team's decision and authorized the determination in this report.

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APPENDIX 1 – PEER REVIEW COMMENTS

Peer Review 1

MSC Assessment - The United Western Australia Rock Lobster Fishery

Contract Number: SCS-MFCP-F-0081
Version: SCS_ Draft Report for Peer Review

Date: 8 July 2008

Review:²

The Assessment Team is well credentialed and has done a professional job in assessing the Western Australia Rock Lobster Fishery. Most of my comments are in relation the appropriateness of the evaluation and scores against a few of the performance indicator and to readability. The comments are made directly onto the text (marked in track change mode) and where I have not made any specific comment indicates that I support both the evaluation and score against the performance indicator. Overall I support the recommendations of the Assessment Team. However, in finalising the report I suggest the authors consider my general comments (see below) and specific comments marked on the text.

General Comments.

1. *Clarity* - Some sections should be rewritten to improve clarity and to correct a few typos. For example, see my notes on the text on page 20 and elsewhere in the text.
2. *Scoring* – A relatively minor point but I found some of the high scoring a little arbitrary with a reluctance to use 100. For example in 1.1.1.3 - why wasn't it scored 100 as the first two lines of explanation repeats the scoring guidepost for a score of 100.
3. *Acronyms* – the extensive use of acronyms needs to be dealt with more appropriately either by spell them out in the text the first time you use them or provide a list of acronyms. This would help readers (and reviewers) not familiar with the WA scene.
4. *MSC Principle 1* – I am generally supportive of the assessment but a little more explanation of scoring would be useful in some instances (see comments on the text). My only substantive comment for Principle 1 is for indicator 1.1.5 - Stock Assessment and associated criteria. Is the corrective action adequate for this key deficiency? Without a little more detail about the Hall review it is difficult for a reviewer to judge. However, given the reputation of the reviewer i.e. Hall I have confidence it will be very well done and implementation is then up to MSC to monitor and assess. One

² This should be read in conjunction with my specific comments marked in track change mode on the report.
SCS DOCUMENT DRAFT REPORT FOR PUBLIC COMMENT
WESTERN AUSTRALIA ROCK LOBSTER FISHERY (WRL)
31 JULY 2006

other concern that occurred to me in reading the assessment of MSC Principle 1 was that it seems several key assessment related activities stopped around 2001 e.g. 1.1.5.4 (page 41). If my view is correct a little more explanation of why they stopped would help. Overall I agree with the corrective actions proposed for the fishery assessments.

5. *MSC Principle 2* - This whole section needs a rewrite to improve clarity. The extensive use of unexplained acronyms was particularly annoying. I also expected more explanation about the impacts and the associated risks and the proposed actions to minimise the risks. For example, I support the need for action for the sea lion interaction but the zero mortality target possibly overstates the risk and hence the associated MSC response. However the way forward for sea lions is relatively clear i.e. get the SLEDs working and implemented and monitor and improve their performance.
6. *MSC Principle 3* - Currently it is clear from the report different authors took the lead for each Section. The whole report requires a thorough edit to ensure consistency of style and clarity. Of more concern is consistency across section and there seems to be some inconsistencies when comparing 2 and 3 (see my more specific comments in the text).

Specific Comments from Section 8 of the Assessment Report

2.1.1.1 The nature and distribution of habitats relevant to the fishing operations is known.

60 Scoring Guidepost

- Some limited information on habitats exists in specific areas of the fishery,
- The distribution of fishing operations is broadly mapped.

80 Scoring Guidepost

- The nature and distribution of the most significant habitats where the fishery operates have been mapped using an agreed and known classification system.
- The detailed distribution of fishing operations in space and time is regularly monitored and reported in a format that does not risk proprietary and confidential information.

100 Scoring Guidepost

- The nature and the distribution of all habitats relevant to the fishing operations are known in detail, and mapped based on a known and agreed biophysical classification system as well as recent information.
- The nature and distribution of all fishing operations are known in fine-scale detail, and regularly reported in a format that does not risk proprietary and confidential information.

