

WESTERN AUSTRALIA ROCK LOBSTER FISHERY

2009 MSC Special/Surveillance Audit Report

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Prepared for:

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PREFACE

All facts in this report were provided to SCS by Western Rock Lobster Council and Department of Fisheries Western Australia. However, the interpretation, opinions, and assertions made in this report as to the compliance of the fishery with MSC requirements are the sole responsibility of Scientific Certification Systems, Inc.

ABBREVIATIONS

ASI	Accreditation Services International
BSS	Breeding Stock Survey
CB	Certifying Body
CSIRO	Commonwealth Scientific and Industrial Research Organization [of Australia]
CPUE	Catch Per Unit Effort
DEWHA	Department of Energy, Water, Heritage and the Arts
DoF	Department of Fisheries, Western Australia
ETP	Endangered, Threatened and Protected species
ERA	Ecological Risk Assessment
ESD	Ecologically Sustainable Development
FRDC	Fisheries Research and Development Corporation
IBSS	Independent Breeding Stock Survey
MAC	Ministerial Advisory Committee
MSC	Marine Stewardship Council
RLIAC	Rock Lobster Industry Advisory Council
SAG	Scientific Advisory Group
SCS	Scientific Certification Systems
SLED	Sea Lion Exclusion Device
SOFR	State of the Fisheries Report
SRG	Scientific Research Group
SRFME	Strategic Research Fund for the Marine Environment
TAB	Technical Advisory Board
TAC	Total Allowable Catch
WA	Western Australia
WAFIC	Western Australian Fishing Industry Council (Client through 2007)
WAMSI	Western Australian Marine Science Institute
WRL	Western Rock Lobster
WRLC	Western Rock Lobster Council (Client from 2008 to present)
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

Background to Audit

The WRL fishery in Western Australia was re-certified on 13 December 2006 by Scientific Certification Systems, Inc. after the first five years of its original certificate. The Western Rock Lobster Fishery was the first fishery certified under the MSC program, and the first fishery to be re-certified.

The requirements of the Marine Stewardship Council (MSC) still require that each certified fishery undergo at a minimum an annual surveillance to ensure the basis of certification is maintained and that the fishery continues to address any conditional requirements identified during the full assessment process.

Should a fishery fail the surveillance audit, and cannot address identified deficiencies in a reasonable period of time, then the use of the certificate and the MSC logo can be revoked by the certifier.

This report represents the third annual surveillance since the fishery was recertified and includes the reassessment of Principle 1 – Stock Status and Harvest Strategy. The surveillance issues for the certifier are whether the fishery has sufficiently acted on the required conditions set forth in the original certification report, and whether a random check on the performance of the fishery verifies continued compliance with the MSC standards.

Additionally, concerns that were raised at the 2008 surveillance prompted SCS to require a partial reassessment of the fishery as it pertained to Principle 1: 1) the current long standing predictive model for puerulus settlement which had previously provided a good explanation of the variations in settlement did not adequately explain the recent low settlements, particularly in 2008/09 (Figure 1), and 2) that the breeding stock may have declined to a point where it was impairing recruitment.

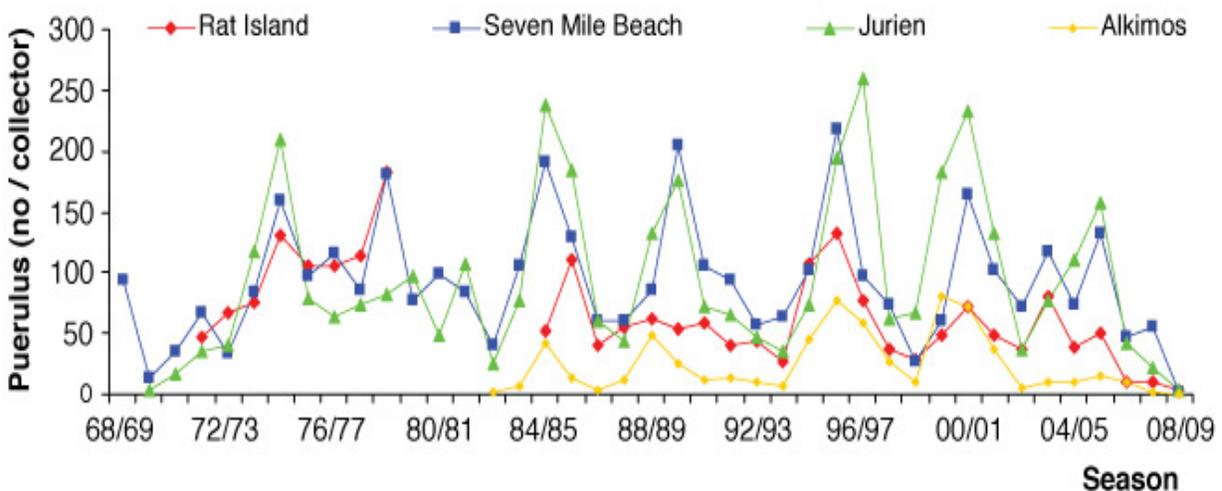


Figure 1. Subset of Long Term Puerulus Settlement Indices, Dept. of Fisheries WA.

Stakeholders were identified through a variety of means, including recommendations made by the client and the assessment team members utilizing their expert knowledge of the region's fisheries. These potential stakeholders were approached directly by email.

Advisory Notices were also posted on the MSC website. Advisory Notices included:

- Stakeholder advisory of reassessment of Principle 1; posted 6 July 2009
- The announcement of surveillance visit dates; posted 28 August 2009
- The announcement of Stakeholder meeting; posted 20 October 2009

Audit Team

The audit was lead by Dr. Chet Chaffee of Scientific Certification Systems, Inc. Dr. Chaffee has more than 30 years experience in marine sciences, which include 10 years in fisheries biology and ecology and over 10 years in marine fisheries certification. In addition, Dr. Chaffee has been a lead auditor for assessments and certification in a wide array of fields for more than 18 years, including marine fisheries, marine aquaculture, consumer electronics, electricity production, forestry, building products, and consumer products. Dr. Chaffee has been an assessment team member on a number of MSC assessments including Mexico sardines, Baja lobster, Russian salmon, and British Columbia halibut. In addition, Dr. Chaffee has been a team leader on numerous fisheries assessments and pre-assessments in a number of countries.

Dr. Tony Smith, a senior principal research scientist at CSIRO, has contributed widely to the assessment and modelling of fisheries and marine resources in Australia as well as globally, including development of methods for scientific evaluation of fishery harvest strategies. Dr. Smith was a team member on the original assessment and subsequent reassessment of the WRL fishery.

Dr. Trevor Ward is Visiting Professor at The Ecology Centre, University of Queensland and the Principal Marine Ecosystems and Biodiversity Consultant for Greenward Consulting. Dr. Ward's scientific expertise is in the fields of strategic policy and planning for ecologically sustainable development, marine environmental management, design and implementation of marine parks, reserves and protected areas; the ecological impacts of marine pollution; and ecologically sustainable fishing. Dr. Ward was a team member on the original assessment and subsequent reassessment of the WRL fishery.

Dr. Bruce Phillips is an Adjunct Professor at Curtin University, where he is conducting research into recruitment and sustainability of spiny lobsters. Dr Phillips worked as the Research Scientist, Assistant Chief and Officer-in-Charge, at the Hobart Marine Laboratories, Division of Fisheries, CSIRO, at Hobart, Tasmania for 28 years. From 1992-1996 he worked as the Chief Scientist with the Australian Fisheries Management Authority (AFMA) in Canberra. He was involved in developing a research program for all Commonwealth managed fisheries, including trawl fisheries, finfish, sharks,

tuna and prawns. Professor Phillips has a special interest in sustainability and certification of fisheries and has co-authored two books on this subject. Dr. Phillips was a team member on the original assessment and subsequent reassessment of the WRL fishery.

Audit Process

The audit process was comprised of five general parts:

1. SCS requested that the client compile and submit written information to the assessment team illustrating the fishery's compliance with the required performance indicators (PI) for Principle 1. In addition, the audit team required that the client provide evidence that the fishery management system has taken the necessary actions to meet all conditions placed on the fishery during the initial certification assessment or any previous surveillance audits. Specifically, SCS submitted questions and concerns to the Client with a request for direct responses during the audit process.

2. Meetings with industry, managers, and stakeholders were held at the Western Australian Fisheries and Marine Research Laboratories 39 Northside Drive, Hillarys WA from 3 – 5 November 2009.

- Stakeholder meeting was held on 3 November. In attendance were;
 - Sabine Daume SCS
 - Chet Chaffee SCS Team Leader
 - Tony Smith SCS Team Member
 - Trevor Ward SCS Team Member
 - Bruce Phillips SCS Team Member
 - Patrick Caleo MSC Australia
 - Dan Hoggarth MSC London
 - Wes Toller ASI
 - Paul Gamblin WWF Australia
 - Bruce Cockman Fisherman – Dongara
 - Norm Hall Murdoch University
 - Dexter Davis WRLC – Executive Chairman
 - Rhys Brown DoF

- Management/Scientists meetings on 4 November. In attendance were;
 - Sabine Daume SCS
 - Chet Chaffee SCS Team Leader
 - Tony Smith SCS Team Member
 - Trevor Ward SCS Team Member
 - Bruce Phillips SCS Team Member
 - Patrick Caleo MSC Australia
 - Dan Hoggarth MSC London
 - Wes Toller ASI
 - Norm Hall Murdoch University
 - Dexter Davis WRLC – Executive Chairman
 - Rhys Brown DoF

- Peter Stephenson DoF
 - Rick Fletcher DoF
 - Nick Caputi DoF
 - Elise Hardiker DEWHA
 - Guy Leland WAFIC
 - Jo Kennedy* DoF
 - Lynda Bellchambers* DoF
 - Matt Pember* DoF
- *afternoon session only

- Management/Scientists meetings on 5 November. In attendance were;
 - Sabine Daume SCS
 - Chet Chaffee SCS Team Leader
 - Tony Smith SCS Team Member
 - Trevor Ward SCS Team Member
 - Bruce Phillips SCS Team Member
 - Patrick Caleo MSC Australia
 - Dan Hoggarth MSC London
 - Wes Toller ASI
 - Rhys Brown DoF
 - Rick Fletcher DoF
 - Nick Caputi DoF
 - Elise Hardiker DEWHA
 - Guy Leland WAFIC
 - Peter Stevenson DoF

3. The assessment team scored the fishery for Principle 1 using the required MSC methodology and without input from the client group or stakeholders.

4. The assessment team presented its findings to the client fishery at the end of the site visit. The results outline the assessment team's understanding of the information presented and its conclusion regarding the fishery management system's continued compliance with MSC standards.

5. SCS produces and releases this Report with a certification determination.

Data Submitted to SCS

On behalf of the client, the Department of Fisheries prepared documents for submittal to SCS in preparation for the on-site meetings. All documents can be obtained by contacting Rhys Brown of the Western Australia Department of Fisheries at Rhys.Brown@fish.wa.gov.au.

A letter was sent to SCS by the Minister for Fisheries after the audit visit (see Appendix 4). The Minister endorsed the sustainability objective 1 of the Donohue et al. draft document, which formed the basis for the 2009-2010 management decision.

In addition written stakeholder submissions were received and are attached as Appendix's 1 – 3 & 5. WWF submitted a document after the audit visit in November 2009 (Appendix 5). As outlined in the introduction of the submission, the WWF assessment draws on an earlier submission by WWF (see WRL surveillance report 2008) and conducts an assessment using the 2006 assessment tree of the fishery. At the time of the audit visit the harvest strategy and decision rule document (Donohoue et al. draft) was not available to WWF and therefore could not have been taken into account in their assessment.

- Babcock, R.C., J.C. Phillips, M. Lourey and G. Clapin. Increased density, biomass and egg production in an unfished population of Western Rock Lobster (*Panulirus Cygnus*) at Rottnest Island. *Western Australia. Marine and Fresh Water Research*, 2007, 58, pg. 286-292.
- Caputi, N., R. Melville-Smith, S. de Lestang, J. How, A. Thomson, P. Stephanson, I. Wright and K. Donohoue, Stock Assessment for the West Coast Rock Lobster Fishery, 2009.
- Caputi, N., R. Melville-Smith, S. de Lestang, A. Pearce and M. Feng, The effect of climate change on the western rock lobster (*Panulirus cygnus*) fishery of Western Australia, 2009 [Draft].
- Donohoue, K., N. Caputi, S. de Lestang, R. Brown and W. Fletcher, Western Rock Lobster Fishery - Harvest Strategy and Decision Rules Proposals, Fisheries Management Paper, 2009 [Draft]. Please note: this document as a draft can be made available on request, and is expected to be release in March 2010.
- Lozano-Montes, H. M., Loneragan, N. R., Babcock, R., and Jackson, K. Using trohic flows and ecosystem structure to model the effects of fishing in the Jurien Bay Marine Park, temperate Western Australia.
- Stephanson, P. and S. de Lestang, Evaluation of the impacts of changes in recruitment of the Western Rock Lobster using a temporal-spatial integrated stock assessment model that incorporates biological processes, 2009 [Draft].
- Impact of fishing on trophic interactions in the marine environment [Draft]
- Habitat composition info – video tows
- FRDC R&D Funding Application -Assessing the ecological impact of the Western Rock lobster fishery in fished and unfished areas.
- Milestone Progress Report - Assessing the ecological impact of the Western Rock lobster fishery in fished and unfished areas. 30 June 2009
- Benthic Modelling and Mapping Final Report, June 2008.
- DoF WA Management Memo 25 Sept 09 – Management Arrangements for the 2009/10 West Coast Rock Lobster Managed Fishery Season
- Rock Lobster Management plan for 2009-10 season

- Using trophic flows and ecosystem structure to model the effects of fishing in the Jurien Bay Marine Park, temperate Western Australia.
- Third MSC Annual Surveillance Report Produced for the Certifying Body, Scientific Certification Systems for the Audit on 4 and 5 November 2009.
- Report on interaction between Australian sea lions and the WCRLF at the Abrolhos Islands.
- Process for Deepwater Closure to date.
- History of closed area negotiations
- FRDC Steering Committee Meeting 19/02/2009
- Terms of reference and composition of Ecological Scientific Advisory Group for the Effects of Fishing
- Babcock, et al, PowerPoint presentation titled Rottneest Island fished and unfished area: “Its just a spatial artifact”
- Project Plan for Trophic Interactions and Ecosystem Modelling for Ecosystem Based Fisheries Management 15-3-2007
- WAMSI Node 4 Milestone Progress Report - 4.3 Trophic interactions and ecosystem modelling
- Proceedings of the Western Rock Lobster Ecological Effects of Fishing Workshop [Draft]
- Report of the Consultation Working Group. July 2009
- Evaluation of the impacts of changes in recruitment of the Western Rock Lobster using a temporal-spatial integrated stock assessment model that incorporates biological processes.
- Investigating fishing efficiency creep in the Western Rock Lobster fishery [Draft] 30 Oct 09
- The effect of climate change on the western rock lobster (*Panulirus cygnus*) fishery of Western Australia.
- Report on interaction between Australian sea lions and the WCRLF at the Abrolhos Islands. [Draft] August 2008
- SRG Action Plan points for MSC

Summary of Conditions/Non-Conformances

As part of the full reassessment of the Rock Lobster Fishery for Principle 1, all pre-existing Conditions and Non-Conformances for this Principle form the basis of the new conditions and have been extended and updated where necessary. New Conditions have been drafted for those indicators where the assessment team determined that scores continue to fall between 60 and 80.

Indicator	Status of Condition/Non-Conformance
1.1.1.5	Condition 1.1.1.5 (2009) issued
1.1.2.2	Addressed by Condition 1.1.5.1 (2009)
1.1.4.2	Open – behind Target – new Condition 1.1.4.2 (2009)
1.1.4.4	Condition 1.1.4.4 (2009) issued
1.1.5.1	Condition 1.1.5.1 (2009) issued
1.1.5.2	Addressed by Condition 1.1.5.1 (2009)

1.1.5.3	Condition 1.1.5.3 (2009) issued
1.1.5.5	Addressed by Condition 1.1.5.1 (2009)
2.1.1.1	Open – Behind Target – Issued Non-Conformance 2009-2-1
2.1.1.2	Closed
2.1.1.4	Open – Behind Target – Issued Non-Conformance 2009-2-2
2.1.2.1	Open – Behind Target – Issued Non-Conformance 2009-2-3
2.1.3.1	Open – On Target
2.1.4.1	Closed
2.1.4.2	Open – Behind Target - Issued Non-Conformance 2009-2-4
2.2.1.4	Open – Behind Target - Issued Non-Conformance 2009-2-5
2.2.2.1	Open – Addressed by Condition 2.2.1.4
3.1.4.2	Open – Issued Non-Conformance 2009-3-1
3.3.1	Open – Issued Condition 3.3.1 (2009)

Conclusion

The rescoring of Principle 1 shows that the fishery continues to meet the 80 benchmark for this principle. While there is clear evidence of a recent collapse in puerulus settlement, and preliminary evidence that low puerulus settlement is continuing in 2009, the most recent quantitative assessment of the resource shows that current breeding stock levels are likely to be at or above target levels. However, the assessment also clearly shows that future egg production (the agreed measure of stock status) will decline dramatically over the next few years as the consequences of low settlement feed into the breeding stock. The management measures being implemented for the 2009/10 fishing season, under a revised and improved harvest strategy, are designed to address the consequences of the low puerulus settlement directly, and to maintain the breeding stock levels at or above target reference levels in future years, even allowing for ongoing poor settlement. However the rescoring of Principle 1 also identified several key uncertainties both in the assessment and in several of the time series of data that feed into the assessment. Several key conditions have therefore been identified that are designed to reduce and/or resolve those uncertainties, and provide a much firmer basis for ongoing management of the fishery. The most important of these conditions (1.1.5.1) requires a prompt and thorough international review of the quantitative stock assessment, including the time series of breeding stock indices used in the assessment. Another key condition (1.1.5.3) requires that key uncertainties in the assessment become a regular feature of management advice provided to stakeholders and decision makers into the future. While the uncertainties identified in the current assessment to some extent undermine confidence in the adequacy of the management measures enacted for the 2009/10 fishing season, the combination of the prospect of a rapid resolution of these uncertainties (through the international review and any resulting recommendations), the substantial reductions in catch levels proposed for 2009/10, the remaining lead time until the full effects of low puerulus settlement are felt in the breeding stock, and the strict management responses built into the harvest strategy, all provide an adequate level of confidence that the fishery currently meets, and in the future can continue to meet, the Principle 1 standard for MSC certified fisheries. With this in mind, the SCS assessment team felt it reasonable to maintain the certificate for the fishery. However, this is contingent on producing a much more reliable stock assessment to ensure that the breeding stock levels are above and will continue to be above the recommended threshold levels. The fact that there is still reasonably substantial uncertainty about the current status of the breeding stock is the basis for

enacting additional Conditions as well as raising existing Conditions to more significant levels of concern.

