



**FRDC**

FISHERIES RESEARCH &  
DEVELOPMENT CORPORATION

# **Western Rock Lobster (WRL) Research, Development and Extension Program**

**Including resources and processes to consolidate and coordinate  
WRL RD&E planning and funding so that overall RD&E outcomes are  
delivered in an efficient and cost-effective way**

**Matt Taylor**

**August 2020**

FRDC Project No **2014-406**

© 2019 Fisheries Research and Development Corporation.  
All rights reserved.

ISBN 978-0-6488948-0-3

**Western Rock Lobster (WRL) Research, Development and Extension Program, including resources and processes to consolidate and coordinate WRL RD&E planning and funding so that overall RD&E outcomes are delivered in an efficient and cost-effective way, Project No. 2014-406**

**Year Published 2020**

### **Ownership of Intellectual property rights**

Unless otherwise noted, copyright (and any other intellectual property rights, if any) in this publication is owned by the Fisheries Research and Development Corporation and the Western Rock Lobster Council.

This publication (and any information sourced from it) should be attributed to *Matt Taylor, Western Rock Lobster, 2020, Western Rock Lobster Council Inc. (WRL) Research, Development and Extension Program, including resources and processes to consolidate and coordinate WRL RD&E planning and funding so that overall RD&E outcomes are delivered in an efficient and cost-effective way, Project No. 2014-406*

### **Creative Commons licence**

All material in this publication is licensed under a Creative Commons Attribution 3.0 Australia Licence, save for content supplied by third parties, logos and the Commonwealth Coat of Arms.



Creative Commons Attribution 3.0 Australia Licence is a standard form licence agreement that allows you to copy, distribute, transmit and adapt this publication provided you attribute the work. A summary of the licence terms is available from <https://creativecommons.org/licenses/by/3.0/au/>. The full licence terms are available from <https://creativecommons.org/licenses/by-sa/3.0/au/legalcode>.

Inquiries regarding the licence and any use of this document should be sent to: [frdc@frdc.com.au](mailto:frdc@frdc.com.au)

### **Disclaimer**

The authors do not warrant that the information in this document is free from errors or omissions. The authors do not accept any form of liability, be it contractual, tortious, or otherwise, for the contents of this document or for any consequences arising from its use or any reliance placed upon it. The information, opinions and advice contained in this document may not relate, or be relevant, to a readers particular circumstances. Opinions expressed by the authors are the individual opinions expressed by those persons and are not necessarily those of the publisher, research provider or the FRDC.

The Fisheries Research and Development Corporation plans, invests in and manages fisheries research and development throughout Australia. It is a statutory authority within the portfolio of the federal Minister for Agriculture, Fisheries and Forestry, jointly funded by the Australian Government and the fishing industry.

#### **Researcher Contact Details**

Name: Matt Taylor  
Address: 28 Mews Road, Fremantle WA 6160  
Phone: 08 9432 7722  
Fax: 08 9432 7730  
Email: [matt@westernrocklobster.org](mailto:matt@westernrocklobster.org)

#### **FRDC Contact Details**

Address: 25 Geils Court  
Deakin ACT 2600  
Phone: 02 6285 0400  
Fax: 02 6285 0499  
Email: [frdc@frdc.com.au](mailto:frdc@frdc.com.au)  
Web: [www.frdc.com.au](http://www.frdc.com.au)

In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

# Foreword

The Western Rock Lobster Council (**WRL**) is the industry research, development and extension (**RD&E**) body for the western rock lobster fishing sector. It is charged by its members to consolidate and coordinate WRL RD&E planning and funding so that overall RD&E outcomes are delivered in an efficient and cost-effective way. In March 2014, WRL established an Industry Partnership Agreement (**IPA**) to consolidate activity in relation to the planning and funding of RD&E activity for the western rock lobster industry.

This project establishes the structure and process for ensuring greater certainty and transparency in relation to the planning, investing in and managing of RD&E. It is intended to govern the overall relationship between the investors and the end users of RD&E for western rock lobster. It is based on the preference to work as a single industry thus giving effect to the Primary Industries Standing Committee RD&E strategy for fishing and aquaculture.

For the twenty years preceding this partnership agreement, the western rock lobster industry and FRDC had jointly funded investment in and managing of R&DE and the adoption of R&DE results via the then Department of Fisheries, industry and other bodies. This project brought the management of RD&E under the peak industry body for the first time. Implementing the IPA built on the long history of RD&E projects and overcame the previously fragmented approach and lack of focus on national issues at a whole of species level for the first time. Targeted investment in RD&E by the western rock lobster industry, in partnership with the State Government in support of the national fisheries and aquaculture RD&E Strategy (2010), was achieved.

Under the IPA, WRL has a range of roles and responsibilities and this project was developed specifically to ensure the industry obligations can be met. These responsibilities include leading the strategic planning process and RD&E priority setting and project development along with maintaining appropriate governance, communication and transparency. This project specifically established the resources, structure and processes to ensure the full benefits of the IPA are delivered.

Matt Taylor  
Principal Investigator

# Contents

Foreword .....	iii
Contents .....	iv
Introduction.....	1
Objectives.....	2
Method .....	3
Results, discussion and conclusion .....	4
Implications .....	14
Recommendations .....	15
Extension and Adoption .....	16
Project materials developed .....	17

# Introduction

The western rock lobster industry comprises around 400 small owner operator businesses mainly in regional areas and spread over more than 1,000km of coastline with little or no capacity to coordinate investment in and manage industry RD&E. In 2011-12 the Gross Value of Production (GVP) for the western rock lobster fishery was \$177 million and production of under 5,000 MT under half of the long-term average of 10,800 MT. With predictions of a return to well above the long-term average (see <http://www.fish.wa.gov.au/Species/Rock-Lobster/Lobster-Management/Pages/Puerulus-Settlement-Index.aspx>) a coordinated strategic approach to RD&E for the industry is vital to continue maximising profitability across the value chain and to facilitate market diversification.

There are two distinct needs involved in any consideration of better RD&E co-ordination for the western rock lobster sector:

- (1) the strategic issues of RD&E prioritisation, funding and the linkages to (and support for) both industry development plans and Government objectives of industry development; and
- (2) the operational issues of facilitating effective communication and coordination at all levels and particularly among researchers and industry.

WRL is well-established and has a track record of success in implementing the industry strategic plan and ensuring that research results are extended to industry. The project provided a strategic focus on maximising profitability across the value chain; and a high-level governance at the operational, planning and strategic level and effective engagement of all stakeholders in identifying and achieving strategic goals. The western rock lobster industry national RD&E priorities were reviewed by the IPA Committee and recommended to the WRL Board for approvals. The WRL strategic plan and risk analysis dashboard are updated annually by the WRL Board resulting in a more efficient "one-stop-shop" for planning, managing, funding and monitoring western rock lobster research projects linked to the national RD&E strategy.

# Objectives

This IPA project was initiated in August 2014 to establish WRL's structure and process for ensuring greater certainty and transparency in relation to the planning, investing in and managing of RD&E. The project's objectives are as follows:

1. Deliver resources and processes that consolidate and coordinate WRL RD&E planning and funding so that overall RD&E outcomes are delivered in an efficient and cost-effective way.
2. Develop a corporate structure, resources and processes for WRL to deliver the results of high-quality research to members and the industry.

In May 2017, WRL was granted two project variations (2016-070 and 2016-071), which resulted in the following additional project objectives:

3. To deliver two to three bursaries per year to young people in the western rock lobster industry for five years (project 2016-071).
4. Increase the ability of WRL Directors and Office Bearers to carry out their duties effectively (project 2016-070).
5. Increase the confidence with which Directors and Office Bearers deal with Government and external organisations (project 2016-070).

# Method

The project's objectives were met by way of the following methods.

The RD&E Committee was established with high-level representation. Chaired by the WRL CEO, and with WA Department of Primary Industries and Regional Development (**DPIRD**) (formerly the Department of Fisheries (DoF)) Director General, FRDC Executive Director and three WRL Board members. The first Committee meeting was held on 9 February 2015. At the meeting, some of the key discussions included reviewing the WRL RD&E Plan 2014-2023, developing program priorities, projects and budgets for RD&E investment and generating RD&E investment proposals. Subsequently, the Committee held four (4) other meetings on 24 March 2016, 21 September 2016, 19 July 2017 and 20 February 2018.

At the meeting on 9 February 2015, the RD&E Committee identified that a Research and Development Advisory Group (**RDAG**) should be formed to look at every project to ensure each objective is matched, the budget is realistic and the value proposition is of interest to WRL and its members. The RDAG consisted of three WRL members (including the CEO), two fisheries research members, one representative from DPIRD and one independent member. WRL's Vice-Chairman chaired this group. The RDAG held five (5) meetings, reviewed project progress, division of fisheries research and gave technical critique of proposals.

In order to allow a more unified front and efforts, the RD&E Committee and RDAG merged into a newly formed IPA Committee in October 2017. The committee consists of one representative from DPIRD, one representative from FRDC, four WRL Members and one Fisher's Representative. The first IPA Committee meeting met on 6 October 2017 and some of the key discussions included reviewing the current and proposed projects and discussions on the greater responsibility and communication with DPIRD to include access to science and management via the IPA Committee, bi-monthly meetings and monthly operational meetings.