Score 80

The detail of the habitats where the fishery operates is known for the Abrolhos region (Chubb et al 2002, Webster et al 2002), and there are various local-scale studies that have mapped habitats in some specific inshore areas where the fishery operates (e.g. Phillips et al recent papers). However, the deeper waters, and much of the remaining inshore waters have not been mapped in any detail across the fishery. Nonetheless, the deep-water areas are probably not as topographically complex as the inshore areas, and some areas may be reasonably understood from analysis of existing information held by individual fishers derived from acoustic data captured on their fishing vessels. [**Comment** – Recent biodiversity mapping data to 100m depth off Ningallo by the Australian Institute of Marine Science would suggest these shelf areas are topographicly very complex] Also, research projects (the FRDC project and the CSIRO/SRFME project) that include aspects of habitat mapping are underway in selected areas, and these activities may be extended to the others areas in the fishery in due course (January 2005 FRDC progress report).

The details of fishing operations are recorded in 1-degree blocks through compulsory fisher returns, and some additional detail is recorded voluntarily by about 30-38% of the fishers in 10-minute blocks on a daily basis. Together with gear control, this provides sufficient detail to enable the impacts of the fishery to be determined at a broad scale, and is adequate to meet the MSC 80 standard for fisheries of this type.

This assessment assumes that the mapping research for deepwater habitats will continue [Comment - what is this assumption based on?], and current projects implemented to map habitats both within marine parks and in other inshore waters will continue to provide an increasing knowledge base on habitat distribution, particularly in B and C zones.

2.1.1.4 There is information on the potential for the ecosystem to recover from fishery related impacts.

60 Scoring Guidepost

Key elements of the functioning of the ecosystem, including natural forcing factors, relevant to the fishery have been identified and ecosystem research is ongoing.

80 Scoring Guidepost

Based on the outcomes of research projects, models and estimates of resilience and recovery potential of the main dependent species are being developed to take account of impacts of the fishery, important aspects of ecosystem dynamics, environmental uncertainty and factors external to the fishery.

100 Scoring Guidepost

- Detailed information is available on the resilience of the benthic ecosystem, and the potential for affected species and communities to recover from fishery related impacts.
- The information used to establish resilience should be as robust as information that could be derived from empirical studies comparing fished and unfished areas.

Score 75

Key elements of the functioning of the ecosystem where the fishery operates have been broadly identified for shallow water habitats, and there are shallow water research projects (CSIRO/SRFME) underway to further address aspects of ecosystem function in habitats where lobsters live in the central west (Jurien) area of the fishery. However, there is only limited knowledge of deep-water habitats that support the older lobsters, and limited knowledge of species that may be ecologically dependent on lobsters.

There is no list or group of ecologically dependent species, and although there is an extensive list of dietary types and species, the only species assumed to be ecologically dependent by the fishery management system appear to be those taken as by-product species. No justification has been provided for this implicit set of assertions. The resilience of any actually ecologically dependent species to the impacts of fishing cannot therefore be assessed.

There is evidence that by-product species are not being overexploited (above), but no relevant information or analysis has been provided for assessment of other species.

Research projects are underway in both deep and shallow waters, but it is not yet clear if they have been designed to address this issue of resilience and recovery from the effects of fishing [Comment – what are the issues of ‘resilience and recovery’ and this seems to contradict the comments on page 47 (second paragraph) or are we referring to different issues by ‘effects of fishing’ and ‘impacts of fishing’]. The research plan that was proposed by the Eco SRG [Comment – what does this stand for?] has not been developed, and it is unclear if this will be a continuing initiative, if it will address this issue, or if the plan will be able to be implemented into effective research activities.

At the time of assessment, other than for by-product species, no evidence was provided relevant to the issue of the resilience or potential for recovery from fishing impacts of species that may be ecologically dependent on lobsters. There are no research programs in place that will provide such data and information, and this therefore does not meet the MSC 80 standard for a fishery of this type. [Comment – given some the historical research on coastal systems in WA these comments seem a little harsh].

Corrective Action

To improve the score of this indicator, the client must propose an action plan that will improve performance of the management to be equivalent to the 80 Scoring Guidepost – “Based on the outcomes of research projects, models and estimates of resilience and recovery potential of the main dependent species are being developed to take account of impacts of the fishery, important aspects of ecosystem dynamics, environmental uncertainty and factors external to the fishery.”

The client must ensure that models and estimates of resilience and recovery potential of the main dependent species in the fishery are being developed. In addition, the client must ensure that the models developed will take account of impacts from the fishery [Comment – if I was

involved in the fishery or associated fishery research I would be seeking more clarity about what is being asked] and the uncertainty surrounding the models and data.