The annual audit of Principle 2 found overall that the fishery remained in compliance with the MSC standard. Conditions raised earlier were reviewed, and two (2.1.1.2 – knowledge of bycatch and 2.1.4.1 – conduct of an ERA) were completed and are hence closed at this audit and were re-scored. Six previous Conditions have fallen behind target, and as a result four new Non-conformances were raised to absorb and update the earlier Conditions. These Non-conformances involve the extent of progress towards an acceptable level of understanding of the ecological impacts of the fishery, including the ecological impacts of the fishery in the current situation of the apparent very low puerulus abundance; the extent to which there is an effective, transparent and accountable system of consultation with stakeholders in the management of the fishery, and specifically with independent science expertise and environmental NGO stakeholders; and the implementation of SLEDS into the Abrolhos areas of the fishery. A fifth Non-conformance has arisen as a result of the random audit of specific aspects of the fishery —the client will be required at the 2010 audit to provide a fishery-independent estimate of sea lion bycatch across the fishery.

The annual audit of Principle 3 also found that overall the fishery remained in compliance with the MSC standard. Re-examination of Indicator 3.1.4.2 indicated that there is a plan for research needs to understand the ecological impacts of fishing. However, the group that developed this plan no longer exists, and hence the non conformance was maintained. Under the new Condition 3.1.4.2 Non-Conformance 2009-3-1: The client must provide evidence of the development of a plan to conduct strategically based research that incorporates all the research needs of the fishery, including those identified throughout this report and as a result of ongoing conditions from this assessment (such as stock assessments, ERAs, fishing impacts, etc). The plan must specifically include research to address the ecological impacts of rock lobster fishing, and be updated and made available to the public annually. Re-examination of Indicator 3.3.1 revealed that the management system involves all categories of stakeholders appropriately and on a regular, integral, explicit basis. The original Condition cannot be addressed in the manner originally envisaged but the requirement for representation of stakeholders in the conservation community concerned with ecological impacts from fishing, remains unsatisfied. Under a new Non-Conformance 2009-3-2: The client must implement a plan for new consultation arrangements and provide a full report of the new consultation arrangements by 1 July 2010.

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 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.

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.

SG 60	SG 80	SG 100
There is only a moderate degree of confidence in proper identification and reporting of the target species.	There is a high degree of confidence in proper identification and reporting of the target species.	There is a very high degree of confidence in proper identification and reporting of the target species.

Original Score: 100

Revised Score: 100

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.1.2

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

SG 60	SG 80	SG 100
There are serious gaps in information but the basis of the life history is understood adequately to support a rudimentary evaluation of the fishery.	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.	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.

Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.1.3

The geographical range of the target stock is known.		
SG 60	SG 80	SG 100
An estimate of the geographical range of the target stock is available.	A reliable estimate of the geographic range of the target stock is available including seasonal patterns of movement/availability.	The complete geographic range of the stock, including seasonal patterns of movement/availability, is reliably estimated.

Original Score: 95

Revised Score: 95

Rationale from 2006 Reassessment: The complete geographic range of the stock, including seasonal patterns of movement/availability, is 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. When studies on the spatial origin of egg production and studies on recruitment and larval mixing are completed, the fishery may well deserve a full 100.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.1.4		
Information on reproductive output and on recruitment and its relationship to parental stock is understood.		
SG 60	SG 80	SG 100
There are enough years of information available on indices of recruitment and parental spawning stock abundance to support a rudimentary evaluation of the fishery.	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.	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.

Original Score: 95

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Revised Rationale: The score for this indicator has been reduced on the basis that there is currently no clear explanation for the recent collapse in puerulus settlement. The extremely low level in 2008 runs counter to the expectation from the previously documented environmental predictors of settlement. However, all other information continues to support a very high degree of confidence in the evaluation of the fishery.

1.1.1.5		
Information is collected on the abundance/density of the stock.		
SG 60	SG 80	SG 100
Either fishery dependent or fishery independent indices are available on the abundance of the stock biomass for a number of years, and qualitative information exists on the appropriateness of the indices as proportional indicators of stock size and to support a rudimentary evaluation of the fishery.	Fishery dependent and/or fishery independent indices are available on the abundance of the stock for a number of years, and uncertainties in data and indices have been analyzed and accounted for. The indices are understood well enough to support a high degree of confidence in the evaluation of the fishery.	Fishery independent indices are available on the abundance and density of the stock over sufficient years to assess longer term trends. The 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.

Original Score: 75

Revised Score: 75

Rationale from 2006 Reassessment: 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., 2006). Statistical uncertainty in most of these indices has been derived, though not often presented in published documents. The main problem with these data currently lies in inconsistencies in trends between different time series (for an explanation of the inconsistencies see Chaffee, C. et al., 2004. 2004 MSC Annual Surveillance Western Australia Rock Lobster Fishery, Surveillance Report No. 6). 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.

Revised Rationale: Concerns identified with the stock indices at recertification continue to apply. In particular, discussion of the fishery dependent breeding stock index during the audit identified remaining uncertainties about using the Breeding Stock Survey (BSS) values presented in Caputi et al (2009) and Stephenson and de Lestang (2009) due to failure to correct for known changes in maturity at size and in efficiency of effort. Suggestions have been made that the indices are also affected by year to year changes in availability or catchability, but these have yet to be formally analysed, or factored into the calculation of the indices themselves. The fishery independent breeding stock index (IBSS) also appears to be influenced by two of these factors (changes in maturity and year to year variation in availability or catchability) but should not be affected by changes in the efficiency of effort that affects the commercial catch rates. The BSS and IBSS have in the past been crucial indices of status and trends in the breeding stock, and continue to be very important indices for assessing and managing the stock. The value that they can and should play is currently undermined by failure to account for all known factors that could be influencing trend and variability in the indices, so that they are still judged to fall below the 80 scoring level that requires uncertainties in data and indices to have been analysed and accounted for. The following condition is aimed at rectifying this omission, such that the indices can be used with confidence in the assessment of the stock to support a high degree of confidence in the evaluation of the fishery.

Condition 1.1.1.5 (2009):

The client shall provide to the CB a report showing how current major uncertainties in BSS and IBSS indices, including changes in maturity and environmentally induced inter-annual changes in catchability, have been addressed. The report will include revised time series for estimates of breeding stock, including confidence bounds and the way that they reflect the uncertainties in the analyses. The report shall be reviewed as part of the international review of the stock assessment (see indicator 1.1.5.1) and the reviewed and agreed time series will then be used in the quantitative stock assessment.

Timeline: Report to be provided to CB by March 2010 for subsequent review by international peer reviewer.

Client Response and Action Plan	Timeline(s)
The Senior Research Scientist (Stock Assessment) in charge of this area does not return from his overseas Churchill Fellowship until February 2010, therefore, depending on the amount of work involved, the timeframe for completion of the report may need to be extended to the end of March 2010. A progress report will be provided to the CB.	Progress report to be provided to the CB by 28 February 2010. Report to be completed and provided to the CB by no later than 31 March 2010.

1.1.1.6

The size structure of catches is measured.

SG 60	SG 80	SG 100
Data on the size structure of catches are known well enough to support a rudimentary evaluation of the fishery.	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.	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.

Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

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).		
SG 60	SG 80	SG 100
Sufficient information is available to allow accurate estimates to be made of landings broken down as required for a rudimentary evaluation of the fishery.	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.	<ul style="list-style-type: none"> 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.

Original Score: 95

Revised Score: 95

Rationale from 2006 Reassessment: 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 based on research conducted on traps in a number of fisheries as well as in Western Australia, and also improvements in reducing the time allowed to keep undersize and mature females before returning them to sea to reduce mortality of the protected part of the stock (see the Industry Code of Practice for the proper handling of rock lobsters on board fishing vessels). This information provides very high support for evaluation of the fishery, with the only concern being the non-random nature of the logbook program.

Comments received from stakeholders during the public comment phase of the 2006 reassessment note that there is some concern about the accuracy of data collected on recreational catch. While the assessment team believes the data collection methods and analysis provide a reasonably accurate estimate of recreational catch, it is a useful recommendation to the fishery to examine the methods more closely and provide a regular report on the validity of the data.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.2.2		
Fishing effort is recorded, estimated, and standardized to effective fishing effort.		
SG 60	SG 80	SG 100
Nominal effort data are available which can be used to estimate effective fishing effort well enough to support a rudimentary evaluation of the fishery.	Accurate estimates of effective fishing effort have been made and support a high degree of confidence in the evaluation of the fishery.	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.

Original Score: 75

Revised Score: 75

Rationale from 2006 Reassessment: 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., 2006). 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.

Revised Rationale: Since recertification, considerable additional analysis has been undertaken to attempt to measure changes in efficiency of effort over time (see Caputi et al 2009, Stephenson and de Lestang 2009, Anon 2009). The differences in the estimates using different methods show that there is still considerable uncertainty about changes in efficiency and therefore in standardization of fishing effort. The current use of these estimates is not sufficient to support a high degree of confidence in the evaluation of the fishery, though the quantitative assessment does not support the very high levels of change in efficiency (up to 8% per annum) reported in the puerulus risk assessment workshop.

Condition 1.1.5.1 (2009) below will address the uncertainty about changes in efficiency of effort. In particular, including the rate of change in efficiency as an estimable parameter within the quantitative stock assessment model should help resolve and properly reflect most of the uncertainties.

1.1.2.3		
Fishing methods and gear types are known throughout the fishery.		
SG 60	SG 80	SG 100
Main fishing methods and gear types are known for the fishery well enough to support a rudimentary evaluation of the fishery.	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.	<ul style="list-style-type: none"> • 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.

Original Score: 95

Revised Score: 95

Rationale from 2006 Reassessment: 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. A score of 95 was assigned by the assessment team. A score of 100 could be argued, but the assessment team felt that the observer information could be improved, as has been recommended in previous assessments.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.2.4		
Changes in selectivity are known and accounted for.		
SG 60	SG 80	SG 100
Some information is available on selectivity and qualitative changes in selectivity, sufficient to support a rudimentary evaluation of the fishery.	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.	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.

Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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., 2006). Overall, this information provides high to very high support for evaluation of the fishery.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.2.5		
Other fisheries in the area that are not subject to certification are identified and monitored.		
SG 60	SG 80	SG 100
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	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.

Original Score: 95

Revised Score: 95

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

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.		
SG 60	SG 80	SG 100
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.	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

Original Score: 80

Revised Score: 80

Rationale from 2006 Reassessment: 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. The limit reference point is based on historically low levels in the fishery and is used to identify a condition that the fishery managers do not want to see reached again. 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.

Revised Rationale: There was no basis to change the score for this indicator. The target range is that the stock is above the previous threshold reference level corresponding to the egg production level in the early 1980s. The actual limit reference point is set at a level 20% below the 1980 threshold. It was noted during the audit that this still corresponds to a level that is well above the low point in egg production in the late 1980s / early 1990s, and from which the stock subsequently recovered quickly to a level well above the threshold. The target and limit reference points are now formally built into the harvest strategy, which requires that there be at least a 70% probability that the stock is above the 1980 threshold and at least a 90% chance that the stock is above the limit reference point in five years time. This “look ahead” aspect of applying the reference points is appropriate given the ability to forecast future levels of breeding stock given knowledge of puerulus settlement.

1.1.3.2		
Reference points meet acceptable international standards (such as those determined by FAO).		
SG 60	SG 80	SG 100
Reference points recognize appropriate international standards and are being developed to meet these.	Reference points recognize, and are in line with, acceptable international standards.	Reference points meet or exceed international standards.

Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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 and/or cited. The limit reference point for the WRL fishery (25%) is slightly higher than this level, and therefore slightly exceeds international standards.

Revised Rationale: There was no basis to change the score for this indicator. The use of empirical reference points based on levels from which stocks have recovered in the past is a well accepted international standard for choice of limit reference points.

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.

SG 60	SG 80	SG 100
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.	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.	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, and measures to demonstrate effectiveness are in place.

Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Comments received from stakeholders note concerns about keeping the stock above the Limit Reference Point (LRP), given the fact that the spawning stock dropped to around 15% in the early 1990s. However, today there are multiple assessment methods in place to examine the situation to avoid the same problem. Although the assessment team has called into question the validity of the methods due to a lack of comparison between assessment models, it still appears that the assessments show the fishery in total to be above the LRP. It is important to note that the other addition in recent years is the adoption of a harvest strategy that has multiple triggers for reducing effort to further slow and reverse any decreases in spawning stock abundance long before it reaches the LRP. Based on the scoring guideposts, these factors require a score above 80, but not all the way to 100. A score of 90 was assigned to reflect the partial compliance with the scoring guideposts at 100.

Revised Rationale: There was no basis to change the score for this indicator. Measures in place during the 2008/09 fishing season constrained catches to below target levels for that season despite the uncertainty that might have arisen from applying significant changes in management measures. Further measures proposed for the 2009/10 fishing season that effectively impose a hard catch limit further strengthen confidence that harvest levels can be constrained as intended.

1.1.4.2

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

SG 60	SG 80	SG 100
<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• 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.

Original Score: 80

Revised Score: 70

Rationale from 2006 Reassessment: 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 (Bray 2004). On balance, therefore, this indicator appears to meet the 80 scoring guideline.

Revised Rationale: The proposed new harvest strategy includes clear and formally documented rules for determining catch levels designed to maintain the breeding stock above the reference levels outlined above in indicator 1.1.3.1 (Donohue et al. draft). Uncertainty is taken into account by assessing the probability that the stock will be above target and limit reference points and requiring a high degree of certainty of being above the limit (90%). The uncertainty is assessed using the most recent quantitative stock assessment. A further improvement in the rule in 2009 is to consider the future state of the stock taking account of predicted recruitment based on measured puerulus settlement plus an assumption about the puerulus settlement in the year that the decision rule is applied. In the current circumstance of very low puerulus settlement whose cause is still uncertain, the assumption made in the stock projection has been that the lowest observed puerulus settlement is assumed to recur in the latest year (before the observation is made). This builds a significant degree of precaution into the decision rule. The Minister for Fisheries WA endorses the sustainable management objective 1 of the Donohue et al. draft document, which formed the basis for the 2009-2010 management decision (see letter in Appendix 4).

The new interim (not fully approved) harvest strategy and decision rule clearly meets the 80 scoring guidepost. This indicator has been scored below the 80 level because the harvest strategy

is yet to be formally ratified by the Minister and promulgated publicly. As soon as this is done, the indicator will be re-scored to the 80 level.

Condition 1.1.4.2 (2009):

The Client shall provide the CB with clear evidence that the interim harvest strategy and decision rules applied for the 2009/10 fishing season, and intended to be applied for future management of the fishery, have been **formally endorsed by the Minister** and made publicly available.

Timeline: To be completed by March 2010.

Client Response and Action Plan	Timeline(s)
The harvest strategy discussion paper is progressing and should be released for a six to eight week public discussion period in early January 2010. After incorporating public comments where appropriate, the paper will be finalized. It is anticipated that the finalized report will be presented to the Minister for his approval by mid March 2010.	Update on the progress of the discussion paper to be provided by 15 Feb 2010. Anticipated date of approval by the Minister is the end of March 2010.

1.1.4.3

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

SG 60	SG 80	SG 100
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

Original Score: 85

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Revised Rationale: The score for this indicator has increased to reflect new measures in place to control catch levels. In addition to existing effort controls and a range of technical measures such as size limits and the setose rule, the fishery has recently adopted hard catch limits (effectively a TAC) to limit catches and to remove uncertainties about catch levels arising from application of input controls (Donohue et al. draft). While it is not yet clear if these direct output controls will be retained after any future recovery in puerulus settlement remove the need for the current rapid reduction in catches, the addition of direct catch controls appears to be a very appropriate response to the current situation and a successful way to more accurately control effort in the fishery.

1.1.4.4		
Harvest strategies are precautionary.		
SG 60	SG 80	SG 100
<ul style="list-style-type: none"> • Harvest rates respond appropriately to low stock size • Uncertainties about stock status are documented 	<ul style="list-style-type: none"> • Harvest rates are reduced at low stock sizes • Decision rules are explicitly precautionary (are more conservative as uncertainty about resource status increases) 	<ul style="list-style-type: none"> • 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

Original Score: 75

Revised Score: 75

Rationale from 2006 Reassessment: The currently agreed harvest strategy (Bray 2004) includes explicit measures to reduce exploitation rates as stocks approach or exceed a number of reference levels that are below the reference levels experienced currently. These measures were proposed to allow the managers to invoke restrictions in harvest if declines become apparent. The one thing the harvest strategy does not currently include is explicit measures to be more precautionary as uncertainty about stock status increases. This indicator does not therefore meet the 80 scoring guideline.

Revised Rationale: This indicator nearly meets the 80 scoring level. The new interim harvest strategy (Donohue et al. draft) explicitly reduces harvest rates at low stock sizes. It is also precautionary in the sense that it requires a 70% probability of being above the stock threshold and a 90% probability of being above the limit. This means that reductions in harvest rate will occur at higher stock levels where uncertainty in the assessment is higher. The harvest strategy does not currently meet the 80 scoring guidepost because the first step in a response, stated in Donohue et al. (draft), is to initiate a review. The audit team was concerned that without further

clarification of what this means and the time lines involved in such a review, it could be used as an excuse to delay appropriate management responses.

Condition 1.1.4.4 (2009):

Issue a clarification of what is intended by the elements in the harvest strategy that involve undertaking a review, such that there is confidence that this measure will not be used to delay appropriate management responses, but instead be used to determine the most effective form of management response, within reasonable time frames.

Timeline: To be completed by March 2010, as in 1.1.4.2.

Client Response and Action Plan	Timeline(s)
Clarification of what is intended by the elements in the harvest strategy that involve undertaking a review will be included in the Harvest Strategy discussion paper. The 'review' will be used to determine the most effective form of management response, within a reasonable time frame(s).	Clarification of the 'review' to be included in the Harvest Strategy discussion paper to be released for public comment in early January 2010.

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		
SG 60	SG 80	SG 100
A robust empirical approach to assessing stock status is adopted	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.