These committees (along with the WRL Board) have implemented and regularly reviewed WRL's resources and processes to ensure WRL's RD&E outcomes are delivered in an efficient and cost-effective way. These include the Risk Register, which highlights the industry's risks and priorities to develop the Strategic Plan, which in turn guides the IPA priorities.

Processes such Annual Management Meetings (where members and stakeholders can engage with DPIRD and WRL to voice their views on any industry issues) and coastal tours, and resources such as email blasts and newsletters have also been developed to deliver the results of high-quality research to members and the industry.

Bursaries were offered to young industry leaders from the western rock lobster industry to attend events that will improve their knowledge and widen their experience of lobster fisheries and business management.

Professional training courses were offered to industry office bearers to increase their confidence in their knowledge of their rights and responsibilities under legislation and a greater understanding of the laws governing their industry.

# Results, discussion and conclusion

Discussion of results compared to the objectives, and key findings and outcomes for each of the objectives are noted below.

## 1. Deliver resources and processes that consolidate and coordinate WRL RD&E planning and funding so that overall RD&E outcomes are delivered in an efficient and cost-effective way.

### a. Establish and manage RD&E Committees

- The **RD&E Committee** was formed to develop program priorities, projects and budgets for RD&E investment and generating RD&E investment proposals. Its establishment is discussed in more detail under “Method”. It first met on 9 February 2015. The RD&E Committee held five meetings and reviewed WRL IPA projects such as 2014-239 and 2014-406, discussed key proposed activities and developed program priorities in conjunction with WRL’s RD&E Plan.
- The **Research and Development Advisory Group (RDAG)** was formed by the RD&E Committee at its first meeting. It was formed to look at every project to ensure each objective is matched, the budget is realistic and the value proposition is of interest to WRL and its members. The RDAG held five meetings where it reviewed project progress, division of fisheries research and gave technical critique of proposals.
- To allow a more unified front and efforts, the **IPA Committee** was created and first met on 6 October 2017.
- The IPA Committee consists of one representative from DPIRD, one representative from FRDC, four WRL Members and one Fisher’s Representative.
- Responsibilities of the Committee include reviewing the current and proposed projects and discussions on the greater responsibility and communication with DPIRD (including access to science and management via the IPA Committee, bi-monthly meetings and monthly operational meetings).
- On 20 November 2017, Kim Colero (former-WRL Chair), Peter Bailey (WRL Director) and Matt Taylor (WRL CEO) flew to Canberra as part of an IPA Committee trip to meet with the FRDC Board. They joined the FRDC Board at the FRDC Board meeting and discussion included:
  - How the risk analysis report had informed and guided the WRL Strategic Plan which then informed and guided the IPA priorities.
  - From July to November 2017 the WRL had put in a great deal of effort to research its program proposals for communications, digitising the WRL industry and understanding the market. The thought process, engagement with stakeholders and drafting of these proposals were explained in detail.
  - Most importantly, on how to improve the return on investment benefit to fishers and how to minimise the administrative cost and burden associated with the IPA.
- On 28 November 2017, WRL received a letter from FRDC that it required further information regarding the three program proposals in order for those proposals to progress.
- Following discussions between FRDC, Mr Colero and Mr Taylor on 22 May 2018, WRL re-engaged in the IPA.
- IPA Committee meetings were reconvened on 3 October 2018.
- The IPA Committee discussions included reviewing the current and proposed projects and discussions on the greater responsibility and communication with DPIRD to include access to science and management via the IPA Committee, bi-monthly meetings and monthly operational meetings.



- Due to the policy direction announced by the then Minister for Fisheries, Hon Dave Kelly MLA in November 2018 and the outbreak of Coronavirus in January 2020, no further committee meetings have been held.
  - These events have resulted in some of the IPA projects falling behind schedule.
  - The WRL Board continues to review the current and proposed projects. The Executive continues to communicate with DPIRD as to access to science and management, and hold bi-monthly meetings and monthly operational meetings.
  - During the course of this project, the WRL IPA has generated 11 approved RD&E investment projects, as well as generating numerous proposals and financially contributing to several other projects.
1. 2015-236 Establishing a low risk incremental approach for setting Total Allowable Commercial Quotas (TACCs) (changing quotas) in the Western Rock Lobster Fishery, taking into account maximum economic yield and other industry objectives
    - The outcome of the TACC setting project was that market factors have been incorporated into the TACC setting project via a new TACC sub-committee which includes processors, Fisheries and WRL Board Members.
    - The TACC sub-committee will determine and resolve combined due diligence for markets and biology in order to make informed and defensible decisions regarding the TACC.
    - This project was finalised in January 2017.
  2. 2015-237 WRL IPA: review and analysis of the risks associated with the sustainable development of the WA Rock Lobster industry
    - The outcome of the management risk assessment informed a revision to the WRL strategic plan, which now incorporates the RD&E Plan and is aligned to serve the strategy.
    - This project was finalised in February 2017.
  3. 2016-070 professional development – directors and industry office bearers
    - This project is a variation to 2014-406.
    - The objectives are to:
      - increase the ability of WRL Directors and Office Bearers to carry out their duties effectively; and
      - increase the confidence with which Directors and Office Bearers deal with Government and external organisations.
    - On 14 July 2016, WRL Directors and industry stakeholders attended the Duties and Responsibilities of Not-for-profit Director workshop facilitated by Australian Institute of Company Directors. The attendees agreed that the course provided them with a better insight and confidence to undertaking of both internally-focused compliance activities and externally-focused performance activities.
    - Directors attended the Trans-Tasman Congress in 2017, with the WRL CEO presenting a report on the activities, risks, strategies achievements of the industry.
    - On 11 August 2019, the WRL Chair and 4 WRL Directors together with the WRL Executives and 10 bursary recipients attended the 2019 Trans-Tasman Rock Lobster Congress in Queenstown, New Zealand.
    - In 2019, WRL commissioned the evaluation of the performance and competencies of the WRL Board and Committees, and to make recommendations for the Board to meet the principles of best practice in governance.

- On 31 July 2020, WRL Directors, members of the Fishing Operations Committee and Executive attended a one-day course facilitated by AICD where the Duties and Responsibilities of NFP Directors and Strategy and Risk for a NFP organisation were discussed.
4. 2016-071 professional development – industry bursaries
    - This project is a variation to 2014-406.
    - The objective is to deliver two to three bursaries per year to young people in the western rock lobster industry for five years.
    - 16 bursaries have been awarded, to the following events:
      - Trans-Tasman Rock Lobster Congress in Tasmania in September 2017 (3 bursaries)
      - Trans-Tasman Rock Lobster Congress in Queenstown, New Zealand in August 2019 (10 bursaries)
      - National Seafood Industry Leadership Program in Port Lincoln and Cairns in March – May 2020 (2 bursaries)
      - Australian Institute of Company Directors “Company Directors Course” in July 2020(1 bursary)
  5. 2016-164 Assess the feasibility of holding the 12th International Conference and Workshop on Lobster Biology and Management in Perth Western Australia in 2020
    - The objective was to assess the feasibility of holding the 12th International Conference and Workshop on Lobster Biology and Management in Perth Western Australia in 2020.
    - The project was successful, with Western Australia winning the bid to host the 12th ICWL, scheduled to be held in Fremantle on 18-23 October 2020.
    - The project successfully levered a \$5,000 investment from the Perth Convention Bureau whose services will now be called upon to assist with the preliminary organisation of the Congress.
    - The project was varied to provide an additional \$100,000 funding for the organising of the ICWL.
    - The ICWL was postponed until 17-22 October 2021 due to COVID-19.
  6. 2016- 165 Establishment of a World Centre of Excellence for Lobster in Australia (Phase 1 Scoping study)
    - The objective was to determine the scope for the establishment of a worldwide Lobster Centre of Excellence in Western Australia. The project commenced with initial positive discussions with the Director of the Indian Ocean Marine Research Centre, potentially to host the Centre for Excellence.
    - This project initially funded a scoping study as to what a body (which would create the science and innovation that will secure the industry’s future, drive GVP growth and maintain international competitiveness) could involve based on early stakeholder engagement.
    - This project was cancelled on 29 March 2018 when WRL decided to fully fund the project as the scope increased through its natural development following stakeholder engagement and considering the interests of the western rock lobster industry. This project was superseded by project 2018-117.

7. 2017-084: economic contribution of the Western Rock Lobster industry to Western Australia and Australia
  - The objective was to determine the Economic Contribution of the Western Rock Lobster Industry to Western Australia and Australia.
  - The economic contribution report reveals the industry contributed \$505 million and supported more than 2,400 direct and indirect jobs across the State in 2016-17.
  - The investment in this economic study is a direct outcome of the WRL development of the Strategic Plan which is guiding the priorities and next steps of the industry.
  - The outcome of the study enabled WRL to use the report in conversations and discussions with the Government and also to communicate to members, stakeholders and the community the contribution the industry makes, especially to regional areas.
  - This project was finalised in May 2018.