The CB will require evidence that a plan (of research) to develop these models is developed. The research plan should outline strategies that will be used to determine what impacts, if any, are occurring, and the extent of the impacts. Strategies could include, but are not limited to, comparing impacts of the fishery using areas that are unfished with suitable/comparable fished areas at a scale that is appropriate and robust enough to understand impacts from fishing across the entire fishery. Regardless of the strategy or strategies chosen, the research plan should identify and provide evidence for the studies being scientifically robust.

The client will be required to show that the research plan is either developed with input from fully independent experts with demonstrated world-class credentials and research experience in ecological impacts of fishing (such as those on the ECO-SRG) or that it is properly reviewed by a set of independent experts of equal qualification. Additionally, the client must consult stakeholders (individuals and/or organizations in the commercial fishing industry, recreational fishing industry, and conservation groups) in the design and development of the plan.

The client is also required to show implementation of the research plan, as well as at least 1 year of data collection and analysis before the end of 2010.

This Condition is a follow on to Conditions from the initial assessment and is required to be fully completed in the time frame of this certification.

2.1.2.2 There is adequate knowledge of the impacts of fishing gear on the habitat.

60 Scoring Guidepost

The main impacts of gear use on habitat have been identified including type, extent and location.

80 Scoring Guidepost

- Impacts of gear use on the main habitat types have been identified, including type, extent, location and frequency.
- Use of fishing gear in sensitive habitats is minimal.

100 Scoring Guidepost

- The impacts of gear on habitats have been quantified, including details of any irreversible changes.
- Fishing gear is not used in or near sensitive habitats, and physical disturbance to any habitat has been shown to be minimal.

Score 95

Fishing gear appears to be not used intensively in any habitats that are highly sensitive and vulnerable to the physical impacts of gear use (such as dragging of pots, or entanglement with lines, floats etc). However, the fishery does operate in and around coral reef habitats in the Abrolhos area, and while pots appear to be not be set directly on high risk coral patches or reefs, they are set in close proximity to high risk coral systems. They are also set on seagrass beds and on coral-algal assemblages considered to be of moderate biological risk from damage by pot fishing (pot densities are estimated up to 40 potlifts per hectare per fishing season in large areas classified as of moderate biological risk) (Webster et al 2002). There therefore appears to be a risk of moderate levels of environmental damage from fishing in the Abrolhos area.

The impact of fishing gear on limestone and granite reefs, seagrass and sand habitat that make up a majority of the remaining habitats in the fishery was assessed by the 2001 ERA process as a low risk, although it was acknowledged that this was not strongly supported by quantitative field studies of impact. The information base is thus not substantial for assessing the physical impacts of the fishery in these habitats (other than coral reefs), but it is determined that for all of those habitat types other than seagrass beds and coral-macroalgal assemblages, the risk is likely to be low and hence the need for information is limited. The research studies to be undertaken in shallow waters (the CSIRO/SRFME projects) as part of the Strategic Research Plan (Condition 2.1) may be developed to address amongst others the impacts of fishing on seagrass beds, including the physical impacts of pot deployment and rates of recovery of any physical damage. However, the evidence presented for assessment indicates that the directions of this research as yet remain uncertain. [Comment – I agree with the intent of the Action but how would you implement this if you do not have a good understanding of the habitats as noted earlier?]

2.2.1.2 There is adequate information about the interactions of the fishery with protected, endangered, threatened or icon species.

60 Scoring Guidepost

The main interactions directly related to the fishery are known.

80 Scoring Guidepost

Quantitative estimates have been made of the nature and extent of interactions for the main protected, threatened, endangered or icon species that directly interact with the fishery.

100 Scoring Guidepost

Impacts on all protected, endangered, threatened or icon species are regularly assessed, quantified, documented and publicly reported

Score 85

The interactions with the main species of protected, endangered, threatened or icon species is recorded in a voluntary logbook program completed by 30 to 38% of fishers [Comment – I thought that under the EPBC Act that fishery interactions with several if not all these

categories of species had to be reported] . Currently, the main focus of this is to record the bycatch of sea lions. These data are summarised for use in the ERA workshop process.

The limitation of data and knowledge of direct interactions to the data contained in the voluntary logbook program is a significant problem in the fishery. Evidence has previously been provided that the logbook data is broadly consistent with data derived from the DoF commercial sampling program conducted for stock management purposes. However, this is largely anecdotal, and only provides some measure of support for the voluntary program data. For example, it is not clear if small species of importance (such as seahorses) are likely to be recorded in either of these programs.