Original Score: 70

Revised Score: 70

Rationale from 2006 Reassessment: While there has been previous modeling 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 (Caputi et al. 2004; Wright et al. 2006). 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 modeling. 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 reported in detail in a document sent to WAFIC in March 2005 (for an explanation of the inconsistencies see Chaffee, C. et al., 2004. MSC Annual Surveillance Western Australia Rock Lobster Fishery, Surveillance Report No. 6; and Chaffee, C. et al. 2005. Western Australia Rock Lobster Fishery, 2005 MSC Annual Surveillance Report. Review of Corrective Actions from July 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 not fully address the problems raised. This indicator clearly does not meet the 80 scoring guideline.

Revised Rationale: Good progress has been made since recertification in developing and applying a quantitative stock assessment model for western rock lobster (Stephenson and de Lestang 2009). Indeed the assessment model meets the first requirement of the 100 scoring guidepost – the model itself captures almost all relevant features of the biology, fishery and management arrangements in the fishery. (An exception is that it does not deal with the recreational fishery, but this represents less than 5% of the catch). The assessment also uses statistically appropriate methods to fit the model to the data. However the model does not meet the 100 level to integrate all the relevant information and data. For reasons not explained, it does not attempt to fit to the long time series of breeding stock surveys (either fishery dependent or fishery independent), despite the fact that these have provided until very recently the most important empirical indices for management of the stock. The model fits to puerulus and catch data, and also to harvest rate levels determined from depletion models that are fitted separately to within-season catch rate data. The assumptions made in the depletion analyses are not necessarily consistent with the assumptions in the assessment model to which the outputs from the depletion analyses are subsequently fitted. Also, as noted for indicator 1.1.2.2, there is considerable uncertainty about changes in efficiency of effort over time. Three separate analyses are undertaken (outside the assessment model) to determine this parameter, but the value(s) used in the assessment are not properly justified and do not reflect the uncertainty in the estimates. While the fits to the catch and puerulus data are adequate, the fits to the harvest rate data (not shown in the assessment report but provided to the audit team during the audit) are very poor, despite the high weight given to these data in the assessment. For this reason alone, the assessment does not meet the first element of the 80 scoring guidepost – a robust assessment. The empirical basis for the assessment continues to be strong so the assessment clearly meets the

60 scoring guidepost. Thus, despite scoring well in some elements of the 100 scoring guidepost, the current assessment does not fully meet the 80 scoring guideline.

Condition 1.1.5.1 (2009): *(This condition also applies to indicators 1.1.2.2, 1.1.5.2 & 1.1.5.5)*

Undertake an international peer review of the current (2009) stock assessment and work with the peer reviewer(s) to develop a robust assessment of the stock. Issues to be addressed include:

- Estimating depletion within the model by fitting to seasonal trends in catch rates
- Reintroducing breeding stock indices into the objective function (after the condition for indicator 1.1.1.5 is met)
- Estimating efficiency change within the assessment model
- Identifying key uncertainties in assumptions and data and undertaking appropriate sensitivity analyses

Issues to be considered include:

- Estimating the relationship between puerulus settlement and recruitment within the assessment model
- Incorporating size data into the assessment

The client shall then provide a report to SCS of the outcome of the review, including an updated 2009 quantitative stock assessment report, based on recommendations and findings of the review. Assuming a satisfactory resolution of the current uncertainties and problems in the assessment, the new assessment model would then be used as the basis for the 2010 assessment and for the provision of management advice for the 2010/11 fishing season.

Timeline: 8 July 2010

Client Response and Action Plan	Timeline(s)
An international peer review of the current (2009) stock assessment will be undertaken. The peer reviewer(s) will help develop a robust assessment of the stock and address the issues listed above. A report of the outcome of the review will be provided to the CB and will include an updated 2009 quantitative stock assessment report, which will be based on recommendations and findings of the review.	An update on progress to meet this condition will be provided to the CB by mid May 2010. The Client will use its best endeavours to have the report completed by 8 July 2010.

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.

SG 60	SG 80	SG 100
<ul style="list-style-type: none"> • Major uncertainties are identified. • Some attempt has been made to evaluate these in the assessment. 	<ul style="list-style-type: none"> • The assessment takes into account major uncertainties in the data and functional relationships. • The most important assumptions have been evaluated, the consequences are 	<ul style="list-style-type: none"> • The assessment addresses all significant uncertainties in the data and functional relationships and evaluates the assumptions in terms of scope, direction and bias relative

<ul style="list-style-type: none"> • There is a moderate degree of confidence in the robustness of the assessment. 	<ul style="list-style-type: none"> • known. • There is a high degree of confidence in the robustness of the model. 	<ul style="list-style-type: none"> • to management-related quantities. • There is a very high degree of confidence in the robustness of the model.
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Original Score: 65

Revised Score: 65

Rationale from 2006 Reassessment: This indicator scores similar to 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. Since this indicator is specific to the examination of uncertainties, the score is slightly lower than 1.1.5.1. The score of 65 reflects the fact that major uncertainties are at least given some examination.

Revised Rationale: While there is considerable exploration and analysis of uncertainties in data and parameters in the background information on the assessment (Caputi et al 2009), few of these are properly reflected in the quantitative assessment (Stephenson and de Lestang 2009). The exception is uncertainty about future recruitment arising from the collapse in puerulus settlement, which is dealt with in the projections but does not (yet) impact on the assessment of current resource (breeding stock) status. As noted elsewhere in this report, key uncertainties that should be dealt with include changes in efficiency of effort, and changes in maturity and catchability affecting breeding stock indices. The confidence bounds presented in the assessment report do not adequately reflect (underestimate) the true level of uncertainty in the assessment. Overall, the fishery meets the 60 scoring guidepost, and the second element of the 80 scoring guidepost (to the extent that uncertainty about puerulus settlement is dealt with).

Condition 1.1.5.1 (2009) above should address the uncertainty in the assessment.

Client Response and Action Plan	Timeline(s)
See response to 1.1.1.5	31 March 2010.

1.1.5.3		
Uncertainties and assumptions are reflected in management advice.		
SG 60	SG 80	SG 100
<ul style="list-style-type: none"> • Major uncertainties are recognized 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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

uncertainties addressed in the management advice.	uncertainties addressed in the management advice.	management advice.
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Original Score: 65

Revised Score: 65

Rationale from 2006 Reassessment: 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 all major uncertainties in the data (see 1.1.5.1), and where stock projections are given in support of management advice 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. However, this indicator is given a score of 65 (just above 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”.

Revised Rationale: Recent management advice has highlighted and adequately reflected a key uncertainty, which is about future puerulus settlement and its impact on recruitment and breeding stock. However the general approach to provision of management advice (both currently and in the recent past) in general presents results based on a single “base case” for assessment that does not reflect the range of key uncertainties in the assessment. On the basis of the considerable discussion of the puerulus issue and its implications, this indicator clearly meets the 60 scoring guidepost, but in general falls well short of the 80 score due to routinely presenting advice based only on a base case assessment.

Condition 1.1.5.3 (2009): All future advice by management to RLIAC, the Minister, and stakeholders must include as a routine feature, “best estimates” of stock status and a forecast of effects of management arrangements. At the same time, the advice must also provide a clear indication of the major uncertainties in current assessments and projections. (See Condition to indicator 1.1.5.1).

Progress on this Condition will be determined at the next annual audit as it is only possible to judge at the time major (annual) management decisions are made.

Client Response and Action Plan	Timeline(s)
See response to 1.1.1.5 and 1.1.5.1.	Annual audit of 2010

1.1.5.4		
The assessment evaluates current stock status relative to reference points.		
SG 60	SG 80	SG 100
Stock status relative to reference points is assessed empirically	The assessment model evaluates stock status relative to the reference points.	The assessment provides a robust measure of the probability of exceeding reference points.

Original Score: 85

Revised Score: 85

Rationale from 2006 Reassessment: 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, as the Department of Fisheries was developing alternative methods of assessment and in the meanwhile has not made a comparison between the various methods that fully explains the differences in conclusions. This indicator therefore only scores slightly above the 80 scoring guideline for this fishery.

Revised Rationale: There was no basis to change the score for this indicator.

1.1.5.5		
The assessment includes a quantitative evaluation of the consequences of current harvest strategies.		
SG 60	SG 80	SG 100
The assessment forecasts the consequences of current harvest strategies for the stock. There is moderate confidence in the robustness of the advice.	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.	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.

Original Score: 65

Revised Score: 65

Rationale from 2006 Reassessment: Annual assessments have generally included catch forecasts (based on puerulus settlement rates) but less often stock level forecasts (because these would require an assessment model which has not been used for several years). These forecasts provide some indication of current and future harvest strategies. 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. This information included stock projections under 3 levels

of effort reduction. The basis for these stock projections is very inadequately described in the report (there is no technical reference and only mention of use of “recognized modeling 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.

Revised Rationale: The model used for the quantitative assessment of the western rock lobster provides a good basis for evaluating different management options for the fishery and has clearly been useful (and used) to explore combinations of tactical measures to achieve desired catch reductions in the face of concerns about puerulus settlement. However the concerns discussed above about the robustness of the current quantitative assessment also raise concerns about the robustness of the forecasts and do not currently support a high degree of confidence in the adequacy of the harvest evaluation. This indicator clearly meets the first element of the 60 scoring guideline and also meets the second element in the sense that the exploration of management tactics is probably robust to the uncertainties in the assessment.

Condition 1.1.5.1 (2009) above will allow this indicator to meet the 80 scoring guideposts.

Client Response and Action Plan	Timeline(s)
See response to 1.1.1.5 and 1.1.5.1	As for 1.1.5.1

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.		
SG 60	SG 80	SG 100
Assessments show the stock is likely above the limit reference point.	Assessments show the stock is likely above the target reference point and very likely always above the limit reference point.	Assessments show the stock is very likely above the target reference point most of the time in recent years.

Original Score: 95
Revised Score: 80

Rationale from 2006 Reassessment: Spawning stock indicators for the entire spawning stock 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 (see Performance Indicators 1.1.1.5, 1.1.5.1, and 1.1.5.4). For example, zonal assessments indicate that the spawning stock in Zone B may be below the 1980 reference level, but it is not clear what the significance is to maintaining the entire spawning stock across the fishery.

Revised Rationale: The current quantitative assessment (Stephenson and de Lestang 2009) generally shows the egg production to be well above target levels. While there is clear evidence for a recent collapse in puerulus settlement (Caputi et al 2009), the consequences of this will not be apparent in the breeding stock for several years. It therefore seems that the current assessment of the breeding stock level being above the target reference point and likely above the limit reference point is probable. However the uncertainties in the current quantitative assessment (see scoring indicator 1.1.5.1), together with uncertainties in the empirical indicators of breeding stock (see scoring indicator 1.1.1.5), do not support that the stock is better than “likely to be above the target reference point”. The score for this indicator will be reassessed after the completion of condition 1.1.5.1, which will include a re-evaluation of the stock status in 2009.

1.2 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.		
SG 60	SG 80	SG 100
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.	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.	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.

Original Score: Not Scored
 Revised Score: Not Scored

1.2.1 was not assessed as criterion does not apply.

1.3 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.		
SG 60	SG 80	SG 100

<ul style="list-style-type: none"> • Population size/sex structure is based on some sampling and verification. • Some information on stock spatial structure is available. 	<ul style="list-style-type: none"> • Population size/sex structure is based on adequate sampling and verification. • The spatial structure of the stock is reasonably well understood. 	<ul style="list-style-type: none"> • Population size/sex structure is well estimated with only insignificant errors. • Genetic studies of the stock in relation to spatial structure have been undertaken.
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Original Score: 90

Revised Score: 90

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

1.3.2		
Information from stock assessment indicates any fishery induced changes in the size/sex/genetic structure that would have significantly impaired reproductive capacity.		
SG 60	SG 80	SG 300
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.	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.	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.

Original Score: 80

Revised Score: 80

Rationale from 2006 Reassessment: 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.

Revised Rationale: There was no basis to change the score for this indicator.

Principle 1 Performance Scores

The fishery achieved a normalized score of 82.14 during the special reassessment of Principle 1.

Table 1. Scoring assigned to fishery for P1 using AHP.

Principle	Sub-Criteria	Wt	Component	Wt	Indicator	Wt	Weight in Principle	Score	Contribution to Principle Score
1	1.1	0.714	1.1.1	0.151	1.1.1.1	0.081	0.0087	100	0.87
					1.1.1.2	0.153	0.0165	90	1.48
					1.1.1.3	0.125	0.0135	95	1.28
					1.1.1.4	0.182	0.0196	90	1.77
					1.1.1.5	0.301	0.0325	75	2.43
					1.1.1.6	0.158	0.0170	90	1.53
			1.1.2	0.127	1.1.2.1	0.233	0.0211	95	2.01
					1.1.2.2	0.261	0.0237	75	1.78
					1.1.2.3	0.131	0.0119	95	1.13
					1.1.2.4	0.285	0.0258	90	2.33
					1.1.2.5	0.090	0.0082	95	0.78
			1.1.3	0.141	1.1.3.1	0.667	0.0671	80	5.37
					1.1.3.2	0.333	0.0335	90	3.02
			1.1.4	0.151	1.1.4.1	0.222	0.0239	90	2.15
					1.1.4.2	0.222	0.0239	70	1.68
					1.1.4.3	0.222	0.0239	90	2.15
					1.1.4.4	0.334	0.0360	75	2.70
			1.1.5	0.127	1.1.5.1	0.200	0.0181	70	1.27
	1.1.5.2	0.200			0.0181	65	1.18		
	1.1.5.3	0.200			0.0181	65	1.18		
	1.1.5.4	0.200			0.0181	85	1.54		
1.1.5.5	0.200	0.0181			65	1.18			
1.1.6	0.303	1.1.6.1	1.000	0.2163	80	17.31			
1.2	N/A			1.2.1	N/A	N/A	N/A	N/A	
1.3	0.286			1.3.1	0.400	0.1144	90	10.30	
				1.3.2	0.600	0.1716	80	13.73	

Overall weighted Principle-level scores	Principle Score
Principle 1 - Target species	82.14

PRINCIPLE 2

This section of the report covers the findings and outcomes of the November 2009 Audit of the Western Rock Lobster fishery against the Principle 2 issues. The section comprises two parts: first, outstanding conditions and issues raised or continuing from the 2006 certification or from previous annual audits; and second, four randomly chosen issues selected for verification at this audit to confirm ongoing compliance of the fishery with the MSC standard.

P 2 – Status of Previously Raised Conditions

2.1.1.1		
The nature and distribution of habitats relevant to the fishing operations is known.		
SG 60	SG 80	SG 100
<ul style="list-style-type: none"> • Some limited information on habitats exists in specific areas of the fishery, • The distribution of fishing operations is broadly mapped. 	<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> • The nature and the distribution of <u>all</u> 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: 70

Condition 2.1.1.1: The client must provide to SCS results of habitat mapping across the extent of the fishery. The mapping must use an agreed classification system. Agreement on the classification system must be reached through discussion with stakeholders and other government agencies to ensure maximum compatibility with other efforts in the region and throughout Australia.

Timeline: This condition must be met prior to the third annual surveillance of the fishery.

Client Action Plan:

- DoF to utilise the outputs from the Marine Futures project (marine mapping \$4.2 million NHT¹ project by University of WA) that is developing habitat maps and resource condition indicators and targets for areas within the WRL fishery region using an internationally recognised classification system. This project will cover significant, representative areas of the fishery (Abrolhos, Dongara, Jurien and the Capes).
- The current DoF deep-water research project includes a pilot study on deepwater habitat mapping, which will be completed and reported on in the first half of 2007. The results will be linked with information available from other sources and the shallow water habitat mapping being produced as part of the ecological research projects that are

currently being undertaken or planned by CSIRO / SRFME¹ / WAMSI¹.

- DoF to hold a workshop prior to the end of 2007 to develop an ongoing research project for ecosystem research that will address the issues raised in the EcoSRG plan and this condition.

Timeline:

The Marine Futures marine habitat mapping project and the current FRDC deep water project should be completed prior to the fishery's third annual audit. Research results that are available from these research projects at the time of the third annual surveillance of the fishery will be available for the CB's assessment team.

Progress on Condition 2.1.1.1:

Habitat maps for audit have been provided of a number of selected areas across the fishery rather than lower resolution maps across the full spatial scope of the fishery. In the maps that have been provided, two different classification systems appear to have been used and it is unclear if there has been agreement with stakeholders on the type and level of classification that has been selected to deal with the initial questions of assessing the ecological impacts of the fishery. The habitat maps from both the FRDC projects and the Marine Futures work cover only a small area of the fishery, and are not suitable as broad scale maps for initial habitat selection. Both of these provide high resolution habitat maps, but are too intensive for broadscale mapping of the habitats across the whole fishery. The Eco SRG plan indicates that the maps should be at a broad scale (and a high level of a classification) in fished waters between Mandurah and Kalbarri. (SRG Action Plan 1.3 “*Conduct broad large-scale rapid assessment protocols in waters between Mandurah and Kalbarri to determine areas of interest.*”)

The fine-scale mapping that has been conducted will provide an important basis for the further work planned to assess the ecological effects of fishing, but the choice of transects based on a rapid assessment (and broad scale habitat maps) has not been carried out. This means that the choice of location for the subsequent work is limited to only one area of the fishery, as opposed to at least three main areas at a range of depths and latitudes between Mandurah and Kalbarri envisaged in the SRG Action Plan (1.4 “*Choose a minimum of three representative transects with replicates at each location.*”). The SRG supported the concept of a number of different types of studies to be undertaken, and an initial focus on the deeper waters, taking opportunities of project partnerships as they arose, but the intention was always that these projects would sit within the conceptual model and make an integrated contribution to the development of an improved understanding of the ecological effects of the fishery across the geographical scope of the fishery. The studies now underway are an important start to resolving the matters raised in the Condition, but collectively are not a satisfactory response to the strategic questions of where to locate a more detailed and integrated set of studies focused on the key issues of ecological effects of the fishery.

Without action in the near future, there will be only very limited progress achieved on these matters within the term of the current certification, representing an important failure to comply with a condition of the certification relating to the ecological effects of fishing. This is significant since not completing a Condition within the 5-year timeframe of recertification can result in the fishery being unable to apply for future recertification.

Status of Condition 2.1.1.1:

Completion of this Condition was required prior to this annual audit. There has been only limited progress on Condition 2.1.1.1, and it is therefore here raised to a Non-Conformance for completion by November 2010.