*Appendix 1 - Economic Contribution of the Western Rock Lobster Industry to Western Australia and Australia.*

8. IPA 2017-137 Understanding the markets for western rock lobster (Phase 1 market intelligence)
  - The objective was to analyse current data on the production, export and markets for WRL and competitor products, conduct in-country surveys to determine the final destination for western rock lobster and create a comprehensive market dashboard for the western rock lobster industry.
  - WRL appointed a Market Analyst and Economist, Chris Price, on 15 October 2018 to commence the work for the Understanding the Markets projects, with the main focus is on developing the MEY model.
  - The outcome enabled a more informed industry, particularly those involved in setting the TACC.
9. 2017-138 Understanding the markets for western rock lobster (Phase 2)
  - The objective is to conduct in-country surveys to determine the final destinations for western rock lobster and build on Phase 1 (project 2017-137) data collection for analysis. A second objective is to create a comprehensive market dashboard(s) for the western rock lobster industry.
10. 2017-140 Digitising the western rock lobster industry.
  - Objective 1: Scope national and international data collection and analysis innovation to assist policy development and fisheries management.
    - Output 1: An analysis of data systems that are appropriate for the Western Rock Lobster fishery.
      - Outcome 1: Incorporation of World's Best Practice data gathering and management into the WRL Management decision making process.
      - Outcome 2: Underpinning Objective 4 of the WRL 2017-2021 Strategic Plan. viz: The community has sufficient confidence in the WRL fishery to support continuing access to the resource.
  - Objective 2: Develop and extend a fully digitised platform to achieve at least three management objectives.
    - Output 2: Four management Objectives will have been investigated, tested and subject to rigorous analysis and trialled by industry.

- Outcome 3: A concerted move by the Western Rock Lobster industry from the current paper-based system of transfers to a wholly electronic one to meet management objectives.
- Objective 3: Expand platform to meet non-management objectives.
  - Output 3: Extension of the digital platforms to at least three areas outside of fisheries management and improving remote sensing technologies.
    - Outcome 3: An integrated digitised whole-of-industry management platform that is customer-focussed and meets world's best practice.
- On 31 October 2018, a tender for analysing existing quota trading platforms was released for this project but the tendering process has been extended until further notice due to the subsequent events of Minister Kelly's nationalisation policy and COVID-19.
- The WRL Board recently resolved to advertise for a Digital Technologist to drive the delivery of the projects within this program.

#### 11. 2018-117 Western Australian based Institute for Spiny Lobster Research Business

- WRL developed a 10-year strategy for the western rock lobster industry, with one of the most important elements of this growth strategy being the establishment of a WA-based Institute for Spiny Lobster Research. The Institute will create the science and innovation that will secure the industry's future, drive GVP growth and maintain international competitiveness.
- The objectives of this project include producing:
  - a comprehensive stakeholder-driven Research Priorities Plan which guides the activities and structure of the Proposed Institute and articulates the value it will deliver to stakeholder;
  - a detailed Business Case which determines the organisational structure and business plan that will give effect to the Research Priorities Plan;
  - a detailed and appropriate Governance Framework which is optimised with respect to the governance context and gives effect to well understood principles of good governance; and
  - several variants of an Investment Proposal which reflects the requirements of different potential investors.
- The outcome will be determined by the Western Rock Lobster Board and the Minister for Fisheries whether to proceed to establish such an institute (or not).
- WRL has undertaken due diligence in the form of a concept study to scope preliminary information about what such an institute could involve based on early stakeholder engagement.
- The concept study report prepared by Australian Venture Consultant Pty Ltd was been very well received by stakeholders and received strong support for the concept of a lobster institute from our Members and the industry during two coastal tours in December 2017 and March 2018.

*Appendix 2 – Australasian Institute for Spiny Lobster Research Concept Study*

## **b. Develop strategic and operational plans and projects to deliver the RD&E plan priorities**

### **i. RD&E Plan**

- The former RD&E Committee was charged with reviewing the WRL RD&E Plan 2014-2023.

*Appendix 3 - WRL RD&E Plan, 2014 – 2023*

- IPA Committee discussions included aligning the RD&E plan with the updated WRL strategic plan, itself produced partly as a result of the outcomes of IPA projects 2015-236 and 2015-237.

### **ii. Strategic Plan**

- IPA Committee discussions included aligning the RD&E plan with the updated WRL Strategic Plan, itself produced partly as a result of the outcomes of IPA projects 2015-236 and 2015-237.
- The Strategic Plan was reviewed at a strategic planning workshop on 22 November 2016 and was updated to guide the investment, development and operation of the industry for the following five years.
- The Strategic Plan was again updated in 2018. It was reviewed to refresh and consolidate the priority projects already identified in order to consolidate those projects into the Business Plan to underpin the strategic and commercial objectives of WRL, as well as the funding priorities.
- On 11 April 2019 the WRL Board resolved a reviewed and updated WRL Strategic Plan to reflect priority tactics as determined by the updated 2019 Risk Register.
- The Strategic Plan informs and guides the IPA priorities.

*Appendix 4 – WRL Strategic Plan, 2018-2021*

### **iii. Business Plan**

- The plan was developed in conjunction with ROCG Insight Consulting Partners to provide a robust business case for securing financial autonomy and certainty in relation to WRL corporate operations, business development and profiling and research undertakings.

*Appendix 5 – Western Rock Lobster Business Plan*

### **iv. Risk Register**

- In 2016, WRL widely consulted across the supply chain to develop a Risk Register against good practice for the western rock lobster industry. This comprehensive industry risk analysis was undertaken to better understand the risks that may adversely affect the rock lobster industry and the mitigation and management measures that can be undertaken.
- This risk register is bi-annually reviewed and updated having regard to the current environment. It is presented at the WRL Board meetings for approval, prior to dissemination to the industry.
- The risk register allows targeted research for future security and development within the industry, based on the risks and priorities identified. In turn, it guides the review and amendment of the Strategic Plan, which guides the IPA priorities.

*Appendix 6 – Western Rock Lobster Risk Register*

## **2. Develop a corporate structure, resources and processes for WRL to deliver the results of high-quality research to members and the industry.**

### **a. WRL Constitution**

- The Constitution was updated in September 2015 and July 2018.
- The July 2018 update included significant amendment following a comprehensive review in 2018 to improve governance processes, to reflect current industry practices and standards and to increase industry confidence in the role and activities of WRL.
- The Constitution has again recently been reviewed by the WRL Board and updated having regard to industry feedback. The proposed changes to the Constitution were approved by Members at the recent WRL SGM.

*Appendix 7 – current WRL Constitution*

### **b. Annual Management Meetings**

- Annual Management Meetings were introduced in 2014, and provide a valuable opportunity for Members and stakeholders to engage with DPIRD and WRL, and allow Members to voice their views on any industry issues.
- At these meetings, DPIRD present the current research data and Management Reports along with other items of interest relevant to the western rock lobster industry including science, safety, the Aquatic Resources Management Act (**ARMA**) and Marine Stewardship Council (**MSC**) certification.
- WRL present industry issues and the work WRL has been undertaking across several areas including resource access security, research and development, whale mitigation, research priorities and issues affecting the industry.
- These discussions allow the WRL Board to then provide the Minister of Fisheries with their advice in order for the necessary arrangements to be put in place for the forthcoming season.

*Appendix 8 – Annual Management Meetings summaries*

### **c. Safety and Learning Management Systems**

- In consultation with industry stakeholders, WRL identified there was uncertainty regarding the safety management system requirements of the new Australian Maritime Safety Authority (**AMSA**) regulations.
- In 2015, WRL commissioned the development of a template for review by industry and facilitated the establishment of a resource to assist industry members to develop tailored safety management system (**SMS**) suitable to their operations.

*Appendix 9 – Safety Management System Template*

- In 2018, WRL committed to introducing SeSAFE for the industry to use to improve safety performance on fishing vessels, primarily through the provision of online training modules for skippers and crew.
- Western rock lobster fishery specific modules are currently being developed by WRL in conjunction with SeSAFE Principal Investigator Steve Eayrs, AMSA and industry fishers. These modules, packaged into a Learning Management System (**LMS**), are designed to enhance and complement existing SMSs.
- In addition to developing a western rock lobster fishery specific LMS, WRL has contributed \$50,000 to the National SeSAFE Project to assist in the development and maintenance of LMS' for other fisheries, particularly those dominated by small vessels with limited capacity for self-funding.

#### **d. Whale entanglement mitigation**

- As part of the work associated with the WA Ministerial Task Force on Whale Entanglement and the Operational Whale Entanglement Reference Group, WRL partnered with DPIRD to disseminate mitigation measures to industry in 2014 and 2015.
- WRL and DPIRD also partnered in 2015 to develop a code of practice which details the current mitigation measures. The code of practice has been provided in a laminated sheet for retention on vessels and presentations were also made at the AMMs.

##### *Appendix 10 – Code of Practice Reference Sheet*

- The WCRLMF Management Plan is currently undergoing amendment, including to those provisions pertaining to whale entanglement mitigation. Upon enactment of the amended Management Plan, WRL will update the code of practice in partnership with DPRD.
- On 5 and 6 September 2019, DPIRD and WRL hosted a workshop for stakeholders to consider the latest information regarding whale migration and the appropriateness of additional management measures to reduce entanglements. The workshop resulted in 15 practical options and identified potential additional research areas. The 15 workshop options were grouped into low, medium or high categories, based on the level of impact they would have on fishing operations, should they be implemented.
- WRL has recently widely consulted with industry as to the implementation of any additional whale mitigation measures, specifically with reference to the response plan implemented in response to COVID-19 impacts, prior to making a recommendation to the Minister for Fisheries. WRL will continue to consult with industry as to the best whale entanglement mitigation measures.