The fishery performance is generally consistent with MSC standards for protected, endangered or threatened species, but more robust data and knowledge may become important for assessing risks as awareness of icon species increases.

Recommendation

The fishery should take a more systematic approach to identifying and documenting the interactions with protected, endangered, threatened or icon species that occur in the region of the fishery. This should include a program of fishery-independent validation of the voluntary logbook data, and the random extension of the logbook program to other vessels which do not normally participate in the logbook program. Additional tools such as vessel profiling procedures (comparisons between observed and non-observed by-catch rates) should be developed for application in this fishery to assess patterns of interactions with these species that could indicate systemic under-reporting problems.

2.2.1.4 The impacts of the fishery on protected, endangered, threatened, or icon species do not exceed acceptable levels.

60 Scoring Guidepost

Studies in the fishery have examined fishery impacts on populations of protected, endangered, threatened or icon species and mitigation strategies are in place and being developed where appropriate.

80 Scoring Guidepost

Regular assessment of the conservation status and the impacts of the fishery on each protected, endangered, threatened or icon species demonstrates that impacts are generally maintained within acceptable levels.

100 Scoring Guidepost

- The conservation status and impacts of the fishery on all protected, endangered, threatened or icon species are regularly assessed, quantified, documented and publicly reported through independent external expert review using empirical data.

Impacts are maintained within the acceptable levels in all areas where the fishery operates.

Score 75

The impacts of the fishery on protected, endangered, threatened, or icon species generally, except for Sea Lions [Comment – is that because a zero mortality target (noted above) is inappropriate and probably impossible to achieve?], appear to be maintained within acceptable levels. The evidence for this is limited, but risks and actual impacts generally appear to be low for most of the protected, endangered, threatened, or icon species that are known to occur in the same area as the fishery operates. The EMS provides for regular review and assessment of the risk assignments, although there is no systematic process for routinely providing this information to stakeholders and seeking their input. Evidence submitted to the assessment indicates that the key forum for this (the WRL ESD committee) has not been activated, and its role is being reviewed with a view to disbanding it.

The bycatch of Sea Lions currently exceeds the zero target level, and so the impacts of the fishery on the sea lion populations of the southern area of Zone B and the northern area of Zone C (centred around Jurien) currently exceeds the acceptable level.

For the fishery to attain the 80 level for this Indicator, Sea Lion bycatch must routinely be monitored in a robust surveillance system, and the bycatch level must normally be found to be zero based on monitoring data.

Corrective Action

SLED Implementation and Verification

SLEDs must be introduced into the mandatory zone in the 2006/07 fishing season. The mandatory zone is the area shown on Figure 1 in the document ‘Additional issues for SRG discussion’, presented to the SL SRG meeting in September 2005. The SLEDs must be used for all WRL fishing within the mandatory zone.

The use and effectiveness of the SLEDs in the mandatory zone must be monitored and verified commencing with the 06/07 fishing season. The bycatch of Sea Lions must be monitored using a system that is sufficient to provide scientifically relevant results. It is clear that a full monitoring system across the entire mandatory zone may be too costly to be approved and implemented, especially without relevant evidence that it is needed. As a result, it is necessary that additional discussions occur between all groups (conservation stakeholders, managers, scientists) to determine the best course of action to monitor the effectiveness of SLEDs. WAFIC must bring together all interested parties to discuss this issue, and within 6 months of the certification of the fishery provide a plan of action to SCS for monitoring the effectiveness of SLEDs. WAFIC is also required to implement the proposed monitoring system before the next fishing season 2006/2007. [Comment – this corrective action needs to be consistent with 2.2.2.1 which indicates SLEDs are still to developed.]

3.1.2 The management system incorporates and applies an effective strategy to manage the ecological impacts of fishing [Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

Scoring Guidepost 60

The management system uses data on non-target species to inform management strategies, but there are no formal assessment procedures.

Scoring Guidepost 80

The management system considers ecological impacts from fishing, and has procedures for dealing with ecological issues that involves the appropriate range of scientific expertise and stakeholders.

Scoring Guidepost 100

The management system has an explicit and well defined strategy that takes into account all significant ecological impacts of the fishery, including non-target species and habitats, in developing and implementing management measures in the fishery to ensure that ecological impacts are well managed.