Condition 2.1.1.1 Non-conformance 2009-2-1:
 The client is required to provide stakeholder-agreed report(s) containing detailed plans to;
 1) correct the mapping deficiency; and
 2) deploy appropriate rapid assessment protocols to identify two further (additional to the present 30° line) areas for subsequent follow up studies in representative deep and shallow water areas of a northern and southern area of the fishery.

Timeline: An agreed (with the CB) action plan that will lead to preparation of these plans within the 12-month period is to be established within five months of this audit. The report(s) will be audited in the 2010 annual audit to determine if progress at that time meets the full intent of this condition.

Client Response and Action Plan	Timeline(s)
Action plan to meet the above conditions will be developed. The timeframe for its completion will need to be extended, as the person responsible for producing it will be on annual leave from late December 2009 until the end of January 2010.	Action Plan to address all P2 issues and conditions to be completed by 31 March 2010.
Research plans to address the above conditions to be developed.	Research plan(s) to be completed by the 2010 annual audit.

2.1.1.2		
Information on non-target species affected by the fishery, including incidental mortality, is known.		
SG 60	SG 80	SG 100
The main non-target species in the fishery have been identified, and trends in abundance have been assessed.	<ul style="list-style-type: none"> ▪ 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, synthesized and assessed by fishery managers. ▪ Data and assessments about the effects of fishing on non-target species are made 	<ul style="list-style-type: none"> ▪ 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.

	available for public review.	
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Original Score: 75

Revised Score: 80

Condition 2.1.1.2: The management system must publish an annual report on bycatch and incidental interactions and mortalities of non-target species in the fishery that is available to stakeholders. Reports must begin to be published by the first annual surveillance of this fishery should it receive certification.

Client Action Plan: The data on bycatch collected as part of DoF’s Catch and Effort System (monthly returns – TEP and Icon species interactions), daily logbook (octopus catch rates), commercial monitoring (all bycatch – fish, sharks, shells, crabs, etc) and from other Government Agencies (e.g. Dept of Environment and Conservation data on whale interactions) will be analyzed and published annually by DoF (e.g. as part of the annual State of the Fisheries Report for the WRLF).

Timeline:

The first report will be produced by the end of September 2007.

Progress on Condition 2.1.1.2

The Table of Bycatch published in the 2007/08 State of the Fisheries Report is a good contribution to this requirement. If this is routinely continued, it will satisfy this certification requirement. The interactions with protected species are also adequately summarized in the 07/08 SOFR for the purposes of public transparency. The bycatch data is secured from the annual fishery independent breeding stock monitoring program, and adjusted to provide estimates of total bycatch across the fishery. Interactions with protected species are reported separately in the SOFR, extracted from the monthly logbook data in the commercial fishery.

Status of Condition 2.1.1.2:

Performance on Condition 2.1.1.2 is adequate, the fishery is in compliance in this matter, and the condition is hereby closed. Ongoing performance and independent verification of the bycatch and interaction data will be continue to be assessed in the 2010 annual audit.

2.1.1.4		
There is information on the potential for the ecosystem to recover from fishery related impacts.		
SG 60	SG 80	SG 100

<p>Key elements of the functioning of the ecosystem, including natural forcing factors, relevant to the fishery have been identified and ecosystem research is ongoing.</p>	<p>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.</p>	<ul style="list-style-type: none"> • 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.
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Score: 75

Condition 2.1.1.4: 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 create models and estimates of resilience and recovery potential of the main dependent species in the fishery. The client must ensure that the models developed take account of impacts from the fishery and the uncertainty surrounding the models and data.

Although the assessment team is not allowed to specify the mechanism for the analysis based on MSC requirements (see TAB Directives), the assessment team is required to specify the outcome. In this case, the outcome is not only the models specified above, but the use of data to facilitate the models that is equal to data from direct experimental studies using fished and un-fished areas. In previous years the assessment team has attempted to get the fishery to improve its understanding of the effects of fishing through collection and analysis of better data on the topic. The requirement for the use of robust data to inform the required models will be examined closely as part of monitoring the fishery’s performance against this condition.

The CB will require evidence that a plan (of research) to develop the specified models is developed and formally adopted within 1 year of re-certification and prior to the first annual surveillance audit. The research plan must 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.

Client Action Plan:

1. EcoSRG Research Plan has been finalized and adopted by WAFIC and DoF and will be presented to RLIAC.
2. A workshop will be held to review the results of the current DoF deepwater ecology research project and other relevant projects and to develop an ongoing research project that will address the issues raised in the EcoSRG plan and this corrective action prior to the end of 2007. It is anticipated that the research will be based on comparing fished and unfished areas using research closures that will need to be negotiated with Government and industry. Independent experts will be invited to attend the workshop.
3. It will probably take until 2010 to negotiate the selection and to implement (e.g. via legislation) the research area closures that will be required for this project.
4. Any research closures will need to be linked to and coordinated with the broader marine park planning processes that are currently being undertaken in State and Commonwealth waters.
5. The research plan developed at the above workshop will be adopted by the Client and the fishery's manager and the timelines for delivery of outcomes will be negotiated with the CB.
6. It is anticipated that at least preliminary baseline data will be collected from the proposed research closed areas by 2010.
7. The deep-water research project will be linked in with the shallow water and other ecological research projects that are currently being undertaken and are planned by FRDC, CSIRO (WfO), SRFME, WAMSI and DoF.

Timelines: The research plan will be implemented and at least 1 year of data collection and analysis (see point six above) will be available before the end of 2010.

Progress on Condition 2.1.1.4:

The target of this condition is to improve the fishery performance to at least be able to meet this standard (the 80 level), *“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.”*

This requirement infers the following needs to be determined:

1. The main ecologically dependent species that are potentially affected by the fishery,

- including the prey of WRL and the predators upon WRL;
2. models and data capable of estimating the resilience, population recovery potential and species interactions for the species determined in 1 above;
 3. models and data to determine the effects of the fishery, including uncertainty and other external factors in assessing the significance of the biomass removal (and including the consequences for the distribution and abundance of the sub-legal size classes) by the fishery on the species identified in 1 above; and
 4. there is an integrated plan of research that provides an appropriate set of objectives, actions, responsibilities, and timelines to enable Condition 2.1.1.4 to be adequately achieved.

The projects underway make an important contribution to improving understanding of the issues covered by Condition 2.1.1.4. However, Point 1 above cannot be fully satisfied because the projects are constrained to mainly the central part of the fishery in the deep waters, with some additional work in shallow waters in the southern part of the fishery. The issues addressed in both these areas will be likely significantly different from those in the more northern and deeper southern areas of the fishery. The open/closed area research project to be undertaken, while a very important first step for this fishery, on its own is too limited in scale to properly address issues across the deep water habitats at the scale of the fishery.

Some good progress on Point 2 and Point 3 above has been made, in the case of the inshore system at Jurien and in the Perth metropolitan area (the trophic models), although this is also significantly constrained because it is limited to existing knowledge of the system structure and diversity (which can only be robustly resolved by actual closure experiments for time periods up to 20 years, accompanied by appropriate field monitoring programs). So, similarly, the shallow water studies, while assisting to establish an important understanding of the lobster-habitat and trophic relationships in shallow waters, are highly constrained in their potential for inference across the spatial scale of the fishery.

There is no integrated plan of research (Point 4 above) that provides a clear mechanism for addressing the condition. The SRG Ecological Effects of Fishing Research Plan (Fisheries Occasional Publication No. 72, 14 November 2008) provides an important conceptual framework for the studies, but (and recognizing the FRDC projects both completed and recently approved) there is no clearly established process for identifying the highest information requirements and priority projects that will contribute most to achieving the condition. Overall, an integrated research plan is required that identifies how each planned outcome contributes to the issues raised by the condition.

Research Plan

The Ecological Effects of Fishing Research Plan (14Nov2008) has been developed by the SRG to respond to this condition. The plan provides important guidance to the client on design and implementation procedures in the matter of commencing to better understand the ecological effects of the fishery. In designing the Plan and reaching agreement with the various stakeholders, the SRG focused on deep water ecosystems and, while recognizing that impacts were likely in shallow waters, considered that the biggest information gaps were in deep waters, and did not give at that time weight to the issues of ecological impacts of the fishery in shallow

waters for practical action. Of particular concern are the issues of biomass reductions resulting from the fishery-derived maintenance of the lobster population biomass at or near the target egg production levels of the 1980 period (estimated at about 20% of unfished breeding biomass). Ecological impacts flowing from this are likely to occur in both deep and shallow water systems. However, the more narrow focus is considered adequate by the CB because of the difficulties of securing stakeholder and client agreement about the nature of this work, so the focus on deep waters was appropriate as an initiation strategy, but the Plan does not fully satisfy the condition. Overall, while the SRG Action Plan does not adequately address the condition in this matter, the work program established for the deep water area is considered adequate and appropriate to one important element of the issues, and will serve as a pilot to underpin further work that will be required in shallow waters to more fully address the issues raised in the condition.

Closed/Open Experiment

As part of the Ecological Effects of Fishing project established by the SRG to respond to this condition, the client has chosen to proceed to implementation of a closed/open area experiment. This is designed to assess a gradient of rock lobster fishing impacts on benthic deep water systems in the northern part of the central area of the fishery (the 30 degree line). This work has been proceeding slowly, and is limited to one deep water area of the fishery, rather than a number of areas across the fishery as required by the condition and foreshadowed in the SRG Action Plan. While the presently planned work is constrained to a single area of the fishery, it will form an important pilot study as a precursor to conducting this work in other representative areas of the fishery, as outlined in the SRG Action Plan. The current projects are designed to meet the intent of the Action Plan and the conceptual model for effects studies as established at the SRG meetings of 5 to 7 August 2004, but there is no overall integration of this work to meet either the SRG intention or to develop an improved understanding of the ecological effects of the fishery. The final resolution and agreement to the area for closure to fishing is required urgently, so that the required follow-up monitoring/studies can proceed in a timely manner to successfully meet all the requirements of the Condition.

Eco SRG

The Eco SRG has been replaced by a more operations and implementation focused group (the SAG). The SAG is an important and useful group to have established within the management system, but it is not a suitable replacement for the Eco SRG. The SAG lacks both the independence and the high-level international scientific expertise in ecological impacts of fishing that the former SRG was established to provide. The SAG therefore does not provide appropriate levels of strategic guidance on research requirements on the issues identified in the certification and the condition, and does not provide for an appropriate level of accountability (it is an informal group) or public transparency (stakeholders are not involved and the proceedings and decisions are not placed in the public domain in a timely way). The key test for independence of members in this matter is that there is no likelihood of a conflict of interest in the sense that no decisions or processes of the SRG are likely to result in any research or financial benefits to a member. This includes independence from any fishing industry funding system that operates in, or provides benefits to, WA projects. The SAG as now established is an important and useful forum for the internal process of detailed design and operationalisation of the research studies, but it is not the correct vehicle to establish a strong and technically robust independent strategic oversight of these ecological impact issues (which the CB recognises are complex and

demanding in a number of dimensions). The client will be required to reconstitute the independent expert strategic guidance function of the former SRG within a new structure and process for providing independent expert guidance. This will consist of at least 2 independent expert members approved by the CB, with processes/procedures and a TOR consistent with those of the former SRG (although it may not necessarily be the same size/complexity or operate in the same manner as the former SRG).

Status of condition 2.1.1.4:

Condition 2.1.1.4 remains open. While some progress has been made, a number of issues remain. The progress so far, as established at this audit, shows that the condition that one year of data collection relevant to the issues of this condition is highly unlikely to be adequately met by the end of 2010. The condition is therefore raised here to a Non-Conformance.

Condition 2.1.1.4 Non-conformance 2009-2-2:
 The following additional activities are now required from the client:

1. within 9 months, a plan to extend the ecological effects of fishing research plan in an appropriate way must be developed and agreed with the CB, and will include specific objectives, research targets, responsibilities, activities, and timelines for cost-effective research studies that are coherent with the approach (conceptual model and action plan) developed by the former Eco SRG to address these matters, and to properly address the 4 points of the Audit Findings above;
2. the extended research plan must be developed in conjunction with an appropriately constituted group to replace the strategic, independent and expert guidance functions of the former Eco SRG, and be made available for SAG response, peer review, and stakeholder comment.
3. the current projects should be continued as planned, so that research data and outcomes may be delivered in time to partly satisfy the condition (outcomes by end of 2010).

Timeline: the revised research plan must be provided to the CB no later than September 2010.

Client Response and Action Plan	Timelines
A revised/updated research plan taking account of the issues raised above will be provided to the CB within 9 months after the date of agreement on the audit, i.e. late December 2009.	Progress to meet this condition will be reported by 31 May 2010. A revised/updated research plan to be completed by 30 September 2010 or the 2010 annual audit, whichever is earlier.

2.1.2.1		
The trophic linkages and interactions between the non-target species and the target species are known.		
SG 60	SG 80	SG 100

<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> ▪ 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.
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Score: 75

Condition 2.1.2.1: The first part of this condition is the same as for 2.1.1.4.

The client must also include in the research plan 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.

The results of these studies must be incorporated into any new ERAs conducted on this fishery.

Should these studies result in the identification of impacts under a new ERA that require mitigation, there must be a management response that is fully identified and implemented to mitigate the impacts prior to the conclusion of this certification in 5 years. This is the same timeframe built in to the condition under 2.1.1.4.

Client Action Plan:

- EcoSRG Research Plan has been finalized and adopted by WAFIC and DoF and will be presented to RLIAC.
- A workshop will be held to review the results of the current DoF deepwater research project and to develop an ongoing research project that will address the issues raised in the EcoSRG plan and this corrective action prior to the end of 2007. It is anticipated that the research will be based on comparing fished and unfished areas using research closures negotiated with Government and industry. Independent experts will be invited to attend the workshop.
- The research plan developed at the workshop will be adopted by the Client and the fishery's managers and the timelines for delivery of outcomes will be negotiated with the CB.
- It will probably take until 2010 to negotiate the selection and to implement (e.g. via legislation) the research area closures that will be required for this project.
- The deep-water research project will be linked in with the shallow water and other ecological research projects that are currently being undertaken and are planned by CSIRO, SRFME, WAMSI and DoF.

- The research plan will 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 results of these studies will be incorporated into any new ERA conducted on the fishery.
- Should a new ERA (using results from the new studies) identify impacts that require mitigation, there will be a management response that is fully identified and implemented to mitigate the impacts prior to the conclusion of this certification, i.e. by November 2011.

Timelines: WAFIC will use its best endeavours to meet the above timelines, however, the implementation of any mitigation measures may not be possible within the 5 years of this certification if they are not identified until late in the cycle or they require extensive consultation with stakeholders.

Progress on Condition 2.1.2.1:

The proposed research project (closed/open area studies) will address the local scale issues of the impacts of lobster density on prey items, and any related habitat interaction issues. However, it is short term, and will provide for only a limited array of effects to develop, which will be recognisable only with detailed and intensive studies and data analysis. Without more expansive scales of space and time, and more representation of habitat types from amongst those that occur in the fishery, this may lead researchers to erroneous conclusions about the impacts of the fishery. This matter is addressed in the above Condition 2.1.1.4 Non-conformance (2009-2-2).

Two new risks were established during the last year: the ecological risks posed by low abundances of puerulus settlement, and the risks to sea lions posed by fishing in the Abrolhos Islands area.

Low Puerulus Settlement: there is no evidence that the ecological risks of this are being addressed at any level in the fishery management system at present. Good progress is being made on the question of local scale impacts of lobster density on their prey, through the implementation of the closed/open area project and in the terms of the new FRDC Project. However, the 80 level of performance covers all the life stages of the lobster and the predators on lobsters.

The impacts of predators and competitors appears to not be well addressed by the open/closed experiment or the shallow water studies to date, as discussed above, and therefore this condition remains open. One year of data collection relevant to the issues of this condition is highly unlikely to be adequately met by the end of 2010. This is therefore a matter that must be provided attention within the development of the new research plan required under Condition 2.1.1.4 Non-conformance 2009-2-2.

Sea lions at Abrolhos: this matter is addressed separately below.

Status of condition 2.1.2.1:

The condition is therefore raised here to Non-Conformance 2009-2-3.

Condition 2.1.2.1 Non-Conformance 2009-2-3:

The client must develop an integrated plan of research that specifically addresses the ecological impacts of low levels of puerulus settlement across the full spatial scale of the fishery.

Timeline: This research plan is required to be implemented within the terms of Non-Conformance 2009-2-2 above, August 2010.

Client Response and Action Plan	Timeline(s)
An integrated plan of research that specifically addresses the ecological impacts of low levels of puerulus settlement across the full spatial scale of the fishery will be developed.	Progress to meet this condition to be reported by 31 May 2010. An integrated plan of research will be completed by 31 August 2010.

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.

SG 60	SG 80	SG 100
<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> ▪ 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: 70

Condition 2.1.3.1: The client must present evidence in the form of a scientifically defensible examination of the fishery’s compliance with the Bait Handling Code of Practice that assesses the risks associated with the use and disposal of bait bands. Scientifically defensible here means that the study is quantitative and statistically relevant in terms of identifying how these materials are treated at sea, and evaluates the number of bands and the mass of materials taken onto and off fishing vessels, in various seasons and regions of the fishery. This must be completed prior to the third annual surveillance of the fishery.

If results show that compliance with the Code of Practice is not sufficient, the client must adopt methods of enforcing the Code of Practice. This must be implemented prior to the fourth annual surveillance of the fishery.

The client must also develop and implement methods to assess compliance on an ongoing basis. This must be implemented prior to the fourth annual surveillance of the fishery.

Client Action Plan:

Bait Bands

- The WAFIC Board has passed a motion proposing to prohibit the taking of bait cartons with plastic bands to sea. That is, it is proposed to recommend to Government that it be made an offence to take plastic bands to sea. WAFIC has sought views on this proposal from its members. Whilst there has been support for the proposed prohibition further consultation is required to clarify a number of issues and time will be required to have the measure implemented (e.g. via legislation).

Other issues

- WAFIC will undertake a compliance risk assessment for compliance with the Bait Handling Code of Practice compared to total prohibition for waste products.
- If required, funding will be sought by WAFIC during the 2007/08 funding cycle to instigate a statistically valid sampling programme to determine the level of compliance by fishers with the Bait Handling Code of Practice. The aim will be to complete the sampling programme by the end of the 2007/08 fishing season.
- WAFIC will continue to monitor the results of beach cleanup operations that provide an analysis of the composition of rubbish to determine what if any can be attributed to the lobster fishery.