#### **e. Ministerial Trade Delegation to China**

- The WRL CEO participated in the Ministerial Trade Delegation to China in September 2014. The purpose of the delegation was to meet with research institution, government departments and Shanghai Seafood Expo delegates to identify research trends, cooperation opportunities and customers/stakeholders perception and requirements of the rock lobster industry. The WRL Board was provided with a debrief by the CEO and the Minister at the Board Meeting held 13 November 2014.

#### **f. New Zealand Seafood Conference**

- The WRL CEO attended the Seafood Conference in New Zealand in August 2019. The conference focused on key strategic initiatives and promoted sustainable, nutritious and responsibility-caught seafood.
- The CEO was invited to present on protecting property and treaty rights, and spoke to the then-Minister's nationalisation policy direction, providing details of the success of the western rock lobster industry and WRL, WRL actions in response to the policy direction and an overview of the property rights issue in Western Australia.

#### **g. Monthly operational meetings**

- WRL began meeting monthly with DPIRD in 2017 to allow effective and open communication as to the science and management of the fishery. These operational meetings have continued regularly.

**3. To deliver two to three bursaries per year to young people in the western rock lobster industry for five years.**

- In applying for the variation, it was noted that the project would be deemed to be successful if 10-15 young people from the western rock lobster industry have taken advantage of opportunities offered that will improve their knowledge and widen their experience of lobster fisheries.
- A total of 16 bursaries were awarded over three years (between 2017 and 2020).
- In July 2017, FRDC and WRL opened the first round of applications for bursaries to provide future leaders of the western rock lobster industry with the opportunity to attend the 10th Trans-Tasman Rock Lobster Congress in Hobart on 23-25 September 2017. The bursaries were targeted at (but not limited to) those actively engaged in fishing operations.
- The 3 bursary recipients (Reece Newbold, Rhys Towers and Ryan Labruyere) were acknowledged as future leaders of the western rock lobster industry. The feedback received from the bursary recipients was that attending the Congress was a valuable opportunity which allowed them to network with a variety of stakeholders.
- In January 2019, FRDC and WRL opened the second round of bursary applications to provide 10 young industry leaders from the Western Australian rock lobster industry the opportunity to attend the 11<sup>th</sup> Trans-Tasman Rock Lobster Congress from 11-13 August 2019 in Queenstown, New Zealand.
- WRL awarded 10 bursaries (Ashley Cole, Chris Williams, Eddie Fernandes, Frank Rodriguez, James Camarda, Kurt Glass, Lance Dawe, Michael Butcher, Radley Woodcock and Stephen Minutillo). The applications received were very encouraging, with a large number being robust, diverse and passionate, and demonstrating the applicant's desire to further build their capacity, knowledge and networks within the industry.
- FRDC and WRL were involved in the selection of bursary recipients and the panel comprised of FRDC representative, two WRL Directors and the CEO of WRL. Bursary recipients were chosen through an open and transparent process using an overall score.
- The feedback that was received from the bursary recipients highlighted that they viewed the Trans-Tasman Rock Lobster Congress as providing an excellent opportunity to further network with rock lobster fishers, managers and scientists from across Australia and New Zealand, and supporting ambitions and future involvement within the western rock lobster industry.
- In 2020, WRL provided 2 bursaries for industry participants Kurt Glass and Adam Radford to attend the 2020 National Seafood Industry Leadership Program. The NSILP is the only national, industry-specific leadership program designed in consultation with the seafood industry for people wishing to take up leadership roles
- In July 2020, Adam Radford will attend the Australian Institute of Company Directors "Company Directors Course" by way of bursary. The course gives a comprehensive grounding in the roles and duties of board directors and includes topics on effective decision-making, the legal aspects of directorship, financial literacy and strategy, as well as putting the lessons into practice.

**4. Increase the ability of WRL directors and office bearers to carry out their duties effectively.**

and

**5. Increase the confidence with which directors and office bearers deal with government and external organisations.**

- On 14 July 2016, 16 WRL Directors and industry stakeholders attended the Duties and Responsibilities of Not-for-profit Director workshop facilitated by Australian Institute of Company Directors. The attendees agreed that the course provided them with a better insight and confidence to undertaking of both internally-focused compliance activities and externally-focused performance activities.
- Directors attended the Trans-Tasman Congress in 2017, with the WRL CEO presenting a report on the activities, risks, strategies achievements of the industry.



- On 11 August 2019, the WRL Chair and 4 WRL Directors together with the WRL Executives and 10 bursary recipients attended the 2019 Trans-Tasman Rock Lobster Congress in Queenstown, New Zealand.
- In 2019, WRL commissioned the evaluation of the performance and competencies of the WRL Board and Committees, and to make recommendations for the Board to meet the principles of best practice in governance.
- In July 2020, WRL Directors, members of the Fishing Operations Committee and Executive attended two workshops facilitated by the Australian Institute of Company Directors. The courses focussed on Duties and Responsibilities and Strategy and Risk for Not-for-Profit Directors. These courses will assist WRL Directors and office bearers to:
  - understand a director's role in establishing and exercising effective governance practices by developing a solid foundation from which to make more effective decisions that will minimise their personal risk and maximise their contribution; and
  - minimise personal liability and safeguard the long-term success of WRL by learning to monitor strategy and manage risk more effectively.

# Implications

The outcomes achieved through this project have resulted in priority tactics driving WRL's research, management and development activities.

The industry risk analysis has allowed the WRL Board and Executive to identify and manage the major risks associated with the sustainability of the western rock lobster industry. This comprehensive analysis assists the industry to better understand risks that could adversely affect the western rock lobster industry and identify mitigation and management measures that can be undertaken to address them.

Consideration of the risk analysis allowed the development of WRL's Strategic Plan, which in turn guides the IPA priorities by allowing targeted research for future security and development within the industry.

The resources and processes developed by WRL have consolidated and coordinated WRL's RD&E planning and funding, so that overall RD&E outcomes are delivered in an efficient and cost-effective way.

Further, WRL has developed a corporate structure, resources and processes which ensure a strategic focus on maximising profitability across the value chain; ensure high level governance; and have effectively engaged stakeholders to identify and achieve its strategic goals.

By meeting this project's objectives, WRL has increased its IPA program by nearly 10-times, which allows WRL to further reduce risks and deliver significant benefits across the western rock lobster industry including biology, ecology, catching, digital technology, processing and markets.

# Recommendations

The RD&E project underwent a detailed FRDC audit by its CFO Mr John Wilson and Annette Lyons in July 2017. There were no adverse findings and suggestions by Mr Wilson for improving the project.

# Extension and Adoption

The project involved extensive communication and engagement across all of industry (including producers, processors, exporters and government) to ensure broad industry awareness of, and involvement in, the annual RD&E planning and management cycle.

WRL continues to communicate its research and development of the industry with its Members, stakeholders and government, including creating opportunities for each of those groups to communicate with each other.

The outputs of the finalised IPA projects continue to be adopted and utilised, including regular meetings of the TACC sub-committee (2015-236), regular review and amendment of the Strategic Plan (2015-237) and reference to and use of the Economic Contribution of the Western Rock Lobster Industry report (2017-084).

In addition, WRL's governance documents (including the Risk Register and Constitution) are regularly reviewed and amended to align with the current environment and needs of the industry.

The processes developed to enable WRL to communicate the results of its research to members and industry continue to be refined and implemented, and are detailed below.

Extension of the project's outcomes was, and will continue to be, via coastal tours, attendance at Professional Fishermen Association's meetings, the WRL website, email and newsletters, in addition to the following:

- Annual Management Meetings
  - o 24-27 June 2014
  - o 11-18 June 2015
  - o 13-16 June 2016
  - o 13-15 June 2017
  - o 17-19 July 2018
  - o 16-18 October 2019
- Annual General Meetings
  - o 15 October 2014 (Jurien Bay) and 6 November 2014 (Geraldton)
  - o 12 November 2015 (Hillarys)
  - o 20 October 2016 (Geraldton)
  - o 24 October 2017 (Fremantle)
  - o 19 September 2018 (Geraldton)
  - o 20 September 2019 (Fremantle)
- Bi-monthly meetings with DPIRD, Director General, Heather Brayford
- Monthly DPIRD operational meetings
- Trans-Tasman Rock Lobster Congress (2017, 2019)

# Project materials developed

## Reports

*Appendix 1 – Economic Contribution of the Western Rock Lobster Industry to Western Australia and Australia*

*Appendix 2 – Australasian Institute for Spiny Lobster Research Concept Study Report*

## Event documents

*Appendix 8 – Annual Management Meetings summaries*

## Other

*Appendix 3 – WRL RD&E Plan 2014-2023*

*Appendix 4 – WRL Strategic Plan 2018-2021*

*Appendix 5 – WRL Business Plan*

*Appendix 6 – WRL Risk Register*

*Appendix 7 – WRL Constitution*

*Appendix 9 – Safety Management System Template*

*Appendix 10 – Code of Practice (whale mitigation measures) Reference Sheet*

REPORT TO  
WESTERN ROCK LOBSTER COUNCIL  
DECEMBER 2017

# ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY





2017-084 WRL IPA: ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY TO WESTERN AUSTRALIA AND AUSTRALIA IS SUPPORTED BY FUNDING FROM THE FRDC ON BEHALF OF THE AUSTRALIAN GOVERNMENT