Score 80

[Comment – given the information presented (i.e. takes into account ‘some ecological impacts’ and the issue with the 2005 ERA, a score of 80 seems a little high – 70 more appropriate?]

The management system has an explicit and well-defined strategy that takes into account some ecological impacts of the fishery, including non-target species and habitats.

Two ERAs have been conducted for the Fishery, the most recent in 2005. However, the ERA conducted in 2005 had deficiencies in the manner in which it was conducted and its outcomes. Key weaknesses were the lack of an appropriate mix of experts and stakeholders, and the constraints on evidence and data provided to the ERA workshops as the basis for risk assignments.

An Environmental Management System has been adopted and implemented for the Western Rock Lobster Fishery (Anon 2004b). This is as yet based principally of the findings from the first ERA conducted in 2001.

The EMS and other associated documents (eg Scientific Reference Group reports) provide an assessment of the fishery’s interaction with:

- bycatch, eg octopus;
- protected and icon species, eg sea lions, turtles, whales and sea birds; and
- sensitive habitat, eg coral at the Abrolhos Islands.

Research has been, and is being, undertaken on the fishery’s interaction with sea lions with a view to legislating for excluder devices in the pots to prevent sea lions entering, to be used in the areas of the fishery most likely to interact with sea lions.

A research program is underway to look at some aspects of the impact of the fishery on deepwater ecology.

The management system considers ecological impacts from fishing, and has procedures for dealing with ecological issues that involve a range of scientific expertise and stakeholders.

3.1.4.2 The management system has a plan for research needed to support the understanding of the ecological impacts of fishing [Relates to MSC Criterion 3.8]

Scoring Guidepost 60

Some limited research to support ecosystem management is undertaken, and some of the research results are considered and adopted within the management system.

Scoring Guidepost 80

There is a strategically developed research plan to support the needs of ecosystem impacts assessment. Resources are generally available for the high priority studies in support of ecosystem management issues. Most research results are considered and adopted.

Scoring Guidepost 100

There is a research plan, designed jointly by scientists, managers and stakeholders, to support the ecosystem and to address significant environmental risks and impacts of fishing. The effectiveness of the research plan has been assessed, and resources are always available to support the high priority research needs for the management of ecosystem issues. The research results are made public and they are considered and adopted within the management system.

Score 80

There is a West Coast Rock Lobster Strategic Operational Plan January 2004 – December 2009 endorsed by RLIAC under the management system which includes activities needed to support the understanding of the ecological impacts of fishing, under the objective of achieving an ecosystem based management of the fishery. This plan does not appear to be peer reviewed, or otherwise examined externally to RLIAC and the Department of Fisheries. The RLIAC Research sub-committee develops a strategic plan for research which is then endorsed by RLIAC. The RLIAC Research sub-committee plan has still to be amended to take account of the Coast Rock Lobster Strategic Operational Plan. A separate research plan is being developed by the Ecosystem Scientific Reference Group, although this has not been completed and submitted to RLIAC for assessment.

The effectiveness of the research plans have yet to be fully assessed. In some cases studies have determined the impact on sensitive coral habitat at the Abrolhos Islands, but the other projects, such as the understanding of the ecological impacts of fishing in deepwater, are ongoing.

Resources are available to support research to understanding some of the ecological impacts of fishing.

Research results are made public (eg scientific publications and the Department of Fisheries publications, including the annual State of the Fisheries report to Parliament)

Results of research are routinely considered and adopted by RLIAC, Department of Fisheries and Government in their decision making processes within the management system, eg the management response to research of impacts on sea lions.

There is a strategic research plan for the Fishery which includes some studies to assess the impacts of the Fishery on the ecosystem. Resources are available to support high priority studies.

Comment – it is not clear to me whether the score and rationale for it for 3.1.4.2 is consistent with the finding of Principle 2.]

3.4.1 **The management system has measures and strategies that are effective for restricting gear and practices to avoid by-catch, minimize mortality of by-catch, and reduce discards [Relates to MSC Criterion 3.12, 3.17]**

Scoring Guidepost 60

By-catch reduction has been considered by the management system and a preliminary plan is in place. The fishers assist and cooperate in the collection of the catch, discard and other information on the fishery.

Scoring Guidepost 80

By-catch reduction methods are part of the management system. The fishers assist and cooperate, and provide resources for, the collection of catch, discard and other information on the fishery.