Timelines: The above actions will be undertaken prior to the third annual audit of the fishery, i.e. by September 2009.

Progress on Condition 2.1.3.1:

The client is intending that bait bands will be fully prohibited from use in the fishery, however a Ministerial decision on this matter has not been taken, and it is unclear when such a decision might be made. In the interim, risks are mitigated in the fishery in a voluntary manner, through the cutting of all bands and the return of bands to shore for land-based disposal.

Status of Condition 2.1.3.1:

This condition remains open, and progress towards the full prohibition of bait bands on lobster fishing vessels will be further assessed in the 2010 annual audit.

Client Response and Action Plan	Timeline(s)
Currently waiting on a Ministerial announcement to ban bait bands.	Anticipated early 2010.

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.

SG 60	SG 80	SG 100
<ul style="list-style-type: none">▪ 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.	<ul style="list-style-type: none">▪ 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.	<ul style="list-style-type: none">▪ 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.

Original Score: 70

Revised Score: 80

Condition 2.1.4.1: The first part of the condition under 2.1.4.1 is to complete the work now underway by Richard Stoklosa of E-Systems on re-assessing risks identified in the 2005 ERA conducted by the Department of Fisheries. This work must be completed within 18 months of the date of certification unless sufficient cause can be shown and agreed by SCS and, as necessary, members of the original assessment team.

The second part of the condition under 2.1.4.1 is to conduct a new Ecological Risk Assessment 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). A new ERA must be conducted directly following the completion of the work underway by Richard Stoklosa (E-Systems). The new ERA must occur within 12 months of the completion of the work of Richard Stoklosa, and at a minimum before 3 years after 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.

Client Action Plan:

- The ERA project undertaken by independent consultant Richard Stocklosa will assess/review all hazards from the 2005 ERA that received a moderate or higher score by at least one participant at the 2005 workshop. The hazards that are still identified as moderate risk will be put them through a CSIRO level-2 assessment. This project will be completed by April 2008.
- WAFIC to commence a new ERA process for the fishery within **four** years of certification (i.e. not three years as proposed by the CB). The new ERA will meet the requirements identified by Dr. Mark Burgman in his 2005 review of ERA methods.

Timelines:

- For all practical purposes the Stocklosa ERA project to assess/review all hazards with a moderate or higher risk and where applicable put them through a Level 2 CSIRO assessment, will be equivalent to an ERA. Stocklosa will conduct an ERA workshop with technical experts and stakeholders to review the hazards and where appropriate develop mitigation measures to address them or progress them to a Level 2 CSIRO assessment. Therefore the requirement to conduct a new ERA three years after certification is considered impractical, as it may only be 18 months after Stocklosa's ERA project is completed. In addition the new research programs (stock assessment and ecological) that should feed into a new ERA may not have been running long enough to provide adequate data for a reassessment of risks. Therefore it is proposed to commence a new ERA within four years of the date of certification, i.e. by November 2010 (i.e. not three years as proposed by the CB). This will provide as much time as possible for new information to be available from planned research projects and is consistent with existing government policy (ERA's to be undertaken every five years).
- The new ERA will cover all the aspects of the 80 scoring guidepost for this indicator, but the information from the research comparing fished and non-fished areas may not be available to put into the ERA, as this project will not be completed in the timeframe set out in this condition.

Progress on Condition 2.1.4.1: This condition is closed and rationales can be found in the 2008 Surveillance Report at <http://www.msc.org/track-a-fishery/certified/south-atlantic-indian-ocean/western-australia-rock-lobster/reassessment-downloads/WRL-2008-Ann-Surv-Report-Final.pdf>

Status of Condition 2.1.4.1: Adequate progress has been made and this Condition is now closed.

2.1.4.2		
Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction.		
SG 60	SG 80	SG 100
The management system includes some level of impact identification and avoidance/reduction in the main areas of the fishery.	<ul style="list-style-type: none"> • 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.). 	Management objectives and strategies to detect and reduce impacts have been developed, tested and are deployed across the fishery.

Score: 75

<p>Condition 2.1.4.2: To meet the requirements of the performance indicator, the client must ensure that management performance meets the 80 scoring guidepost which states:</p> <ul style="list-style-type: none"> • “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.)” <p>A description for the operation of the WRL Management System, that includes the EMS (Environmental Management System) and the ERA, has been provided through correspondence between the Department of Fisheries and SCS. This system description suggests that the entire management system would adequately handle the required environmental factors if there was evidence that all the parts of the system described in the WRL-MS and EMS provided to SCS were actually active and working.</p> <p>Fully implementing all the prescribed parts of the management system (as noted above), or some other similar construct would be sufficient to meet the intent of this Condition. The system chosen and implemented must properly addresses the following key aspects:</p> <ul style="list-style-type: none"> • 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. <p>This condition must be met within 1 year of the date of certification and prior to the first annual surveillance audit.</p>
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Client Action Plan:

- An “Ecological” advisory group will be formed to advise WAFIC, RLIAC, the DoF and the Minister on ecological issues pertaining to the fishery. The group to meet at least annually.
- EMS for the fishery to be updated/revised/implemented and information regarding its progress published every 6 months as set out in the second dot point above.

Timelines:

The above actions will be implemented by October 2007.

Progress on Condition 2.1.4.2:

The audit team has been presented with evidence that there is a proposal to change fundamentally the way in which the fishery is managed (the proposed model from Consultation Working Group, July 2009). While the proposed model does not preclude any of the consultative committee structure described above, except for the provision of independent technical advice to the Department or the Minister, it is unclear how the previous arrangements will be adapted into the new model, nor when the new model will actually commence. The proposed model separates consultation into management and strategic (likely to be a useful separation), but there appears to be no standing or structural consultation requirements at the departmental level, and all forms of consultation appear to be proposed as optional. It seems that there is not intended to be an ongoing and clear system in place to provide for experts and stakeholders from outside the department to be engaged into the management system, or to provide any form of normative and independent advice in terms of environmental management issues. This is an identical problem to that posed by the failure of implementation of an Environmental Management System in the fishery management system, and the subject of this condition.

The matter of an effective and transparent EMS for this fishery has been an issue since the 2006 certification, and both the present and the newly proposed system for taking and acting on consultation and advice in environmental issues appears to be no more effective, and is probably less effective, than it was at that time. This Condition has been carried over (extended) for two consecutive years.

Non-Conformance 08-05 (issued at 2008 surveillance, now void): A non-conformance will stay in place until the EMS is finalized and implemented. The progress made is significant; however, until the EM is fully agreed and implemented, the Condition is not met. The new timeframe agreed with the client is to complete the EMS implementation process by the start of the 3rd Annual Surveillance.

Status of Condition 2.1.4.2 & Non-Conformance 09-05:

The lack of progress on this matter together with the uncertainty now raised by the restructure of all consultation arrangements has resulted in the condition being raised to a new Non-Conformance.

Condition 2.1.4.2 Non-conformance 2009-2-4:

The client must provide evidence of an effective and ongoing system for consultation with

stakeholders and independent scientific guidance for environmental issues across the fishery, and evidence for how this information is used in determining management policy and strategies for environmental issues in the fishery. This may be best presented in the form of an EMS for the fishery, with specific details about the structure and processes that operate to establish normative and independent advice on environmental issues.

Timeline: The evidence, including a description of the structures and evidence of effective operation, must be presented in full for assessment at the 2010 annual audit.

Client Response and Action Plan	Timeline(s)
Agreed. To be incorporated into the EMS	To be reported at the 2010 annual audit

2.2.1.4		
The impacts of the fishery on protected, endangered, threatened, or icon species do not exceed acceptable levels.		
SG 60	SG 80	SG 100
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.	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.	<ul style="list-style-type: none"> 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

Condition 2.2.1.4: For protected, endangered, or threatened species other than sea lions, the client must provide direct assessments of the risks to these species either before or as part of the required ERA (see Condition under 2.1.4.1). As stated above, the species for which risks need to be assessed in a more rigorous fashion include whales, dolphins, turtles, seabirds, and seahorses.

For sea lions, the data is clear. The assessments show that risks are higher than previously thought, so management actions are required to maintain the risks within acceptable levels. The condition for sea lions is therefore the implementation of SLEDs and the verification of their efficacy.

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.

If any of these objectives are not met, the fishery would not qualify to maintain a certificate and the certificate would be revoked.

Client Action Plan:

- SLEDs have been introduced to the fishery for the 2006/07 season.
- To assess the effectiveness of SLEDs, the Sea Lion-SRG has proposed that additional underwater videoing be undertaken at times and in places where vulnerable sea lion pups are present. Information from the commercial rock lobster compliance program will also be used to ensure pots in the designated area are using SLED. The workshop, which will be part of Richard Stocklosa's ERA project, will be used as a vehicle to bring together all interested parties to review the proposal by the Sea Lion-SRG to assess the efficacy of SLEDs. The final plan to monitor the effectiveness of SLEDs will be provided to the CB.
- The workshop, which will be part of Richard Stocklosa's ERA project to reassess the hazards identified at the 2005 ERA as moderate or higher by at least 1 participant, will also be used to reassess the risk ranking of whales, dolphins, turtles, seabirds, and seahorses, if they do not fall into the moderate or higher group.
- Any actions needed to address the issue will be introduced in the **2007/2008** (note the season mistake in the condition above) fishing season or sooner if appropriate.

Timeline:

- The above actions will be completed by the end of April 2007.
- Any implementation will take place in the **2007/2008** fishing season or sooner if appropriate (note the season mistake in the condition above).

Progress on Condition 2.2.1.4:

SLEDs have been implemented in the required zone, and sea lion bycatch is reported to be nil in 2006/07 (SOFR 2007-08). More recent data was not available for audit, although the compliance of the fishery with SLED requirement is reported as better than 95% and so the risk to sea lions is considered to be low. No information was provided on marine mammal interactions.

Status of Condition 2.2.1.4:

The condition is remains open, and will be audited in detail at the 2010 annual audit. At that time, the client will be required to provide a report that provides an independent verification (fishery independent) of the sea lion bycatch rate for the 08/09 season. At that time, evidence will also be sought of the annual marine mammal interaction rate in the fishery since 2006, which may be sourced from data compiled by the Department of Environment and Conservation.

Condition 2.2.1.4 (2008, now void): The new information on the effect of pots on sea lion pups and mothers in the Abrolhos Islands has identified the need for further implementation of SLEDS in this area. SLEDS have been proposed in the Abrolhos Islands on a voluntary basis for the 2009-2010 fishing season. A new Condition is therefore implemented that requires implementation by the 2009-2010 fishery given the recommendations of the Sea Lion SRG.

Progress on Condition 2.2.1.4 (2008):

There has been a limited voluntary introduction of SLEDS into pots deployed within the Abrolhos area, and the WRLC has not been able to secure a mandatory deployment. There is only limited support for this initiative from the industry because of the lack of historical interaction, based on the lack of observed interactions. However, the SeaLion SRG has identified the importance of the risk to the populations from a potential bycatch of more than 2 sea lion pups per 18 month period, and so there is a significant disincentive for voluntary reporting of bycatch and significant population implications for sea lions. The risk remains, and the condition remains a high priority.

Status of Condition 2.2.1.4 (2008):

This condition remains open and has been modified into Non-Conformance 2009-2-5 below. Performance will be audited for compliance at the 2010 annual audit.

Condition 2.2.1.4 Non-Conformance 2009-2-5:
The implementation of SLEDS into the risk areas of the fishery in the Abrolhos is required for the 2011 Zone A fishing season.

Client Response and Action Plan	Timeline(s)
SLEDS will be made mandatory for the risk areas in Zone A (Abrolhos Is.) by the 2011 fishing season.	15 March 2011.

2.2.2.1		
SG 60	SG 80	SG 100
Management objectives and fishing practices are set in terms of impact identification and avoidance/reduction to avoid or mitigate impacts of the fishery.		
Specific interactions have been identified, and some management systems are in place to reduce impacts although they may not	The key impacts of the fishery have been established through a robust scientific process and agreed through public consultation.	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

<p>have been fully tested.</p> <p>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.</p>	<p>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.</p>	<p>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.</p> <p>The effectiveness of mitigation strategies in restraining the impacts of the fishery is regularly reviewed through independent external expert review.</p>
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Score: 75

Condition 2.2.2.1: Same as for Condition 2.2.1.4 above.

Client Action Plan: Same as for Condition 2.2.1.4 above.

Progress on Condition 2.2.2.1:
As for Condition 2.2.1.4 above.

Status of Condition 2.2.2.1:
As for Condition 2.2.1.4 above.

Client Response and Action Plan	Timeline(s)
As for Condition 2.2.1.4 above.	15 March 2011

P 2 – Random issues for Surveillance review

A. Ecological impacts of the fishery

Unexploited Biomass: documentary evidence, including reports, models, or empirical data that provides estimates of the unexploited biomass, and particularly estimated spatial distribution of different age classes prior to exploitation.

Note: this is not a request for information on the current levels of breeding/legal sized biomass.

Audit Finding

The client reports that a new monitoring program is being established to monitor the fishery-independent abundance of sub-legal sizes of lobsters. It is expected that this will provide an estimate of the distribution and abundance of the sub-legal lobsters in relation to a number of depth and habitat types. Although modelling has not yet been conducted, together with other information being gathered or existing, this information could be used as one approach to inform estimates of unfished biomass, an important step in estimating the overall type and extent of ecological impacts of the fishery.

Audit Outcome

This monitoring program indicates satisfactory progress on this matter, and the fishery remains in compliance with the MSC Standard in this matter.

B. Functioning of the Eco SRG

Agenda and Minutes: copies of the full agendas, attendances, and signed-off minutes of all meetings of the Eco SRG (or its replacement entity) in the last 3 years.

Audit Finding

The Eco SRG has been discontinued and aspects of its former function have been replaced within the SAG.

Audit Outcome

This matter is covered by condition 2.1.4.2 above.

Client Response and Action Plan	Timeline(s)
As for Condition 2.1.4.2 above.	2010 annual audit.

C. Functioning of the Sea Lion SRG

Agenda and Minutes: copies of the full agendas, attendances, and signed-off minutes of all meetings of the Sea Lion SRG (or its replacement entity) in the last 3 years.

Audit Finding

This SRG remains active, and is providing a good level of technical guidance and support for the issues of sea lion interaction in the fishery.

Audit Outcome

There is satisfactory progress and the fishery remains in compliance with the MSC Standard on this matter.

D. Sea Lion Bycatch

Documentary evidence on the monitoring data and the monitoring system for sea lion bycatch from last 3 years in all areas of the fishery.

Audit Finding

Indicator 2.2.1.4: 80 level performance:

“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.”

The State of the Fishery Reports provide a short summary of the bycatch of sea lions, but there are no formal data reports or mechanisms for independent verification to be able to demonstrate the expected ongoing low level of bycatch.

Audit Outcome

A Non-Conformance is raised in relation to Indicator 2.2.1.4.

Condition 2.2.1.4 Non-Conformance 2009-2-6:

At the 2010 audit, a report on bycatch, an independent verification of the level of bycatch, and information on compliance with SLED deployments (voluntary and mandatory) in all risk zones in the last 3 years of the fishery will be required as evidence to demonstrate ongoing compliance.

Client Response and Action Plan	Timeline(s)
<p>The Sea Lion SRG determined that it would not be statistically, practically or economically feasible to undertake an independent at sea verification of the level of sea lion by catch in the fishery, because the interactions are extremely low (estimated at approx one interaction for every two to three million trap lifts). The approach developed by the Sea Lion SRG was to introduce SLEDs to the risk zones of the fishery and to ensure the efficacy of the SLEDs by undertaking video trials of sea lion interactions (particularly pups) with traps fitted with SLEDs and to independently verify SLED compliance in the designated risk zones. All of this has been done for the coastal risk areas and will be done in relation to the designated risk zones in Zone A (Abrolhos Is.), as of 15 March 2010.</p> <p>SLED compliance data from the last three years years and a design for an independent (non-atsea) verification of bycatch in 2011 will be provided at the next annual audit in 2010.</p>	Annual audit in 2010.

PRINCIPLE 3

This section of the report covers the findings and outcomes of the November 2009 Audit of the Western Rock Lobster fishery against the Principle 3 issues. The section comprises two parts: first, outstanding conditions and issues raised or continuing from the 2006 certification or from previous annual audits; and second, randomly chosen issues selected for verification at this audit to confirm ongoing compliance of the fishery with the MSC standard.

P 3 – Status of Previously Raised Conditions

3.1.4.2		
The management system has a plan for research needed to support the understanding of the ecological impacts of fishing.		
SG 60	SG 80	SG 100
Some limited research to support ecosystem management is undertaken, and some of the research results are considered and adopted within the management system.	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.	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: 75

Condition 3.1.4.2:
 The client must get developed and implemented a mechanism to ensure the ongoing development of a plan to conduct strategically based research that incorporates all the research needs of the fishery, including those identified throughout this report and as a result of ongoing conditions from this assessment (such as stock assessments, ERAs, fishing impacts, etc.). A research plan must be developed, updated annually, and made available to the public annually.

This condition must be met prior to the first annual surveillance audit.

Client Action Plan:
 A research plan to address the ecological impacts of rock lobster fishing has been developed by the Eco-SRG and has been adopted by WAFIC and DoF and will be presented to RLIAC.

Timeline: The actions above will be completed by September 2007.

Progress on Condition 3.1.4.2:

The Eco SRG no longer exists and no annually updated plan was available at the audit. Much of the discussion re this item was made under Principle 2.1.4.2. But the actual plan falls within 3.1.4.2

Status of Condition 3.1.4.2: Open – Behind Target

The Condition is continued and **Non-Conformance 2009-3-1 is issued**. The completed production of the EMS document before the next annual audit should determine which group will produce the annual research plan.

Condition 3.1.4.2 Non-Conformance 2009-3-1:
The client must provide evidence of the development of a plan to conduct strategically based research that incorporates all the research needs of the fishery, including those identified throughout this report and as a result of ongoing conditions from this assessment (such as stock assessments, ERAs, fishing impacts, etc. The plan must specifically include research to address the ecological impacts of rock lobster fishing. The research plan must be developed, updated annually, and made available to the public annually.

Timeline: The evidence, including a description of the structures and evidence of effective operation of the research plan must be presented in full for assessment at the 2010 annual audit.

Client Response and Action Plan	Timeline(s)
This will be addressed through the EMS. See also responses to 2.1.1.1, 2.1.1.4, 2.1.2.1 and 2.1.4.2.	2010 annual audit.