ACIL ALLEN CONSULTING PTY LTD  
ABN 68 102 652 148

LEVEL NINE  
60 COLLINS STREET  
MELBOURNE VIC 3000  
AUSTRALIA  
T+61 3 8650 6000  
F+61 3 9654 6363

LEVEL ONE  
50 PITT STREET  
SYDNEY NSW 2000  
AUSTRALIA  
T+61 2 8272 5100  
F+61 2 9247 2455

LEVEL FIFTEEN  
127 CREEK STREET  
BRISBANE QLD 4000  
AUSTRALIA  
T+61 7 3009 8700  
F+61 7 3009 8799

LEVEL ONE  
15 LONDON CIRCUIT  
CANBERRA ACT 2600  
AUSTRALIA  
T+61 2 6103 8200  
F+61 2 6103 8233

LEVEL TWELVE, BGC CENTRE  
28 THE ESPLANADE  
PERTH WA 6000  
AUSTRALIA  
T+61 8 9449 9600  
F+61 8 9322 3955

161 WAKEFIELD STREET  
ADELAIDE SA 5000  
AUSTRALIA  
T +61 8 8122 4965

ACILALLEN.COM.AU

#### REPORT AUTHORS

JOHN NICOLAOU, EXECUTIVE DIRECTOR

E: [J.NICOLAOU@ACILALLEN.COM.AU](mailto:J.NICOLAOU@ACILALLEN.COM.AU)

D: (08) 9449 9616



JOHN NICOLAOU



@JANICOLAOU

JAMES HAMMOND, CONSULTANT

E: [J.HAMMOND@ACILALLEN.COM.AU](mailto:J.HAMMOND@ACILALLEN.COM.AU)

D: (08) 9449 9615



JAMES HAMMOND



@JAMESWHAMMOND1

**RELIANCE AND DISCLAIMER** THE PROFESSIONAL ANALYSIS AND ADVICE IN THIS REPORT HAS BEEN PREPARED BY ACIL ALLEN CONSULTING FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES TO WHOM IT IS ADDRESSED (THE ADDRESSEE) AND FOR THE PURPOSES SPECIFIED IN IT. THIS REPORT IS SUPPLIED IN GOOD FAITH AND REFLECTS THE KNOWLEDGE, EXPERTISE AND EXPERIENCE OF THE CONSULTANTS INVOLVED. THE REPORT MUST NOT BE PUBLISHED, QUOTED OR DISSEMINATED TO ANY OTHER PARTY WITHOUT ACIL ALLEN CONSULTING'S PRIOR WRITTEN CONSENT. ACIL ALLEN CONSULTING ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR ANY LOSS OCCASIONED BY ANY PERSON ACTING OR REFRAINING FROM ACTION AS A RESULT OF RELIANCE ON THE REPORT, OTHER THAN THE ADDRESSEE.

IN CONDUCTING THE ANALYSIS IN THIS REPORT ACIL ALLEN CONSULTING HAS ENDEAVOURED TO USE WHAT IT CONSIDERS IS THE BEST INFORMATION AVAILABLE AT THE DATE OF PUBLICATION, INCLUDING INFORMATION SUPPLIED BY THE ADDRESSEE. ACIL ALLEN CONSULTING HAS RELIED UPON THE INFORMATION PROVIDED BY THE ADDRESSEE AND HAS NOT SOUGHT TO VERIFY THE ACCURACY OF THE INFORMATION SUPPLIED. UNLESS STATED OTHERWISE, ACIL ALLEN CONSULTING DOES NOT WARRANT THE ACCURACY OF ANY FORECAST OR PROJECTION IN THE REPORT. ALTHOUGH ACIL ALLEN CONSULTING EXERCISES REASONABLE CARE WHEN MAKING FORECASTS OR PROJECTIONS, FACTORS IN THE PROCESS, SUCH AS FUTURE MARKET BEHAVIOUR, ARE INHERENTLY UNCERTAIN AND CANNOT BE FORECAST OR PROJECTED RELIABLY.

ACIL ALLEN CONSULTING SHALL NOT BE LIABLE IN RESPECT OF ANY CLAIM ARISING OUT OF THE FAILURE OF A CLIENT INVESTMENT TO PERFORM TO THE ADVANTAGE OF THE CLIENT OR TO THE ADVANTAGE OF THE CLIENT TO THE DEGREE SUGGESTED OR ASSUMED IN ANY ADVICE OR FORECAST GIVEN BY ACIL ALLEN CONSULTING.

# C O N T E N T S

---

## SUMMARY AND KEY FINDINGS I

---

### 1

	<i>INTRODUCTION AND OVERVIEW</i>	<i>7</i>
1.1	Our Task	7
1.2	A Brief Introduction to the Western Rock Lobster Industry	7
1.3	Estimating the Economic Contribution of the Industry	11

### 2

	<i>WESTERN ROCK LOBSTER INDUSTRY VALUE CHAIN</i>	<i>14</i>
2.1	Boats	15
2.2	Receival points	17
2.3	Trucks	17
2.4	Processing facilities	18
2.5	Exports of Western Rock Lobsters	18

### 3

	<i>SECTOR PROFILE</i>	<i>20</i>
3.1	Processed Seafood Manufacturing	20
3.2	Fishery	21
3.3	Boat building and servicing	22
3.4	Tourism	23
3.5	Household consumption	24

### 4

	<i>ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY</i>	<i>25</i>
4.1	Headline results	25
4.2	Contribution by sector	26

### 5

	<i>SENSITIVITY ANALYSIS</i>	<i>28</i>
5.1	Low Price Scenario	28
5.2	High Price Scenario	29
5.3	Low Export Volume Scenario	31
5.4	High Export Volume Scenario	32

### 6

	<i>REGIONAL AND COMMUNITY CONTRIBUTIONS</i>	<i>34</i>
6.1	Economic contribution of the Northern Zone	34
6.2	Economic contribution of the Southern Zone	47

### 7

	<i>REFERENCES</i>	<i>51</i>
--	-------------------	-----------



# C O N T E N T S

## A

### STAKEHOLDER CONSULTATION

A-1

## B

### INPUT-OUTPUT MODELLING FRAMEWORK

B-1

## FIGURES

<b>FIGURE 1.1</b>	NUMBER OF BOATS AND CATCH PER UNIT OF EFFORT (CPUE)	8
<b>FIGURE 1.2</b>	WESTERN ROCK LOBSTER COMPOSITION OF PRODUCT	9
<b>FIGURE 1.3</b>	GROSS VALUE OF PRODUCTION, OF WESTERN AUSTRALIAN PRIMARY INDUSTRIES	10
<b>FIGURE 1.4</b>	SHARE OF TOTAL LOBSTERS EXPORTS, BY REGION, 2014-15	11
<b>FIGURE 2.1</b>	THE WESTERN ROCK LOBSTER INDUSTRY SUPPLY CHAIN	15
<b>FIGURE 4.1</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17	26
<b>FIGURE 4.2</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17	27
<b>FIGURE 5.1</b>	LOW PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17	29
<b>FIGURE 5.2</b>	LOW PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17	29
<b>FIGURE 5.3</b>	HIGH PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17	30
<b>FIGURE 5.4</b>	HIGH PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17	30
<b>FIGURE 5.5</b>	LOW EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17	31
<b>FIGURE 5.6</b>	LOW EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17	32
<b>FIGURE 5.7</b>	HIGH EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17	33
<b>FIGURE 5.8</b>	HIGH EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17	33
<b>FIGURE 6.1</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY LOCATION	35
<b>FIGURE 6.2</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, NORTHERN ZONE, 2016-17	36
<b>FIGURE 6.3</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, NORTHERN ZONE, BY SECTOR, 2016-17	37
<b>FIGURE 6.4</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN KALBARRI, 2016-17	38
<b>FIGURE 6.5</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN GERALDTON, 2016-17	40
<b>FIGURE 6.6</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN DONGARA/PORT DENISON, 2016-17	41
<b>FIGURE 6.7</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN LEEMAN, 2016-17	42
<b>FIGURE 6.8</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN JURIE BAY, 2016-17	44
<b>FIGURE 6.9</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN CERVANTES, 2016-17	45
<b>FIGURE 6.10</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN LANCELIN, 2016-17	46
<b>FIGURE 6.11</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, SOUTHERN ZONE, 2016-17	47

# C O N T E N T S

<b>FIGURE 6.12</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, SOUTHERN ZONE, BY SECTOR, 2016-17	48
<b>FIGURE 6.13</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN PERTH, 2016-17	49
<b>FIGURE 6.14</b>	ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN SOUTH WEST, 2016-17	50
<b>FIGURE B.1</b>	"TRACE THROUGH" OF AN INPUT-OUTPUT MODEL	B-1

## TABLES

<b>TABLE 2.1</b>	LOBSTER BOAT ASSUMPTIONS	16
<b>TABLE 2.2</b>	TRUCK ASSUMPTIONS	18
<b>TABLE 2.3</b>	PROCESSING FACILITIES ASSUMPTIONS	18
<b>TABLE 2.4</b>	EXPORT ASSUMPTIONS	19
<b>TABLE 3.1</b>	PROCESSED SEAFOOD MANUFACTURING ASSUMPTIONS	21
<b>TABLE 3.2</b>	FISHERY DIRECT IMPACT	22
<b>TABLE 3.3</b>	BOAT BUILDING DIRECT IMPACT	22
<b>TABLE 3.4</b>	TOURISM DIRECT IMPACT	23
<b>TABLE 3.5</b>	CONSUMPTION IMPACT	24
<b>TABLE 7.1</b>	STAKEHOLDER CONSULTATION	A-1

## BOXES

<b>BOX 3.1</b>	CASE STUDY: DONGARA MARINE AND SOUTHERLY DESIGNS	23
<b>BOX 3.2</b>	CASE STUDY: THE LOBSTER SHACK	24



## SUMMARY AND KEY FINDINGS

ACIL Allen Consulting (ACIL Allen) has been engaged by the Western Rock Lobster Council (WRLC) to undertake an economic contribution study of the Western Rock Lobster Industry in 2016-17. In estimating the economic value of the Western Rock Lobster Industry, ACIL Allen developed an understanding of the Industry's supply chain, which provided the framework for the assessment of the Industry's key sectors and regions of operation.