Scoring Guidepost 100

There are specific measures in place to eliminate by-catch and discards in the management system and the results are measured against a series of targets.

Score 90

[Comment – again I am not convinced that there is consistency between the scoring for Principle 2 and 3. For example, given early comments and Actions (see Principle 2) about sea lions 90 seems a bit high.]

There are specific measures in place to significantly reduce by-catch and discards in the management system and results are measured against a series of goals. For example, the Fish Resources Management Regulations specify the gear that can be used in catching rock lobsters. The Department of Fisheries enforcement staff, check gear and measure compliance with regulations and research staff monitor bycatch and discards on-board working vessels

- The type and size of traps and entrance funnels are specified:

- the mandatory use of three or four escape gaps in each trap to reduce the retention of non-target species and undersize rock lobsters; and
- exclusion devices to eliminate the capture of sea lions are being tested.

The fishers assist and cooperate with authorities in the collection of catch, discard and other information on the fishery. For example, 30 to 38% of commercial fishers provide via daily research logbooks information on the number of undersize landed onboard their vessels and returned to the sea, interactions with protected species, etc.

There are measures and strategies in place that are effective for restricting gear and practices to avoid by-catch, minimize mortality of by-catch, and reduce discards. By catch of sea lions has been identified as a problem area but is being dealt with, although the exact extent of the problem and its solution remain to be identified.

3.4.2 The management system has measures and strategies that minimize adverse impacts on the habitat [Relates to MSC Criteria 3.10, 3.13]

Scoring Guidepost 60

The management system requires efforts to identify and document fishery impacts on all habitats.

Scoring Guidepost 80

The management system is gathering knowledge of sensitive habitats in the area of the fishery. As information concerning potential impacts on sensitive habitats is identified, there are mechanisms in place to assess whether the impacts are significant.

Scoring Guidepost 100

The management system identifies and documents fishery impacts on all habitats, and there are measures and strategies to minimize adverse impacts.

Score 85

[Comment –consistency between the scoring for Principle 2 and 3. If you don’t know all the habitats (see Principle 2) how has the management system identified and documented impacts? I don’t disagree with the overall assessment of the fishery but I suggest greater consistency in comment throughout the report.]

The management system has identified and documented impacts on the fishery’s most sensitive habitat (coral at the Abrolhos Islands) and there are measures in place to minimise adverse impacts on this habitat.

The majority of the habitat in the Fishery is “limestone” or “sand”. The risk of adverse impact on this type of habitat is considered low.

3.4.3 The management system does not allow use of destructive fishing practices [Relates to MSC Criterion 3.14]

Scoring Guidepost 60

The management system prohibits the use explosives or toxic chemicals to kill or stun aquatic species.

Scoring Guidepost 80

The operational practices in the fishery attempt to minimize habitat impacts except those impacts that are physically unavoidable consequences of authorized uses of fishing gear. There is evidence that the fishery does not use explosives or toxic chemicals to kill or stun aquatic species.

Scoring Guidepost 100

The management system prohibits fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs, except those impacts that are physically unavoidable consequences of authorized uses of fishing gear. There is a monitoring system in place to determine if such impacts occur.

There are effective penalties for the use of any such destructive fishing practices.

Score 95

[Comment – why not 100?]

The management system specifies the practices that may be used to catch the lobsters and does not allow fishery or operational practices that damage or destroy natural geologic, biologic, or chemical features or characteristics of the aquatic area in which the fishery occurs.

The fishery does not use explosives or toxic chemicals to kill or stun aquatic species. There is a comprehensive and effective compliance system in place to determine if such practices occur. There are effective penalties for the use of destructive fishing practices under the *Fish Resources Management Act 1994* and the *Fish Resources Management Regulations 1995*.

The management system does not allow or condone the use of destructive fishing practices, and there are penalties in place for the use of such destructive fishing practices.

**3.4.4 The management system provides for rebuilding and recovery
[Relates to MSC Criterion 3.10]**

Scoring Guidepost 60

There are regular discussions on the state of the populations and stocks, which would identify if they were over exploited and in need of rebuilding.

Scoring Guidepost 80

Assessments are made of the population, and or stocks, to determine if they are falling below acceptable levels, so that plans for rebuilding could be developed.