3.3.1		
The management system involves all categories of stakeholders appropriately on a regular, integral, explicit basis.		
SG 60	SG 80	SG 100
The management system makes decisions after consulting major stakeholder groups.	The management system provides effective processes for the involvement of stakeholders, and makes decisions after consulting all significant stakeholder groups.	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

Condition 3.3.1: *(this condition now void)*
The management system must provide opportunity for better representation of all stakeholder views and concerns in the advisory functions associated with management of the fishery. The continued lack of representation of stakeholders in the conservation community concerned with ecological impacts from fishing have been apparent and the focus of previous conditions from the first assessment of the fishery in 1999/2000. 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.

Progress on Condition 3.3.1:

The audit team was advised that WRLC and DoF are currently undertaking a review of the consultation and advisory processes and structures. The current Ministerial Advisory Committee (MAC) system (including RLIAC) is to be scrapped (see Attachment 3.1 Report of the Consultation Working Group). Changes to the *Fisheries Management Act 1994* are currently being drafted to achieve these changes and to set up an Aquatic Advisory Committee (AAC) and a new enhanced role for WAFIC as the peak body with key sector bodies representing the commercial fishing industry interests, should be considered by Parliament in 2010. Part of the task of the review is to identify ways to better represent and engage with stakeholders on aquatic and fisheries management issues. This should include consultation with all stakeholder groups including the public, recreational fishers, tourism, the boating industry, indigenous groups, conservation, Commonwealth Government, State Government Agencies, etc. However, it should be noted that the new communication plan to make these changes is still subject to Parliamentary approval and may be modified, or even scrapped during the approval process.

Status of Condition 3.3.1:

The original Condition timeline has lapsed. With the scrapping of RLIAC the Condition cannot be addressed in the manner originally envisaged. The continued lack of representation of stakeholders in the conservation community concerned with ecological impacts from fishing remains unsatisfied. A revised Condition for indicator 3.3.1 is required.

Condition 3.3.1 (2009):

The implementation plan for the new consultation arrangements indicates Full Implementation by 1 July 2010. A full report of the new consultation arrangements is required by SCS by 1 July 2010. This report should be comprehensive and show the final Consultation Model and details of the new committees including their composition, operational and reporting arrangements.

Client Response and Action Plan	Timeline(s)
The client will use its best endeavors to meet this condition, however, it is the Department of Fisheries' consultation processes that are referred to and although the client will have input it does not have control over the final outcomes or the timing of implementation.	Progress will be reported by 1 June 2010. The client will endeavor to provide a full report by 1 July 2010.

P 3 – Random issues for surveillance review

3.3.2 The management system provides for timely and fair resolution of disagreements.

In the last few months there have been continual reports that a number of stakeholders, including fishers, disagree with the management arrangements introduced over the last two seasons.

These have included legal action against the Minister, public letters in the newspapers attacking the Department and the Minister, and public meetings expressing a lack of confidence with the Department and the Ministers.

Review of DoF's response to the Audit Request

The operational structures that manage the fishing system and the lines of authority and decision-making that operate to resolve disagreements have not changed. It is understood that the Minister for Fisheries does not have to consult with stakeholders if there is an emergency situation requiring immediate action, however, he has consistently consulted with major stakeholders even when there is an extremely tight timeframe to draft legislation and implement management arrangements.

Audit Response

Principle 3.3.2 remains in compliance with the MSC Standard in this matter.

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Appendix 1 – Gill Waller Stakeholder Submission Email

From: Gil Waller

Sent: Wednesday, November 04, 2009 12:15 AM

To: Jason Swecker

Subject: Re: Western Rock Lobster MSC meetings

Jason

Hi, sorry I couldn't get there yesterday but we were hosting a Melbourne Cup party - (and I drew the winner)

It is slowly becoming more important than ever to retain the MSC Certification and I don't wish to jeopardize that.

My few comments are that Fisheries have been lazy and too reliant on one main indicator to ensure the future of the Fishery. There are not enough real hands on research and too much playing computer games and 'what-if' scenarios. (We all know they can be made to come out where-ever you want them). They have been exposed as having no Plan D, C or even a B and now find themselves caught with their pants down so to speak.

The snapshot of one of my spreadsheets with El-Nino overlay shows the work I have done to keep an independent record and cross check since I came to WA in 1971, along with accurate data sourced for the earlier years. (I left school and started fishing in 1962 in SA and still own boats, but no longer fish myself). The full spreadsheet on Excel showing Survival Ratio Calcs and possible Quota ones also is available should you want it

The collapse seems too sudden to be caused by problems with the breeding stock, or even misjudgment of the effect of leaving the larger animals - a decision I am not happy with. Back in 1992 I presented a paper with calculations showing that the future lay in increasing the gauge size. As a result it was brought up 1 mm for the whites only. I strongly believe that at least 2 mm was required and for the whole year, and the leaving of larger animals, in effect asking the 'grandmas and grandpas' of the population to ensure survival was a mistake.

It will be very important tool to recognize that last years catch, and this years, are not the true available catch as with the intervention of the Minister in these years we have an artificially low catch record that future readers may see as much more of a collapse than it really is - a security measure.

My last thought is whether there may one day be found some environmental or climatic common link with the almost simultaneous weakening of the lobster catches in SA and Tasmania that would explain a lot of our current problems

Many thanks for your time. I can be reached on my mobile XX XXXX XXXX most times should you wish to speak with me, or email also of course

Regards

Gil Waller

APPENDIX 2 – DOUG BATHGATE STAKEHOLDER SUBMISSION EMAIL

From: douglas george bathgate
Sent: Tuesday, November 03, 2009 10:35 PM
To: Jason Swecker
Subject: Re: Western Rock Lobster MSC meetings

Thank you Jason,

I regret being unable to attend yesterday's meeting. The following is a comment from RFAC for your consideration.

In relation to future harvest policies that may be established, RFAC firmly believes that the allocation set down by IFM should remain and that the Recreation sector be allowed to manage its 5% allocation according to the parameters set down by the SCS Management team. We do not believe that the Commercial sector should dictate terms in this matter. So far the recreation sector has managed its share well within the policies set by the Department and will continue to do so.

Regards
Doug Bathgate
Chair RFAC

APPENDIX 3 – LETTER FROM MINISTER TO SCS

Our Ref: 26-05344

Dr C Chaffee and Dr S Daume
Sustainable Seafood Certification Program
Scientific Certification Systems
2200 Powell St. Suite 725,
Emeryville CA 94608,
USA



MINISTER FOR MINES
AND PETROLEUM;
FISHERIES;
ELECTORAL AFFAIRS;
LEADER OF THE
GOVERNMENT IN THE
LEGISLATIVE COUNCIL

Dear Dr Chaffee and Dr Daume

SUSTAINABILITY OBJECTIVE FOR THE WEST COAST ROCK LOBSTER MANAGED FISHERY

I have been advised that before finalising the 2009 Marine Stewardship Council audit report for the West Coast Rock Lobster Managed Fishery, you would like confirmation of the sustainability objective on which I have based recent management decisions.

In this regard, I advise that I endorse the following primary sustainability objective for the fishery:

Ensure that the breeding stock (egg production) in each Zone of the fishery remains above its threshold level (currently the 1980 level), and the probability of still being above this level in five years time is at least 75%.

Application of this objective was a key driver behind the 2009-10 management package which I announced on 24 September.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Norman Moore", followed by a long horizontal line.

**NORMAN MOORE MLC
MINISTER FOR FISHERIES**

07 DEC 2009

APPENDIX 4 – RUSS BABCOCK STAKEHOLDER SUBMISSION EMAIL

From: Russ.Babcock

Sent: Monday, November 30, 2009 9:39 PM

To: Jason Swecker

Cc: Tony.D.Smith; Trevor Ward

Subject: RE: Western Rock Lobster MSC meetings

Hi,

Its probably too late for this but here are some thoughts on the state of the WRL fishery and associated ecosystems:

Direct effects on WRL: a presentation from the 2007 WRL SRG meeting at Hilarys and my paper on the *P. cygnus* population at Rottnest Island (in my view possibly more representative of deepwater populations than shallow). My views on the current situation with the poor recruitment of the stock are that this is most likely a result of spawning stock depletion, with spawning biomass closer to 1% than 15% of its potential. Also see comments in the last paragraph of the paper. The limited time series in the powerpoint shows a couple of things i) Populations in spatial closures can be sensitive to short term changes in populations, and that it is possible to pick these up reliably with diver surveys. There may even be some useful abstract metrics that could be applied as thresholds etc. ii) Given the recent questions in the WA media (by Stark et al) about whether the recruitment has failed or not, it is surprising that such surveys have not been done (or maybe they have and I just haven't heard). There are plenty of useful historical data in addition to ours that would provide a useful basis for comparison.

Indirect effects on ecosystem: these are probably minor, especially relative to other lobster dominated ecosystems. This is indicated by observations at Rottnest Island (see ppt presentation) as well as by ecosystem modelling (EwE) conducted for shallow waters at Jurien (See conclusions on page 20 of MS – in press in MFR). Trophic linkages of WRL are numerous and span multiple trophic levels.

Sorry I have not included Bruce and Chet in this email as I don't have their email addresses.

Cheers,

Russ

Dr. Russ Babcock

CSIRO Marine and Atmospheric Research

APPENDIX 5 – WWF STAKEHOLDER SUBMISSION, NOVEMBER 2009



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WWF-Australia Submission

MSC Reassessment – Principle 1

The Western Australia Rock Lobster Fishery

November 2009

Introduction

WWF-Australia has prepared this submission in response to the decision by Scientific Certification Systems (SCS) to conduct a partial reassessment of the Western Rock Lobster Fishery (the Fishery) as it pertains to Principle 1 – Stock Status and Harvest Strategy. This decision was prompted by the concerns of SCS that:

- the current long standing predictive model for puerulus settlement which had previously provided a good explanation of the variations in settlement did not adequately explain the recent low settlements (particularly in 2008/09), and
- the breeding stock may have declined to a point where it is impairing recruitment.

WWF-Australia shares these concerns and has articulated these in previous submissions to SCS and the Western Australian Minister for Mines, Petroleum, Fisheries and Electoral Affairs (see Llewellyn, 2008, 2009a and 2009b; and Trott, 2009). This submission draws on the views expressed in those previous submissions and on the most recently available information on the Fishery to provide an assessment of the Fishery against MSC Principle 1. In accordance with the advice of SCS, this assessment has been conducted against the performance indicators and scoring guideposts used in the 2006 Assessment of the Fishery.

In addition, WWF-Australia has identified a number of additional concerns that it has for the sustainability of the Fishery and the ecosystem in which it operates.

Assessment against MSC Principle 1

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.

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.

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	Scoring Guidepost 80	Scoring Guidepost 100
There is only a moderate degree of confidence in proper identification and reporting of the target species.	There is a high degree of confidence in proper identification and reporting of the target species.	There is a very high degree of confidence in proper identification and reporting of the target species.

The western rock lobster (*Panulirus cygnus*) is clearly differentiated from other species and there are no concerns about the capacity of fishers to accurately identify and record catch of the species. There is a comprehensive reporting system in place including validation of commercial logbook data with processor returns. Recreational catch, which accounts for less than 5% of the total catch, is estimated based on mail survey data adjusted for the calculated level of bias (Caputi *et al.*, 2008a). While there are uncertainties associated with the true level of recreational catch, overall WW considers that there is a very high degree of confidence in identification and reporting of the target species

Score 100

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

Scoring Guidepost 60	Scoring Guidepost 80	Scoring Guidepost 100
There are serious gaps in information but the basis of the life history is understood adequately to support a rudimentary evaluation of the fishery.	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.	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.

Caputi *et al.* (2008a) document the available life history information for the Western Rock Lobster. There is good information on the movement (migration and foraging activity) of the species and on reproduction (size at maturity, spawning season and fecundity), juvenile recruitment and diet. WWF-Australia notes that some uncertainties persist with respect to growth rates of lobsters (e.g. differences between the sexes, water temperature and location). Overall, the understanding of the life history of the species supports a very high degree of confidence in the evaluation of the fishery.

Score 90

1.1.1.3 The geographical range of the target stock is known.

Scoring Guidepost 60	Scoring Guidepost 80	Scoring Guidepost 100

An estimate of the geographical range of the target stock is available.	A reliable estimate of the geographic range of the target stock is available including seasonal patterns of movement/availability.	The complete geographic range of the stock, including seasonal patterns of movement/availability, is reliably estimated.
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The geographic range of the species is restricted to the lower west coast of Western Australia. Genetic analysis using allozyme electrophoresis has concluded that the Western Rock Lobster is a single panmictic population. However, there is variation in reproductive biology and growth within the population (Caputi *et al.*, 2008a) and WWF-Australia notes that a current Fisheries Research and Development Corporation (FRDC)-funded study, *Evaluation of population genetic structure in the western rock lobster*, will, among other things, test whether the adult population of the species is genetically homogenous throughout its range. **Score 90**

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.
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Estimates of fecundity and age at sexual maturity are well understood. However, in 2006 SCS noted that studies on spatial origin of egg production and on recruitment and larval mixing needed to be completed in order for the fishery to warrant a score of 100 against this indicator (SCS, 2006, P. 29). WWF-Australia notes that this research appears to have been initiated only recently with the approval of FRDC of a study (FRDC 2008/087) to determine the relative contribution of larval production from different areas of the Fishery to the abundance and spatial distribution of puerulus settlement over 15 years and evaluate source-sink relationships and their implications for management of the breeding stock. Further, it has now become apparent that the factors affecting recruitment are not as well understood as was previously thought. This has prompted new research (FRDC 2009/018) to identify those factors affecting the low puerulus settlement in recent years. While the fishery estimates both the stock recruitment-environment relationship (SRR) and the recruitment to spawning stock relationship (RSR), Caputi *et al.* (2008a) indicate that it would be particularly useful to update the RSR so as to understand the effect of changes in fishing effort and other management measures on this relationship. **Score 80**

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 analyzed 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.
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Two indices of breeding stock abundance are available for Western Rock Lobster: the Fishery Dependent Breeding Stock Index (FDBSI) and the Independent Breeding Stock Surveys (IBSS). Despite the availability of these data over an extended period, this indicator was subject to a condition arising from the 2006 recertification of the Fishery. The condition required the resolution of inconsistencies between time series of data and the various methods employed to assess the status of the stock. This condition was addressed through the broader review of the Fishery conducted by Dr Norm Hall of Murdoch University. The outcomes of that review were considered at the Western Rock Lobster Stock Assessment and Harvest Strategy Workshop of July 2007 (Department of Fisheries (DoF), 2008). Despite this, on the basis of the information available to WWF-Australia, it is not possible to conclude that the results of the various models used (the depletion model and the egg production model) and the trends in the breeding stock indices have been reconciled or understood sufficiently to provide a high degree of confidence in the evaluation of the fishery.

Score 75

1.1.1.6 The size structure of catches is measured.

<p>60 Scoring Guidepost Data on the size structure of catches are known well enough to support a rudimentary evaluation of the fishery.</p>	<p>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.</p>	<p>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.</p>
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There is comprehensive data on the size structure of the commercial catch through both on-board monitoring and monitoring of processor landed weight and grade data. However, there is no direct monitoring of the size of the catch taken by recreational fishers. This is inferred from commercial catches taken in similar areas. This reduces the level of confidence in the evaluation of the fishery. **Score 95**

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).

<p>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.</p>	<p>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.</p>	<p>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.</p>
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Landings from commercial fishing in the Fishery are recorded and validated. Estimates of recreational catch are made and adjusted to address bias, however these remain estimates. In addition, Western Rock Lobster is taken as a “significant component of the catch in the Windy Harbour fishery” off the south coast of Western Australia (Fletcher and Santoro, 2008). The actual quantity of catch taken is not reported due to confidentiality provisions relating to the small number of licences, however WWF-Australia notes that the average catch in the decade to 2003/04 was quite low at around 16t per annum (SCS, 2006). It is unclear to WWF-Australia whether the reporting and validation requirements that apply to catch in the Fishery also apply to the Windy Harbour crustacean fishery.

The mortality associated with return of undersized specimens to the water appears to have been well-research (Brown and Caputi, 1986). The 2007 Stock Assessment and Harvest Strategy workshop identified handling mortality, associated with return of undersized and setose specimens to the sea as a data deficiency in the stock assessment (DoF, 2008) and this appears to have been addressed in the latest specification of the new stock assessment model, Version II (September 2008) which incorporates an estimate of 3% post-release mortality. **Score 90**

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

<p>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.</p>	<p>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</p>	<p>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.</p>
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A condition was attached to this indicator in the 2006 Assessment and a Major Non-conformance with this indicator was identified by SCS in July 2009 (SCS, 2009).

Caputi *et al.* (2008a) note that “The estimates of fishing efficiency have not been reviewed since Brown *et al.* (1995) and Fernandez *et al.* (1997) and need to be reviewed based on the depletion analysis estimates and the modeling estimates of efficiency change”. The 2008 stock assessment model includes efficiency increases across seasons and areas of 1-2% to 4-5% (Caputi *et al.*, 2008b). However, the 2009 Risk Assessment Workshop report notes that the depletion analysis estimates that the annual increase in the level of effective fishing effort could have been around 8% and that “large cuts in fishing effort are necessary to achieve relatively small reductions in exploitation rate, as rock lobster fishers appear to have an exceptional ability to offset them” (Brown, 2009).

Effort creep is a well recognized problem in input controlled fisheries where additional inputs, new technology or changed fishing practices are used to compensate for restricted inputs. As a result, controls on effort through pot numbers etc cannot guarantee reduced catch.

On the basis of the information available to WWF-Australia, and noting that the additional analysis and assessment sought from the Fishery by the Certification Body in issuing the Major Non-conformance is not publicly available, WWF-Australia believes that the current estimates of effective effort are not ‘accurate’ and do not support a high degree of confidence in the Fishery.

Score 70

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

<p>60 Scoring Guidepost Main fishing methods and gear types are known for the fishery well enough to support a rudimentary evaluation of the fishery.</p>	<p>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.</p>	<p>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.</p>
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WWF-Australia believes that the onboard monitoring program provides a high degree of confidence in the fishing methods and gear used in the fishery. However, the extent of coverage of onboard monitoring is unknown and this precludes the attribution of a score of 100.

Score 90

1.1.2.4 Changes in selectivity are known and accounted for.

<p>60 Scoring Guidepost Some information is available on selectivity and qualitative changes in selectivity, sufficient to support a rudimentary evaluation of the fishery.</p>	<p>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.</p>	<p>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.</p>
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The impact of changes in fishing practices and regulations are well researched and incorporated into management of the fishery. This provides a high degree of confidence in evaluation of the fishery.