The Western Rock Lobster Industry is an intrinsic part of the economic and social fabric of many coastal communities in Western Australia. While there are eight species of rock lobster off the coast of WA, the entire commercial catch of lobsters in WA is the Western Rock Lobster. The species represents one of the biggest single species fisheries in Australia, and WA is considered a world leader in the management of the Western Rock Lobster fishery.

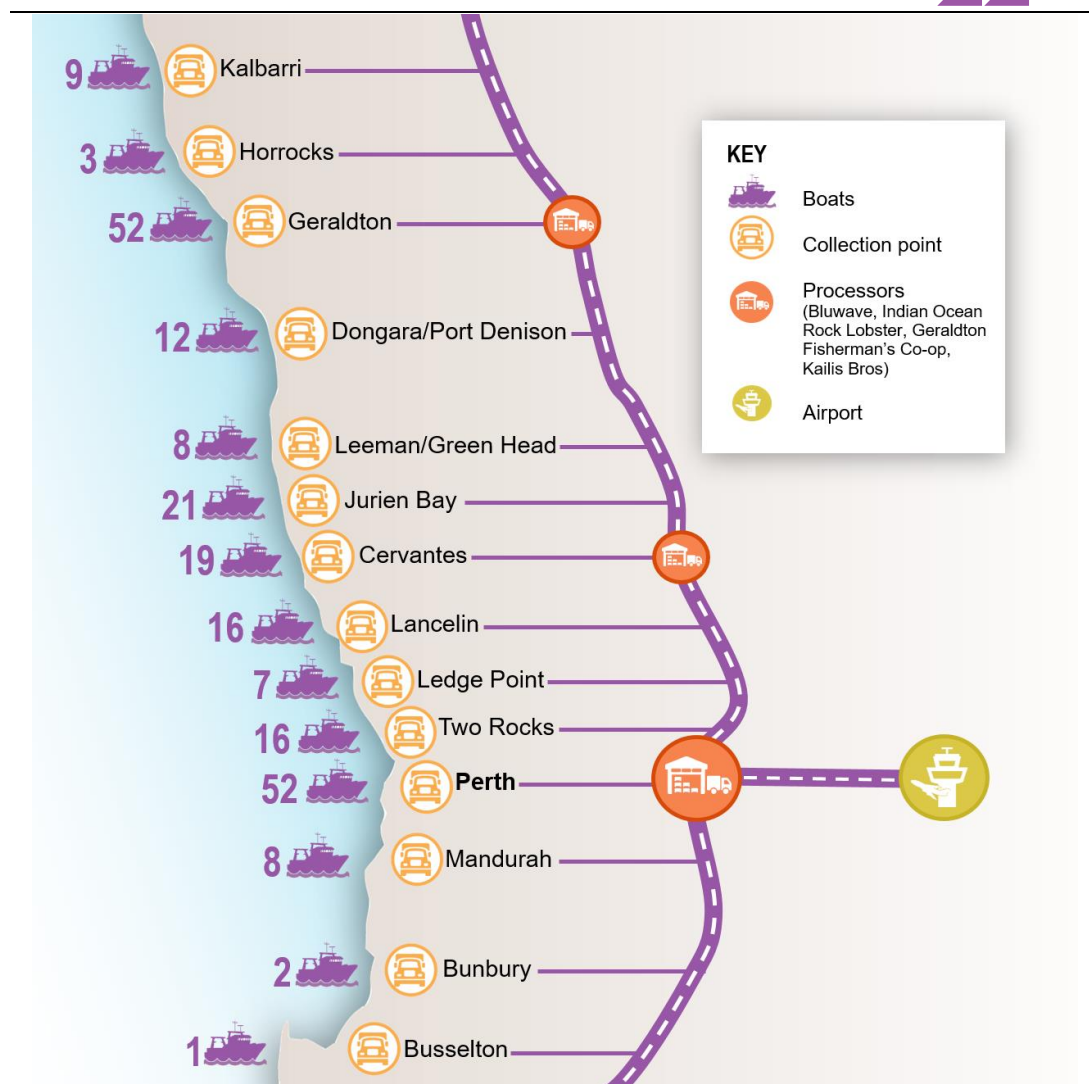
In recognition of the pursuit of sustainability, the Western Rock Lobster fishery was the first globally to achieve Marine Stewardship Council (MSC) certification, and has successfully maintained MSC Certified status since. Independent research has found that the MSC certification generates significant value to the Industry, through its social licence to operate, research and development direction and planning, improved management practices, credibility, government confidence and environmental responsibility.

The domestic sale and export of Western Rock Lobster – whether live, cooked or frozen – allows the Industry to generate opportunities in a range of sectors of the economy, from ship and boat manufacturing; seafood processing, transport and tourism. This study provides a further contribution to the knowledge of the Western Rock Lobster Industry by calculating its economic contribution to the WA economy and its regions.

Official reports suggest that the Western Rock Lobster's economic value to the WA economy is comparable to key primary industries such as wool, meat and sheep, and milk production. And relative to other jurisdictions, the Western Rock Lobster is a market leader, accounting for almost 58 per cent of Australia's lobster exports by value, and more than double the exports of lobsters from New Zealand.

ACIL Allen found that the Western Rock Lobster Industry generates hundreds of millions of dollars to the WA economy and its regions each and every year. The economic contribution is reflected across the Industry supply chain, where 226 lobster boats offload their catch to receival points before being transferred onto trucks or directly to local processing facilities. It is at the processing facilities where the lobster catch is graded and stored prior to export or on-sale to the local market. A stylised version of the supply chain is presented below.

FIGURE ES 1 WESTERN ROCK LOBSTER INDUSTRY SUPPLY CHAIN



SOURCE: ACIL ALLEN CONSULTING

In estimating the economic contribution of the Western Rock Lobster Industry, ACIL Allen has used its Input-Output models of the WA economy and its regions to produce results in terms of the Industry's contribution to economic output (Gross Value Added) and employment (FTE jobs) in the reference year of 2016-17. ACIL Allen further estimated the economic contribution of the Industry across the four sectors that make up the Industry, namely Fishery, Processed Seafood Manufacturing, Boat Building, and Tourism.

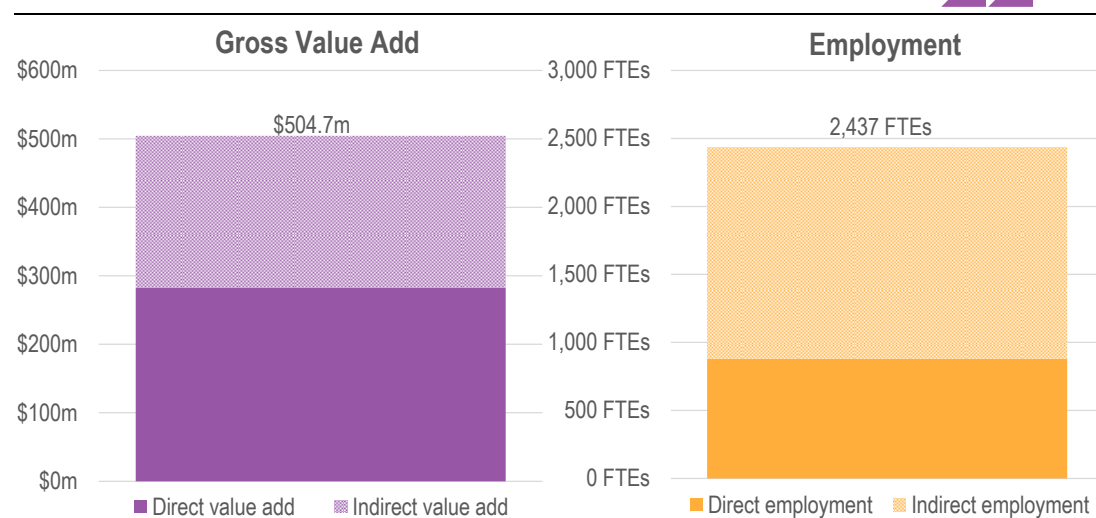
ACIL Allen estimates the Industry accounted for \$282 million of direct economic output across WA in 2016-17, which is the result of the *value added* activities generated in the Industry across the supply chain – from harvesting through to export to market. This level of activity in turn generated a further \$222 million in indirect economic output across WA, primarily in the form of additional consumption spending from the wages and incomes generated by participants in the Industry.