Scoring Guidepost 100

Where populations or stocks impacted by the fishery have been found to have declined below prescribed levels, the management system is structured so that plans for rebuilding would be initiated.

Score 100

Where population or stocks impacted by the fishery have declined below acceptable levels, the management system is structured so that plans for rebuilding would be initiated.

The WRL fishery has been divided into three management zones (Zone A, B and C) and the level of the spawning stock in each zone has been set to ensure the sustainability of the total stock (Caputi et al., 2004). If the breeding stock in any of the three areas falls below the reference level corrective management responses are triggered (Bray, 2004 and Anon 2004c and 2005), the elements of which have been tested and found to be effective for the recovery of depleted stocks.

A stock rebuilding exercise has been initiated. Because the level of the reproductive stock of rock lobsters in Zone B has declined below the 25% reference level, a recovery plan has been instituted in 2005, based on a reduction in fishing effort.

Assessments of stocks are made annually, and where they are found to be depleted there is an automatic system in place to initiate plans for recovery.

3.6.2 The management system provides for external assessment and review [Relates to MSC Criterion 3.2, 3.3]

Scoring Guidepost 60

The management system has a system for occasional external evaluation of management performance.

Scoring Guidepost 80

The management system has a system for a regular external evaluation of management performance.

Scoring Guidepost 100

The management system provides for an independent, expert review, of management performance, and the results are made public.

Score 85

[Comment – given earlier comments about stakeholder involvement etc I would only scored it as 80]

Aspects of the management system undergo independent, expert review of performance on an annual basis, and in more detail on an irregular basis, by the Auditor General (WA) (1999), and the results of the review are made public. This is the standard method of reviewing State government departments.

The management system does provides for a independent expert review of management performance against the three components (or 'bottom lines') of economic, environmental and social performance, directly tied to the concept and goal of Ecologically Sustainable Development, but only by the Western Australian Auditor General.

MSC Assessment Peer Review The United Western Australia Rock Lobster Fishery

Overview of report

This report provides a comprehensive background and assessment of the western rock lobster fishery. The reviewers have demonstrated a detailed knowledge of the fishery and systems in place to manage the fishery and made their assessments using a logical approach. Their conclusions, that the significant areas for attention are the Ecological Risk Assessment Process and the Stock Assessment, are justified by the material that they present. They also indicate where attention needs to be placed in each of these two areas and that the Stock Assessment is currently under review.

1. Overall clarity

The report is clearly written and logically presented. It provides a comprehensive overview of the fishery, its interactions with other species in the region, and the habitats, the management systems in place for the fishery.

The clarity of the report would be improved in two areas:

1. Providing a brief description of the Analytical Hierarchy Process (AHP), particularly the weightings that were developed, in the Introduction and further explanation given in Section 11 where Table 3 is introduced.
2. Providing further explanation of how the 17 criteria in Principle 3 arranged into a “logical hierarchy” – it may be worth presenting a Table or diagram of the logical hierarchy and how the 17 MSC criteria map onto the Logical hierarchy.

Some suggestions are provided below that would further enhance the clarity of the report.

The data systems for the fishery are referred to in several places through the report. It may be helpful to briefly summarise this information in section 2.2 – the western rock lobster fishery – referring to the log book information, the voluntary logbook system, the fishery independent data and any information collected from observers.

In section 2.2, it would also be helpful to provide an indication of some of the major management interventions that have taken place in the fishery e.g. the 1992/3 pot reductions, the 2004/05 effort reductions.

p28 – 1.1.1.5 Information is collected on the abundance/density of the stock. This section refers to inconsistencies in trends between different time series – it would be worth expanding a little to say what these inconsistencies are.

P104 “correspondence of commitment” – it is not clear what this means

2. Adequacy of the background information (fishery, assessment process, conclusions and recommendations)

The background information for all components in the assessment process is comprehensive. The conclusions and recommendations of the review are clearly presented and logically build on the background and assessments that were completed.

3. Technical comments (adequate description, conclusions, score)

The technical comments are well reasoned and logically presented. In virtually all cases, the technical comments provide a sound basis for the score that is given. Only two cases below require consideration:

1.1.5.1 “Robust assessment methods are used to provide advice on stock status”

This indicator is given a score of 70 but at the end of the text, it is stated that it “barely meets the 60 scoring guideline”. This needs to be reworded so that it is consistent with the score or the score needs to be revised. From the text provided, a score of 60 might be more appropriate.