Score 90

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

<p>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.</p>	<p>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.</p>	<p>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.</p>
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As noted above, only one other fishery takes Western Rock Lobster. The impact of that fishery together with the Unit of Certification and the recreational fishery for this species are monitored and included in the stock assessment. However, as noted above, monitoring of recreational catch relies on mail surveys and the level of catch monitoring and validation in the Windy Harbour commercial fishery is unknown. WWF-Australia considers that the available information supports a high degree of confidence in the fishery.

Score 90

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.

<p>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</p>	<p>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.</p>	<p>100 Scoring Guidepost Limit and target points are justified based on stock biology, uncertainty, variability, data limitations and statistical simulations of these factors.</p>
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achieve long term sustainability for the target stock.	There is no significant scientific opposition about those points outside the management agency.	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.
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Up until 2009 the Threshold Biological Reference Point for the Western Rock Lobster Stock is the breeding stock estimate for the 1980/81 fishing season when the breeding stock was estimated by Hall and Chubb (2001) to be ~20% of the virgin biomass (Caputi *et al.*, 2008a). The limit reference point is set at 20% below the threshold level. However the model used by Hall and Chubb has been criticized in recent years since it was not considered to have been modeled well and the relative weights ascribed to the various time series of data were considered arbitrary (DoF, 2008). This raises uncertainty as to the appropriateness of the 1980 level, however the overall conclusion of the stock assessment workshop was that the empirical 1980 level is a good referent point for breeding stock. There was therefore general support for the threshold reference point from outside the management agency.

The revised harvest strategy and decision rules have not been publicly released. However based on Caputi *et al.* (2008b) it appears that the new decision rules framework incorporates rules related to both the harvest rate index and the breeding stock for each of the three zones (see Attachment 1). However an articulation of the rationale for the levels at which the limit and threshold are set is not currently available and there has been no opportunity to assess the extent to which there is external support for the revised reference points.

Further, the 2009 risk assessment workshop noted that “higher target and threshold levels of breeding stock” may be required in order to ensure that the breeding stocks are at “safe” levels (Brown, 2009). Given the uncertainty as to the impact of environmental factors in puerulus settlement, it is clear that the reference points must take into account the impact of environmental factors if management is to ensure that the breeding stock does not fall below the limit reference point. Without a clear description of the new harvest strategy and decision rules it is not possible to judge whether the revised reference point reflect the outcomes of the risk assessment workshop or provide for the impact of environmental factors. WWF-Australia notes that Scoring Guidepost 80 requires that there is a target reference point in place. There is no target reference point in place for the Fishery. This means that there has been no consideration of the desirable level of effort and production at which management actions, including controls on fishing and on catch, should be aimed.

Overall, on the basis of the publicly available information, WWF-Australia does not believe that the Fishery meets all requirement of Scoring Guidepost 80.

Score 70

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

60 Scoring Guidepost Reference points recognize appropriate international standards and are being developed to meet these.	80 Scoring Guidepost Reference points recognize, and are in line with, acceptable international standards.	100 Scoring Guidepost Reference points meet or exceed international standards.
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Many international reference points, including those specified in the FAO’s *Code of Conduct for Responsible Fisheries*, promote the objective of maintaining or restoring stocks at level capable of promoting maximum sustainable yield (MSY). There is no clear indication of MSY for western Rock Lobster and in any case a target reference point has not been established. However, it is increasingly acknowledged internationally and within Australia (see Department of Agriculture, Fisheries and Forestry, 2007) that MSY is not sufficiently precautionary for many species. Maximum economic yield (MEY) is regarded as a more precautionary target. Where MEY cannot be calculated a proxy of 1.2MSY is sometimes promoted. WWF-Australia understands that the revised harvest strategy will seek to move the fishery to MEY (SCS, 2009, p.21) and support this move. However, as noted above, until the reference points are clearly described and their rationale provided it is not possible to judge whether they meet acceptable international standards.

Score 70.

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
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		are in place.
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WWF-Australia is concerned that the current harvest strategy and management arrangements are inadequate for the successful medium to long-term sustainable management of the fishery. It is apparent that the mechanisms in place, namely effort controls, cannot adequately control harvest to levels consistent with maintaining or returning the stock to productive levels.

The experience of the 2008/09 season is indicative of the failure of the current mechanisms. In that year the predicted catch was 9200t. In response to concerns about the longer-term impact of very low puerulus settlement in 2007/08 and 2008/09, the target catch was set at 7800t. An effort reduction of 35% was initiated to deliver this target catch. However it became apparent in mid season that these effort reductions were not sufficient to contain the catch which was trending towards 9000t. Additional controls were implemented including a further 15% reduction in effort, further restricting the days that fishers could operate and additional restrictions on sizes of lobsters.

The effort controls available to management provide only an indirect control on harvest. This is highlighted by the admission of the Minister that “under the fishery’s current input-based management system it is extremely difficult to manage an exact catch figure” (Moore, 2009). The Minister has acknowledged that while the target catch for the fishery in the 2009/10 season is 5500t the actual catch could range between 4950 and 6050t. Given the concern for the breeding stock, WWF-Australia does not consider that the risk of a 10% over-catch is acceptable.

Under these circumstances WWF-Australia does not believe that the Fishery meets the Scoring Guidepost 80.

Score 70

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

60 Scoring Guidepost	80 Scoring Guidepost	100 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.	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.	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.

A Decision Rule Framework has been in place in the fishery since 2004. However this Framework is now under review. The revised Framework will include both breeding stock and harvest rate. The 2007 Stock Assessment and Harvest Strategy Workshop endorsed these revisions and also agreed that “uncertainty should be incorporated into the decision rules framework with a more precautionary approach to thresholds: Prob. ($BSI_{now} \geq BSI_{1980} > 0.75$ and even more cautious approaches for limits (probability > 0.9)” (DoF, 2008). The revised harvest strategy has not yet been released publicly. However, a presentation to the Western Rock Lobster Council suggests that the management objectives will require a probability of 75% that the breeding stock remains above the threshold reference point in five years time and a probability of 90% that it remains above the limit reference point in five years time (Anon., 2009). These probabilities are only barely consistent with the advice of the 2007 workshop which had proposed that the probabilities be greater than these two levels. The revised decision making rules are not fully documented or publicly available and the rules have not been tested. Until such time as the new rules are articulated clearly and publicly they cannot be assessed against this indicator. The existing decision making framework has been shown to be inadequate being based on only the breeding stock index. The current concerns for the continuing low levels of the puerulus settlement and the uncertainty as to whether this is a result of a reduction in breeding stock size and/or environmental factors highlight the deficiencies in the current framework. WWF-Australia does not believe that the existing, 2004 Framework can be regarded as providing a moderate level of confidence that it is effective.

Score <60

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

60 Scoring Guidepost	80 Scoring Guidepost	100 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.	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.	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.

The current harvest strategy relies on the use of effort controls and controls on the size and condition of catch to control harvest levels. Management tools have been specified to implement management decisions however the available evidence does not provide a high degree of confidence in their effectiveness.

The ongoing need for effort reductions, including for the 2009/10 season, together with the admission that even with these reductions, catch may not be constrained to within the target limit, clearly demonstrates the inadequacy of the existing management tools. WWF-Australia is concerned that there remains a considerable reluctance in some sectors of the fishery to recognize the deficiencies in the current management regime and a failure to accept that direct control on harvest levels through the use of output controls is required. WWF-Australia believes that ongoing reliance on an increasingly complex mix of input controls, that are proving incapable of sustaining the stock and at the same impose increasing inefficiencies on fishers, is not an option. WWF-Australia considers that the quota management system (QMS) proposed by the recent independent report commissioned by the RLIAC (DoF, 2009a) is an appropriate basis for the long term management of the Fishery. We agree with the authors of that report, who expressed the view that the “QMS proposed is not only appropriate, practical and implementable for the Western Rock Lobster Fishery but, importantly, will achieve the agreed management objectives of biological sustainability, improved economic performance and ecosystem protection efficiently”.

The current arrangements that involve, the establishment of a de facto global total allowable catch (TAC) combined with ‘threats’ that effort will be further restricted if catch looks to exceed that level, provides fishers with the incentive to fish as hard as possible as early as possible in order to maximize their individual catch prior to any further effort restrictions. Therefore the current management tools aimed at constraining harvest to the target catch level are self-defeating. The fishery must move, as a matter of urgency, to a system of allocated quotas that directly control the level of catch and provide fishers with the certainty they need to maximize the economic efficiency of their operations. At a time when the fishery appears likely to be facing a period of lower available catch it is imperative that fishers can operate as efficiently as possible. This reduces the incentive for non-compliance and enhances the economic returns to the community from this resource. An individual transferable quota (ITQ) system should be supported by minimum and maximum size limits and escape gap limits together with permanent area closures where these are required to provide additional protection for the breeding stock and/or to restore ecosystem relationships. In particular, WWF-Australia notes that, should the QMS proposed by RLIAC’s independent advice (DoF, 2009a) be accepted, the need for spatial management in the form of closed areas may be more important since that proposal envisages the removal of the three zones.

Past research has demonstrated that a proportion of the rock lobster stock does not migrate for spawning events. The series of closures should build on past research knowledge and include identified areas of continually high densities of breeding stock within the fishery. For example, a large no-take marine protected area in the Abrolhos Islands which would provide spawning stock security and maintain predator-prey relations in that region. If this precautionary strategy were adopted, then it would provide the fishery, government, industry and the community much better management outcomes by providing a guaranteed minimum base of breeding stock, irrespective of management systems employed.

WWF-Australia notes that the recreational fishing sector does not support the implementation of the Minister’s proposed increase in the minimum legal size and reduction in the maximum legal size of Western Rock Lobster or the proposed increase in the escape gap (Leatt-Hayter, 2009). Given the uncertainty surrounding the status of the breeding stock WWF-Australia shares the view of the RLIAC that, given the current status of the fishery, all sectors should act to protect the stock through precautionary management measures (Edwards, 2009). To date, the Minister has not announced his decision on the arrangements for the recreational sector in the coming season.

WWF-Australia believes that the available evidence suggests that the current mix of management tools, do not provide even a moderate degree of confidence in their effectiveness. WWF-Australia believes that the Fishery fails to meet this indicate at the 60 Scoring Guidepost level

Score <60

1.1.4.4 Harvest strategies are precautionary

60 Scoring Guidepost	80 Scoring Guidepost	100 Scoring Guidepost
Harvest rates respond appropriately to low stock size. Uncertainties about stock status are documented.	Harvest rates are reduced at low stock sizes. Decision rules are explicitly precautionary (are more conservative as uncertainty about resource status increases).	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.

A condition was placed on the Fishery in relation to this indicator in 2006. The latest surveillance report (SCS, 2009) indicates that this condition has not yet been fully met and the fishery was required to provide the SCS with the finalized harvest strategy before the expedited audit in September 2009. WWF-Australia is not aware whether the revised strategy has been received by the certifiers but as at 23 October 2009 it was not available from DoF’s website. WWF-Australia does not agree with the certifier’s assessment (SCS, 2009, p.26) that the delay in finalization of the harvest strategy and decision rules is justified by the need to reflect the current conditions of the fishery. The harvest strategy framework should operate

independently of the current conditions and should provide the platform to deal with whatever circumstances the Fishery finds itself in. WWF-Australia finds the delays in finalization and public release of the revised harvest control rules and strategy unacceptable given that the Fishery has had nearly 3 years to complete this task.

It is clear that harvest rates have not responded appropriately to the management responses to the lower puerulus settlement and the predicted lower levels of catch. The ongoing need for tightening of the management measures is indicative of the failure of management to adequately constrain harvest rates. Further, SCS has explicitly sought for the harvest strategy to be amended to reflect the uncertainties in stock status. While the uncertainty associated with the stocks assessment has now been documented in the Stock Assessment (Caputi *et al.*, 2008a) it is unclear whether they have been adequately reflected in the revised harvest strategy. In particular, WWF-Australia is keen to ensure that the new harvest strategy makes sufficient provision for uncertainties associated with the impact of environmental factors on the abundance of western rock lobster. Given the acknowledgement by the Risk Assessment Workshop that both short term and long term environmental changes are occurring in the Eastern Indian Ocean and that there was up to a 35% chance that short term changes had caused the low puerulus settlements and up to a 75% chance that long term changes had caused these low settlements, it is imperative that the harvest strategy acknowledge the potential impact of environmental change by taking a more precautionary approach to management of fishing mortality on the stock.

WWF-Australia believes that, on the basis of the harvest strategy available to it, this fishery does not meet the 60 Scoring Guidepost.
Score <60

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

<p>60 Scoring Guidepost A robust empirical approach to assessing stock status is adopted.</p>	<p>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.</p>	<p>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.</p>
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SCS placed a condition on the Fishery with respect to this indicator in 2006. The condition required among other things, the construction of a new and fully quantitative assessment of the Western Rock Lobster stock using appropriate models and fitting to all relevant time series data, as guided by the results of the review by Dr Norm Hall and the release of a report detailing the methods, assumptions and results. A draft Stock Assessment was released in September 2008. A final copy of the document is not yet publicly available.

An early version of the stock assessment model was reviewed by the 2007 Stock Assessment and Harvest Strategy Workshop. With the input of four external reviewers the model structure was developed into an integrated length-based model which will provide a basis for evaluating potential changes in management (DoF, 2008). Currently, it appears that Version II of the stock assessment model, together with a fine-scale catch predictions model is being used to project catches (SCS, 2009, p.10). However, there remains concern, acknowledged by DoF, that fishing effort is not fully incorporated into the models. The Department has recognized that changes in effort do not directly translate into absolute decreased in catch. Further, the 2009 Risk Assessment Workshop highlighted concerns about the possible underestimation of effective effort in the Fishery. Both these factors compromise the ability of the models to predict breeding stock accurately. The robustness of the models therefore remains open to question. The Risk Assessment Workshop noted that “More precise estimates of BS [breeding stock] abundance, which incorporate the best estimates of the increase in effective fishing effort that have occurred in BS areas should be used in the stock/recruitment analysis”.

Until it can be demonstrated that the models adequately incorporate reliable estimates of effective effort WWF-Australia does not believe that the Fishery meets the 80 Scoring Guidepost **Score 70**

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.

<p>60 Scoring Guidepost Major uncertainties are identified. Some attempt has been made to evaluate these in the assessment.</p>	<p>80 Scoring Guidepost The assessment takes into account major uncertainties in the data and functional relationships.</p>	<p>100 Scoring Guidepost The assessment addresses all significant uncertainties in the data and functional relationships and evaluates</p>
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There is a moderate degree of confidence in the robustness of the assessment.	The most important assumptions have been evaluated, the consequences are known. There is a high degree of confidence in the robustness of the model.	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.
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The development of the fully integrated assessment should provide a better basis to take account of underlying uncertainties. Caputi *et al.* (2008a) identify the uncertainties and the description of Version II of the assessment model (Anon, 2008) suggests that the uncertainties, such as those in the data series underlying the breeding stock index, have been reflected in the model. However the description of the model identified a number of uncertainties which were yet to be addressed in the model, for example changing growth due to water temperature variation and uncertainty related to the estimated mean size of recruits. It is unknown whether Version III of the model is available and/or if these issues have been addressed in that Version.

WWF-Australia believes that the integrated assessment model should provide a high degree of confidence in the model.

Score 80

1.1.5.3 Uncertainties and assumptions are reflected in management advice.

60 Scoring Guidepost Major uncertainties are recognized 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.
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A condition on this indicator was imposed by SCS in 2006 requiring that all future advice by management to RLIAC, the Minister and stakeholders include as a routine feature, “best estimates” of stock status and a forecast of effects of management arrangements and provide a clear indication of the major uncertainties in current assessments and projections. The information provided to the 2008 coastal tour clearly set out the impacts of different management scenarios on breeding stock size, harvest rate and economic yield. The latest statement of management advice is the document *Summary of Information Provided to RLIAC for the 2009-10 West Coast Rock Lobster Managed Fishery Season* (DoF, 2009b). This document acknowledged, but did not specify, the uncertainties in the causes of the low puerulus settlements and in the predicted catch and associated breeding stock beyond 2011. In light of the uncertainties RLIAC reported that it had developed management strategies for 2009/10 that would effectively deal with a worst case scenario.

WWF-Australia notes that SCS also identified additional corrective actions requiring that the Fishery include best estimates of stock status and forecast of the effects of management arrangements in DoF’s annual stock status reports of the WRL Fishery. The latest such report (Fletcher and Santoro, 2008) provides an overview of the methods used to assess the stock but fails to clearly describe the uncertainties or to predict the effects of management arrangements.

WWF-Australia believes that considerable progress has been made in acknowledging the uncertainties surrounding predictions of catch and in the impact of management measures. However, the 2004 decision rule framework does not reflect these uncertainties adequately in the decision rules and without access to the revised harvest strategy it is not possible to say that the major uncertainties are addressed in the appropriately in the new decision rules. As a result, WWF-Australia cannot assess whether the Fishery meets the 80 Scoring Guidepost.

Score 70

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.
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Indices of breeding stock and puerulus settlement are evaluated against reference points. It appears that the new stock assessment model assesses the probability of the stock exceeding reference points (Anon, 2009). WWF-Australia believes that the Fishery meets this indicator at the 80 Scoring Guidepost level.

Score 80

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

<p>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.</p>	<p>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.</p>	<p>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.</p>
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A condition was placed on this indicator in 2006 requiring that the Fishery expressly publish results that describe the probability of the stock remaining above agreed reference levels. Anon (2009) provides an overview of probability of the management objective, *Ensure with a high degree of certainty that the breeding stock remains above the threshold level over the next five years*, being achieved under two puerulus settlement scenarios. WWF-Australia believes that this approach represents a considerably more robust assessment of the likely harvest strategy outcomes than has been available in the past. The information provided gives a high degree of confidence in the adequacy of the evaluation. **Score 80**

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.

<p>60 Scoring Guidepost Assessments show the stock is likely above the limit reference point.</p>	<p>80 Scoring Guidepost Assessments show the stock is likely above the target reference point.</p>	<p>100 Scoring Guidepost Assessments show the stock is very likely above the target reference point most of the time in recent years.</p>
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Below average puerulus settlement was observed in most locations in the Fishery in 2006-07. This was followed by another low settlement in 2007-08 and the lowest settlement on record in 2008-09 (DoF, 2009b). WWF-Australia notes that the 2009/2010 puerulus settlement, to September 2009, remains well below the long-term average at the four sites reported on the WA Fisheries website¹. Puerulus settlement for the September 2009 new moon period were sampled around the 4 October full moon. Settlement at all sites was greater than that recorded for the same month in 2008, and similar to that recorded in 2007 which was the second lowest on record. Current trends in the settlement suggest that this 2009/2010 settlement will be similar to 2007/08 which was low compared to the long term average but an improvement on the 2008/09 record low settlement (DoF, 2009c).