Overall, it is estimated that the **Western Rock Lobster Industry generated \$505 million in direct and indirect economic output in the WA economy in 2016-17**. The implied Industry multiplier is 1.79, which means that for every dollar spent by the Industry in WA, additional spending of \$0.79 is generated across the economy.

In terms of employment, the Industry directly accounted for 878 FTE jobs in 2016-17. A further 1,558 indirect FTE jobs were generated throughout the economy as a result of the activities across the Industry value chain.

Overall, the **Industry accounted for 2,437 direct and indirect FTE jobs in 2016-17**. The implied Industry employment multiplier is 2.77, meaning that for every direct FTE job generated by the Industry in WA, a further 1.77 FTE jobs are generated throughout the economy.

**FIGURE ES 2** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17



SOURCE: ACIL ALLEN CONSULTING

The largest sector that makes up the Industry in Gross Value Added terms is the Fishery sector, accounting for 85 per cent (or \$241 million) of the total direct economic output generated in the Industry. The Processed Seafood Manufacturing sector accounted for the majority of the remaining direct output generated by the Industry (15 per cent or \$41.2 million).

To generate this level of economic output, these sectors in turn require inputs from other sectors that are part of the Industry's overall supply chain, generating indirect value added activity in the WA economy. An additional \$158 million in indirect economic impact was generated in the Fishery sector, \$29.2 million in Processed Seafood Manufacturing, \$28.5 million in Boat Building, and \$6.6 million in Tourism activities.

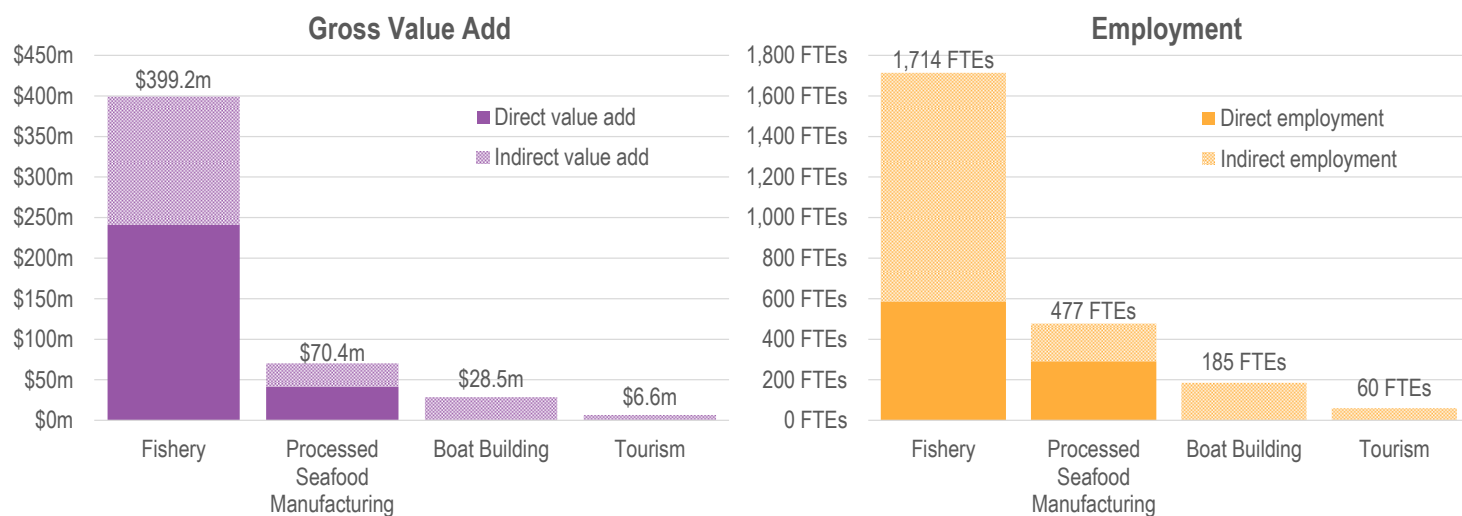
Across the Industry supply chain, the **Fishery sector generated the largest direct and indirect economic impact (\$399 million), with significant contributions in Processed Seafood Manufacturing (\$70.4 million), Boat Building (\$28.5 million) and Tourism (\$6.6 million) in 2016-17.**

In terms of employment, the Fishery sector was the largest employing sector in the Industry, with 587 FTE jobs directly employed, and a further 1,127 FTE jobs indirectly employed. In total, there were 1,714 direct and indirect FTE jobs created in the Fishery sector in 2016-17.

The Processed Seafood Manufacturing sector is the second largest employer across the Industry supply chain, directly employing 291 FTE jobs, with a further 186 FTE jobs indirectly created as a result of the activities generated in the Industry. In total, there were 477 FTE jobs created in the Processed Seafood Manufacturing sector as a result of the Western Rock Lobster Industry.

The Industry also generated scores of jobs in Boat Building (185 FTE jobs) and Tourism (60 FTE jobs) sectors in 2016-17.

FIGURE ES 3 ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17

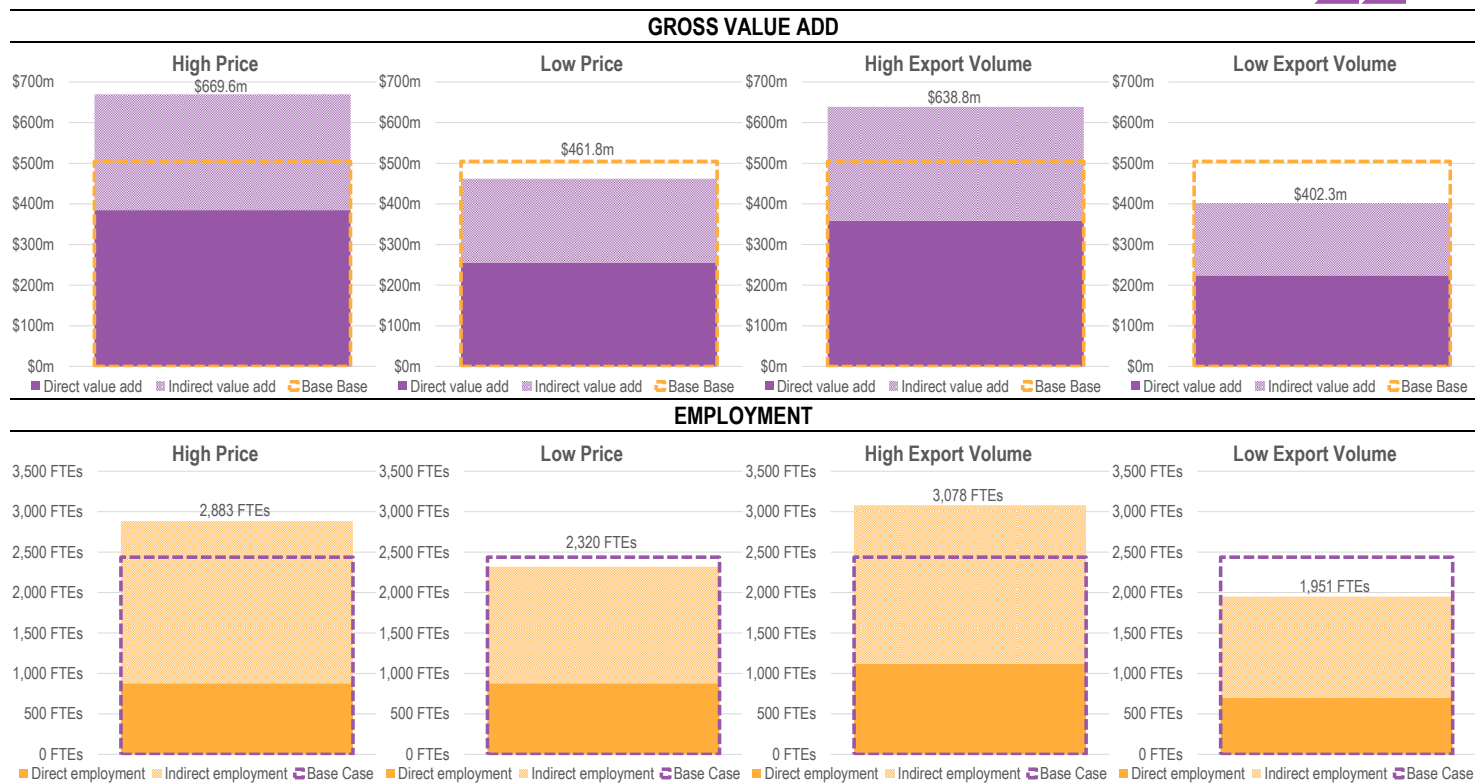


SOURCE: ACIL ALLEN CONSULTING

In order to assess the degree to which the Industry changes depending on the export price or the quantity exported, ACIL Allen also undertook sensitivity analysis modelling the most recent low and high export prices achieved by the Industry, and a low and high export volume scenarios as realistic bounds for the contraction or growth of the total catch in the Industry in a given year. Relative to the base case results:

- under the **low price** scenario it is estimated the Industry's total output will fall by eight per cent to \$462 million, and employment will fall by five per cent to 2,320 FTE jobs;
- under a **high price** scenario it is estimated the Industry's total output will increase by 33 per cent to \$670 million, and employment will rise by 18 per cent to 2,883 FTE jobs;
- under a **low export volume** scenario it is estimated the Industry's total output will fall by 20 per cent to \$402 million, and employment will fall by 20 per cent to 1,951 FTE jobs; and
- under a **high export volume** scenario it is estimated the Industry's total output will increase by 27 per cent to \$639 million, and employment will rise by 26 per cent to 3,078 FTE jobs.