1.1.5.3 “Uncertainties and assumptions are reflected in management advice”. A score of 65 is given but the opening sentence questions whether the fishery “meets the 60 scoring level for this indicator”. The text indicates that a more appropriate score is possibly a 60.

In 2.1.2.2 “Adequate knowledge of the impacts of fishing gear on the habitat”, it is mentioned that the impacts of fishing on seagrass might be investigated as part of the SRFME project in Jurien Bay. This project has another 12 to 18 months to run. I am not aware of any research that has been completed in this area, or that is being planned as part of the project.

Two very recent developments are relevant to the review but would not have been available at the time of writing the review. An FRDC project, “Evaluating how food webs and the fisheries they support are affected by fishing closures in Jurien Bay, temperate Western Australia”, has been funded to start in July 2006 and continue until June 2009. This project will build on the Jurien Bay project by developing models of trophic linkages and food webs in the region. It will start to address some of the issues identified for indicator 2.1.2.1 “The trophic linkages between the non-target species and the target species are known”.

A draft research plan has been developed by the Ecosystem Effects of Lobster Fishing Scientific Reference Group and is likely to be submitted to RLIAC within the next month.

4. Additional technical comments

No further technical comments to those outlined above.

5. Minor comments

- Minor corrections/comments have been marked using track changes
- has been some duplication in the references
- More details should be provided for some references
- Poynton et al. 2002 is missing from the references
- Section on Principle 3 – a section of text has been duplicated

Specific Comments from text of report

1.1.5.3 Uncertainties and assumptions are reflected in management advice.

60 Scoring Guidepost

- Major uncertainties are recognised and are reported in management advice, as well as possible implications of those uncertainties on the management advice.
- There is a moderate degree of confidence in the adequacy of uncertainties addressed in the management advice.

80 Scoring Guidepost

- Major uncertainties and assumptions are addressed in the management advice and through the appropriate decision rules to address those limitations.
- There is a high degree of confidence in the adequacy of uncertainties addressed in the management advice.

100 Scoring Guidepost

- All significant uncertainties and assumptions are addressed and reflected in the management advice, including appropriate decision rules.
- There is a very high degree of confidence in the adequacy of uncertainties addressed in the management advice.

Score 65

It is not immediately apparent that the fishery meets the 60 scoring level for this indicator. [Either rescore this indicator – seems to be 60 from the text below or reword the above sentence] The general approach of the WA Department of Fisheries in providing advice to stakeholders is to stress certainty rather than to discuss uncertainty in assessments. As already noted, the approach to providing assessment advice is essentially an empirical and descriptive one, but this has become confounded recently due to inconsistencies across different data sets. Despite this, the Department continues to put forward advice on a “best assessment” basis, mainly relying on the strength of the monitoring and empirical indicators to support this approach. In responding to this indicator, WAFIC’s (and presumably the Department’s) assertion was that “There is a high degree of confidence in the adequacy of uncertainties addressed in the management advice. This is based on the use of high quality, robust empirical data (e.g. time series of spawning stock estimates – fishery dependent and

independent) and where necessary sophisticated models that take into account the major uncertainties in the data and functional relationships (e.g. Hall and Chubb 2001)”. It has already been noted that indicators may not be as robust as claimed and that the models do not account for major uncertainties in the data (see 1.1.5.1), and where stock projections are given in support of management advice (e.g. Anon 2004, Figure 3), there is no indication of uncertainty in those projections (see also indicator 1.1.5.5). The advice given to stakeholders on alternative management arrangements to halt the decline in stock levels in the Northern Zone does not include any quantitative evaluation of uncertainties in advice (Anon 2005). This indicator is given a very bare pass at the 60 level, based on there being at least a qualitative statement of uncertainty about the causes of the decline in stock status in the Northern Zone, e.g. “there is currently a resource sustainability problem in the northern zone and this has most likely been caused by a significant increase in the efficiency and effective effort of the fleet” (Anon 2005, page 6).

Corrective action

In all future advice by management to RLIAC, the Minister, and stakeholders, it should become a routine feature that management advice include not only “best estimates” of stock status and forecast effects of management arrangements, but also provide a clear indication of major uncertainties in those assessments and projections. This should not cause problems for maintaining stock status provided precautionary approaches to uncertainty are also built into decision rules (see also Corrective action to indicator 1.1.4.4).