The Risk Assessment Workshop (Brown, 2009) noted that:

- when annual increases in the level of effective effort of about 8% (as determined from depletion analysis) are included in the calculations of breeding stock (FDBSI) levels, there is evidence that they have fallen below the 1980s threshold level and close to the limit reference point (i.e. 20% below the threshold level); and
- the decline in the breeding stock in the Bog Bank, northern Abrolhos and the coastal deep water breeding stock areas in Zone B are of particular concern, as preliminary results from oceanographic modeling indicate that these northern breeding stock areas could be more important under certain environmental conditions for the production of larvae that will successfully settle as puerulus in the Fishery. There is also concern regarding the decline in breeding stock levels in Zone A and north of Lancelin in Zone C.

SCS (2009) note that the outputs from the stock assessment fishery model outputs and harvest strategies show that the breeding stock levels all remain above the limit reference point set for the fishery, although there appears to be a need to increase the breeding stock level in Zone A as it is approaching one of the triggers set forth in the new harvest strategy. This is reflected in the diagrams in Attachment 1.

On the basis of the current limit reference point the assessments show that stock is likely above, but could be close to the limit reference point, in at least one zone. **Score 60**

¹ Available at: (<http://www.fish.wa.gov.au/docs/pub/PuerulusSettlement/>)

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.

<p>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.</p>	<p>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.</p>	<p>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.</p>
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The stock assessment and reference points indicate that the stocks remain above the limit reference point. However WWF-Australia remains concerned by the declining trends in indicators such as spawning biomass, puerulus settlement, weight of returned setose females to the water, residual legal size biomass, and increased harvest rates. In addition, there is cause for concern that localized depletion has occurred in area such as Big Bank and the area North of the Abrolhos Islands. In those areas catches and catch rates of undersize lobsters have declined, indicating a decline in abundance and in replenishment (i.e. fewer small lobsters migrating into the area) (Brown, 2009) and actual catches have been well below predicted levels (Moore and Caputi, 2008).

WWF-Australia believes that on the balance of probabilities, a rebuilding strategy may be required in Big Bank and northern Abrolhos (north of North Island) in Zone A. WWF-Australia notes that the Big Bank area remains closed in 2009/2010 and believes that this closure should be maintained and monitored closely to detect signs of rebuilding.

Score No score attributed since technically, the stock is not below the limit reference point

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.

<p>60 Scoring Guidepost Population size/sex structure is based on some sampling and verification. Some information on stock spatial structure is available.</p>	<p>80 Scoring Guidepost Population size/sex structure is based on adequate sampling and verification. The spatial structure of the stock is reasonably well understood.</p>	<p>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.</p>
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WWF-Australia considers that population size/sex structure is adequately monitored and there is a reasonably good understanding of the spatial structure of the stock and genetic studies suggest that there is a single genetic stock. Further genetic studies are underway (FRDC 2009/020) to develop additional new microsatellite markers for Western Rock Lobster, to test whether the adult population is genetically homogenous throughout its range and to test whether the spatial genetic structure in the next generation of recruits matches that of adults.

Score 80

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.

<p>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.</p>	<p>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.</p>	<p>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.</p>
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There is no indication that the fishery has induced negative trends in reproductive capacity due to changes in size/sex/genetic structure. There has been a significant decrease in size at maturity for the coastal population which is thought to be related to either a general warming of the mean temperature off the Western Australian coast over the last fifty years, or a genetic response to selective fishing practice, or a combination of both reasons. However, this is likely to increase the resilience of the stock.

Score 90

Additional issues

In addition to the concerns outlined above in relation to Principle 1, WWF-Australia remains concerned about a number of aspects of the Fishery’s performance against Principle 2. These concerns are outlined below against the relevant indicators.

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

60 Scoring Guidepost	80 Scoring Guidepost	100 Scoring Guidepost
<p>The target species prey, predators and competitors are known in the main areas of the fishery.</p> <p>Changes due to fishing on the prey, predators, and competitors of the target species are generally understood</p>	<p>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.</p> <p>The information used to establish trophic impacts is as robust as that derived from studies comparing fished and unfished areas.</p>	<p>The trophic impacts between the target species and the main nontarget species have been determined using quantitative information on the target species and the main nontarget species.</p> <p>The information used to establish trophic changes is as robust as that derived from studies comparing fished and unfished areas.</p>

A condition was imposed in relation to this indicator in 2006 that required the development of a research plan that included studies to assess the impact of the fishery on trophic linkages between lobsters and their predators and prey at the lobsters’ main life stages. The strategies of assessment were required to meet the standard of evidence 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. The results of the studies were required to be incorporated in any new ERAs.

WWF-Australia notes that the Ecological Effects of Fishing Scientific Reference Group (Eco SRG) approved a revised research plan in November 2008. SCS (2009) indicate that the new research plan will be submitted for approval to RLIAC and WRLC and DoF in early 2009 for approval and will then be posted on the DoF and WRLC websites and circulated to stakeholders and interested parties. WWF-Australia has not been provided with a copy of this document and the most research plan available on DoF’s website is dated 2006. Under these circumstances it is not possible to determine whether the condition has been met and WWF-Australia believes that this document should be released as a priority. In any case, given that the plan has only been submitted for approval in 2009 it is likely that research would be in its early stages, if yet underway. Further, WWF-Australia remains concerned that there has been no decision taken to establish the specific closed areas required to underpin the comparison of fished and unfished areas. The Fishery’s understanding of the trophic linkages and interactions between WRL and non-target species remains at very low level and there is no more than a general understanding of the impact of the fishery on the prey, predators, and competitors of the target species.

In the absence of this information it is possible that the Fishery may be having significant negative impacts on the ecosystem. MacArthur *et al.* (2007) note that

“Although the western rock lobster is likely to be a prey species for a number of different marine predators, there is a clear lack of information regarding this role in the food web. Predation of rock lobster is particularly high on shallow near-shore reefs where lobsters are consumed by small fish predators within their first year after settlement. With the exception of the sand bass, rock lobsters comprise only a small proportion of the diet to these fish, and it is therefore likely that a large number of fish species each remove a small proportion of the total biomass consumed. Predation decreases as lobsters increase in age and these lobsters are likely to be preyed upon by larger species such as octopus, large fish, sharks and sea lions. However, there is a paucity of dietary data for these known and potential predators and what data exists suggests that currently, no one species relies on western rock lobster as its main food source, i.e. there does not appear to be one ‘key’ predator of the western rock lobster.”

WWF-Australia acknowledges that progress has been made in relation to deep water ecosystems in the fishery through FRDC Project 2004/049: *The effect of western rock lobster fishing on the deepwater ecosystems off the west coast of Western Australia* but is concerned that the same priority has not been given to the shallow water systems where it is

possible that the biggest ecological impacts of the fishery are incurred.

Score 60

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

<p>60 Scoring Guidepost Use of bait and loss of gear across the fishery can be documented from fishery and sales data.</p> <p>The risks and impacts of bait use and loss of gear have been assessed and there is no evidence of significant detrimental ecological impacts.</p>	<p>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.</p> <p>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.</p>	<p>100 Scoring Guidepost There is detailed knowledge of the type, quantity and location of bait used in all areas of the fishery.</p> <p>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.</p> <p>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.</p> <p>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.</p>
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A condition was placed on this indicator in 2006 requiring that:

- The client must present evidence in the form of a scientifically defensible examination of the fishery's compliance with the Bait Handling Code of Practice that assesses the risks associated with the use and disposal of bait bands. Scientifically defensible here means that the study is quantitative and statistically relevant in terms of identifying how these materials are treated at sea, and evaluates the number of bands and the mass of materials taken onto and off fishing vessels, in various seasons and regions of the fishery. This must be completed prior to the third annual surveillance of the fishery.
- If results show that compliance with the Code of Practice is not sufficient, the client must adopt methods of enforcing the Code of Practice. This must be implemented prior to the fourth annual surveillance of the fishery.
- The client must also develop and implement methods to assess compliance on an ongoing basis. This must be implemented prior to the fourth annual surveillance of the fishery.

WWF-Australia does not believe that the fishery has met this condition and the evidence suggests that the number of uncut bait bands entering the sea each year from the Fishery continues to pose a risk to Dusky Whaler Sharks (*Carcharhinus obscurus*) and other marine animals. WWF-Australia accepts that the Fishery may not be the main source of the bait bands that have been reported to entangle Dusky Whaler Sharks and that a voluntary *Code of Practice for Using and Handling Bait, Bait Packaging and Rubbish* has been in the fishery since 2001. However, in 2007 the review of the ERA for the Fishery (Stoklosa, 2007) estimated that:

- the number of bait bands loaded onto vessels targeting Western Rock Lobster averages 1 million bait bands per annum;

- about one percent of all bait bands loaded onto fishing vessels are lost at sea;
- less than ten percent of those are in an ‘uncut’ condition (still forming a ring that could entrap animals).

These estimates suggest that about 1,000 uncut bait bands are lost at sea each year from the Fishery and this brings into question the effectiveness of the Code of Practice. It is not known how many Dusky whalers interact with bait bands, or what percentage survives. The ERA attributed a productivity score of 3.00 for the Dusky whaler, indicating that it is considered to be on the least productive limit of the scale. As such, its sustainability is vulnerable to by-catch mortality. The ERA ranked the impact of bait bands on Dusky whaler shark as moderate risk and made two recommendations:

- Alternatives to bait bands, to avoid the use of materials that can entangle *C. obscurus* and other by-catch species, should be investigated as a matter of improving environmental management of the Western Rock Lobster fishery. If the bait band hazard is eliminated, no other specific actions would need to be taken by the Western Rock Lobster fishery to avoid impacts to this species.
- If bait bands continue to be taken to sea by the Western Rock Lobster fishery, on-going stock assessments of *C. obscurus* should consider the threat of mortality due to bait band interactions, and investigate methods for collecting data to monitor any increased mortality with a high level of confidence.

It is only through elimination of the threat, i.e. a prohibition on the taking to sea of bait bands, that this threat can be managed. In 2008, WAFIC recommended to the Western Australian Government that this approach be adopted, however, to date the Government has not taken a decision. WAFIC’s recommendation effectively acknowledges that the Code of Practice cannot be relied upon to minimize the threat of bait bands to an acceptable level. Until this issue is addressed through legislation the Fishery continues to pose a moderate risk to Dusky Whaler Sharks. **Score 60**

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

60 Scoring Guidepost	80 Scoring Guidepost	100 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.	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.	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.

A condition was placed on this indicator in 2006 requiring that:

- For protected, endangered, or threatened species other than sea lions, the client must provide direct assessments of the risks to these species either before or as part of the required ERA (see Condition under 2.1.4.1). The species for which risks need to be assessed in a more rigorous fashion include whales, dolphins, turtles, seabirds, and seahorses.
- For sea lions, the data is clear. The assessments show that risks are higher than previously thought, so management actions are required to maintain the risks within acceptable levels. The condition for sea lions is therefore the implementation of SLEDs and the verification of their efficacy.
- 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.
- If any of these objectives are not met, the fishery would not qualify to maintain a certificate and the certificate would be revoked.

WWF-Australia notes that DoF's submission to the surveillance audit (SCS, 2009) indicates that the threats to whales, turtles, seabirds, dolphins and seahorses were assessed by the 2007 review of the ERA as low. However, the ERA report (Stoklosa, 2007), while confirming that the threat to whales and turtles was low, makes no reference to dolphins, seabirds or seahorses and WWF-Australia queries how these assessments were undertaken.

WWF-Australia welcomes the progress made against this indicator, noting that SLEDs have been introduced and that the Sea Lion SRG has recommended that the use of SLEDs be extended to include the Abrolhos Islands from the 2009/10 season. WWF-Australia notes that the latest Surveillance Report requires this as a condition. WWF-Australia strongly supports this initiative but notes that DoF has yet to implement this measure, acknowledging that the Abrolhos Island Fishery does not open until 14 March 2010.

Given the lack of publicly available information on the ERA of seabirds, seahorses and dolphins WWF-Australia believes that the fishery does not meet the 80 Scoring Guidepost. **Score 70**

Concluding comments

This assessment has been conducted without access to material which SCS had sought from the Fishery prior to the expedited audit in September 2009. That material includes:

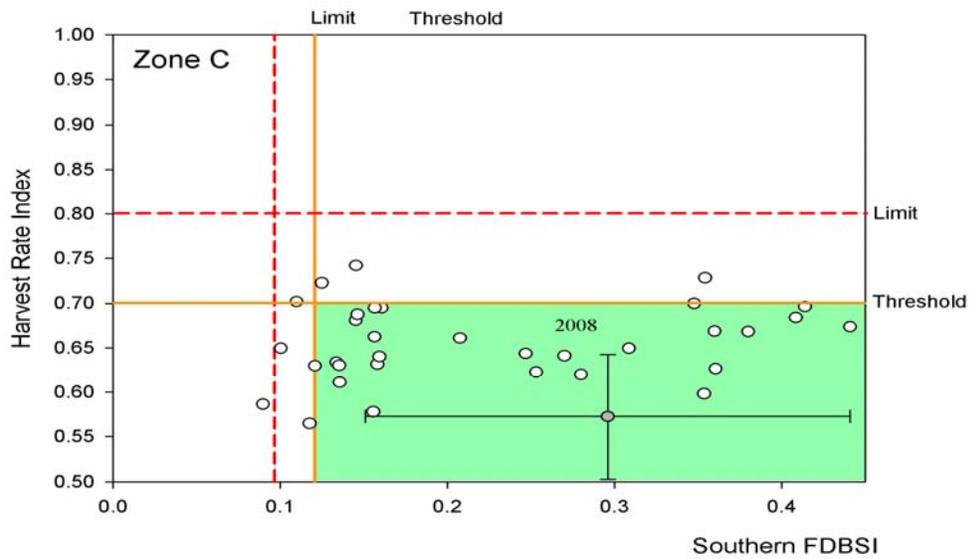
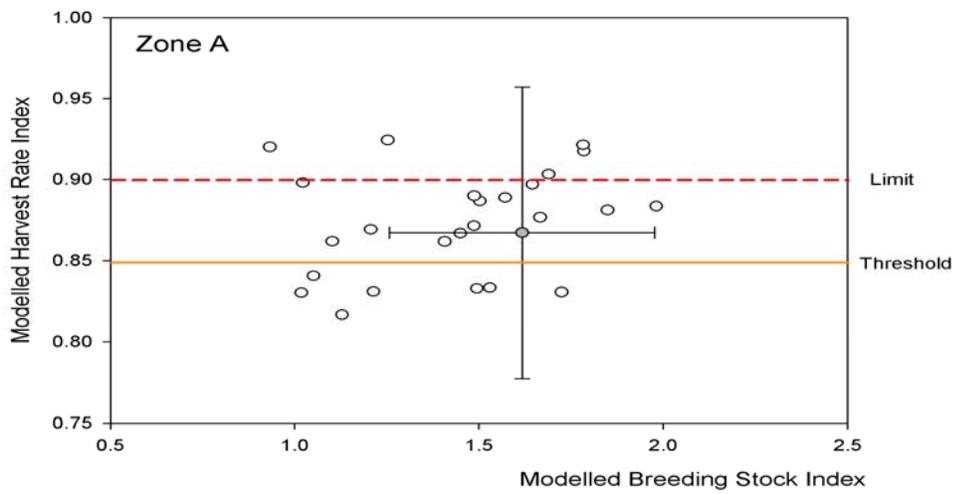
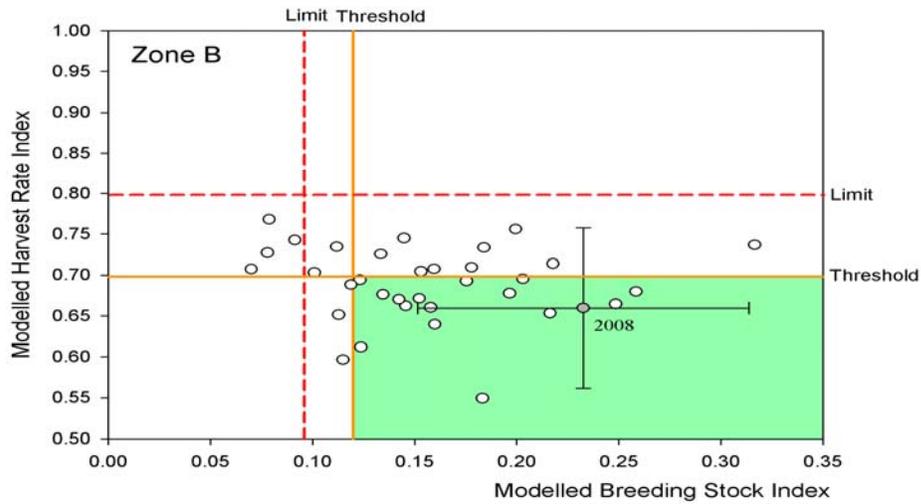
- a new assessment of the status of the breeding stock incorporating new catch and effort data and show how the stock compares to reference points for the fishery (Indicators 1.1.2.2 and 1.1.6.1)
- compiled and analyzed puerulus settlement data through to August 2009 (Indicators 1.1.2.2 and 1.1.6.1)
- finalized harvest strategy and decision rules be made publicly available (criterion 1)

In addition, WWF has not had access to the latest research plan of the Ecological Effects of Fishing Scientific Reference Group and the status of Version III of the stock assessment model is unknown.

In the absence of the latest harvest strategy and decision rules and the assessment of the breeding stock based on the latest available information, it is clearly very difficult to form a well-informed position as to the status of the stock in relation to the reference points. What is, however, clear to WWF-Australia is that management tools currently in use of this fishery have failed to protect the ecological and economic viability of the Fishery. The Fishery must move to a comprehensive system of output controls supported by scientifically designed area closures, relevant size restrictions and necessary bycatch mitigation measures. Unless this decision is taken and a commitment made to introduce this system for the 2011/12 season WWF-Australia does not believe that the Fishery can ensure the biological sustainability of the Western Rock Lobster and does not therefore meet the requirements for MSC certification.

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Source: Caputi *et al.* (2008b)