FIGURE ES 4 SENSITIVITY ANALYSIS – LOW AND HIGH PRICES; LOW AND HIGH EXPORT VOLUMES



SOURCE: ACIL ALLEN CONSULTING

For the purposes of this study, ACIL Allen also estimated the local economic benefits arising from the Western Rock Lobster Industry at a regional and town level. In calculating these benefits, ACIL Allen estimated the Gross Town Product the relevant towns using ACIL Allen’s modelling framework.

The **Northern Zone** was defined to include Kalbarri, Geraldton, Dongara/Port Denison, Leeman, Jurien Bay, Cervantes, and Lancelin. ACIL Allen estimated that the Western Rock Lobster Industry generated **\$122 million in economic output and 581 FTE jobs in the Northern Zone in 2016-17**. The largest share of this output was concentrated in Geraldton (\$49.4 million), followed by Cervantes (\$24.5 million), Dongara/Port Dennison (\$16.3 million), Lancelin (\$15.6 million), Jurien Bay (\$15.4 million), Kalbarri (\$8.7 million) and Leeman (\$5.7 million).

The **Southern Zone** was defined to include Metropolitan Perth, Bunbury and Busselton. ACIL Allen estimated that the Western Rock Lobster Industry generated **\$308 million in economic output and 1,324 FTE jobs in the Southern Zone in 2016-17**, the majority of which was generated in Perth.

**FIGURE ES 5** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY LOCATION



SOURCE: ACIL ALLEN CONSULTING





## 1.1 Our Task

ACIL Allen Consulting (ACIL Allen) has been engaged by the Western Rock Lobster Council (WRLC) to undertake an economic contribution study of the Western Rock Lobster industry (the Industry).

The WRLC is the peak industry body representing the interests of the Industry. Its mission is that the Western Rock Lobster fishery is an iconic leader in sustainable fisheries management. The WRLC is delivering on its mission through its strategic plan, which has as one of its priorities *to demonstrate the WRL fishery's value to the economy and regional communities*.

This economic contribution study will provide the WRLC with evidence based information to effectively promote the industry's value to our stakeholders, government and the broader community.

In undertaking this study, ACIL Allen has developed a framework that will allow for the economic contribution of the Western Rock Lobster Industry to be measured on an annual basis. The data provided by stakeholders in this study has been de-identified and aggregated to an industry level in order to protect the confidential nature of the data supplied. Future updates of the economic contribution of the Western Rock Lobster Industry will be based on the methodology used in this study, to ensure the comparability of the data sources over time.

## 1.2 A Brief Introduction to the Western Rock Lobster Industry

*The Western Rock Lobster Industry is an intrinsic part of the economic and social fabric of many coastal communities in Western Australia.*

The Western Rock Lobster Industry is an intrinsic part of the economic and social fabric of many coastal communities in Western Australia. While there are eight species of rock lobster off the coast of WA, the entire commercial catch of lobsters in WA is the Western Rock Lobster. The species represents one of the biggest single species fisheries in Australia, and WA is considered a world leader in the management of the Western Rock Lobster fishery.

The Industry has been recognised for its potential as fishery since the early days of settlement within WA<sup>2</sup>, however commercial fishing commenced only in the mid 1950s from its traditional roots in Geraldton, Lancelin Island and Fremantle. The Western Rock Lobster is now considered a premium product internationally, and is consistently valued higher per kilogram than a majority of other species on the market.

The growth of the Industry during the 1950s pushed fishers to increasingly remote waters, and as a consequence settlements adjacent to ideal anchorage points were developed in order to service vessels. Towns such as Cervantes, Leeman, Jurien Bay and Kalbarri were established during this time, as fishers sought a more settled lifestyle with a place for family life and education opportunities<sup>1</sup>.

In 1961 the Western Fisheries Research Committee (the Committee) was established, with the intent of orienting the Industry toward optimising the catch and promoting a sustainable yield<sup>1</sup>. The

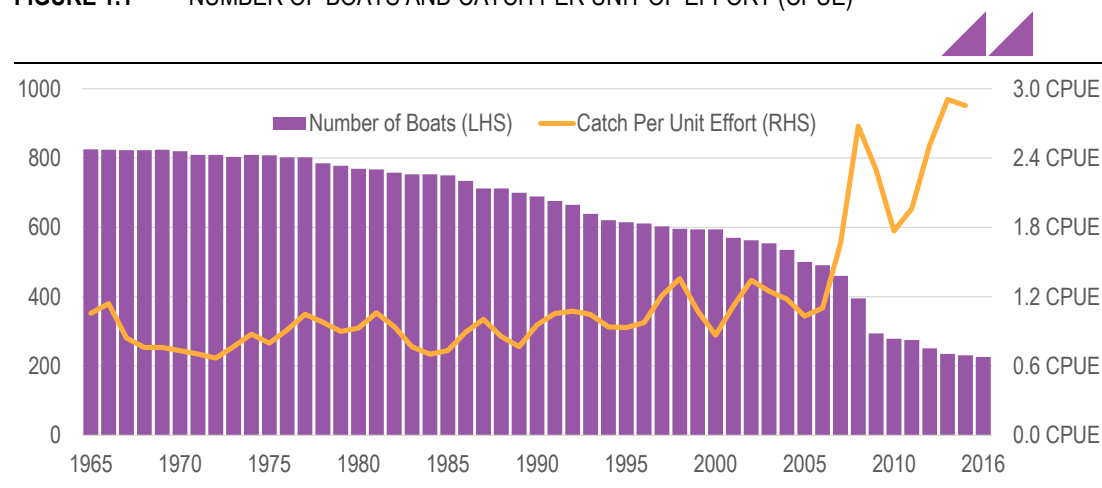
Committee and its scientific management implemented the puerulus count, which underpinned the industry and contributed to its world class reputation. The number of puerulus recorded each year shows a strong correlation with the availability of Western Rock Lobster in the subsequent three to four years<sup>5</sup>.

Between 1963 and 2008, the commercial harvest averaged around 11,000 tonnes per annum, ranging between 8,000 and 14,500 tonnes<sup>13</sup>. In 1963, a sustainable yield for the fishery was pursued, by freezing pot and licence numbers which limited entry to the fishery. As part of the management of the fishery, boat numbers were also restricted to 836 boats in 1963, and since then they have steadily continued to consolidate (refer to Figure 1.1)<sup>1</sup>.

In 2008, the puerulus count was at a forty year low, sparking concern within the Industry. In response, an annual commercial catch quota system was introduced, with the intent of restricting the mass of lobster available to harvest annually. Today, the total annual commercial catch is capped at 6,300 tonnes.

The Industry has continued to evolve from a fishery traditionally centred on large boats and harvests, to one that seeks to maximise effectiveness through minimising costs and managing beach prices. This can be seen by the gradual decline in boat numbers, and increase in catch per pot lift per annum in Figure 1.1. In 2016, it was estimated that some 226 boats harvested Western Rock Lobsters, as a result of the post 2011 consolidation attributed to the quota system.

**FIGURE 1.1** NUMBER OF BOATS AND CATCH PER UNIT OF EFFORT (CPUE)



Note: Catch per unit of effort (CPUE) is measured by the kg of caught lobster per pot pull.

SOURCE: ACIL ALLEN CONSULTING, DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONAL DEVELOPMENT

Prior to the implementation of the total annual commercial catch system, the social impacts of changes to the Industry's management on fleet hosting communities was researched by the Institute for Regional Development, in conjunction with the Fisheries Research and Development Corporation. The report, published in 2007, concluded that the changes experienced by the Industry has influenced the economic foundations of coastal towns and had a role in shifting social structures in such communities<sup>1</sup>.

KAL Analysis was commissioned by the Western Australian Fishing Industry Council in 2011 to assess the impact of the introduction of the quota system following concerns regarding the effect the new system had on coastal communities and their ability to thrive. While it was found that the quota system had had an effect on local communities, this needed to be considered in the broader context of other challenges for the localities, such as severe drought, a decline in international tourism, high fuel costs and a reduction in recreational fishing<sup>13</sup>.

In recognition of the pursuit of sustainability for the fishery, the Marine Stewardship Council (MSC) certification was pursued and achieved in 2000. The Marine Stewardship Council is an organisation established to improve management systems of fisheries worldwide, and a significantly influential body in this regard<sup>3</sup>. MSC certified fisheries undergo continual monitoring, and annual audits in addition to reassessment every five years. The Western Rock Lobster fishery was the first globally to

*The Western Rock Lobster Industry was the first fishery globally to achieve achieved Marine Stewardship Council certification in 2000, a status that it has maintained ever since.*

achieve such certification, and has successfully maintained MSC Certified status since. The Western Rock Lobster Industry was certified for the fourth time in 2017<sup>4</sup>, at the estimated cost of less than \$0.01 per kilogram per year of product.

In 2015, Agknowledge prepared an independent cost-benefit analysis of the MSC certification on the Industry. The key benefits of the certification were attributed to increased social licence to operate, research and development direction and planning, improved management practices, credibility, government confidence and environmental responsibility<sup>17</sup>.

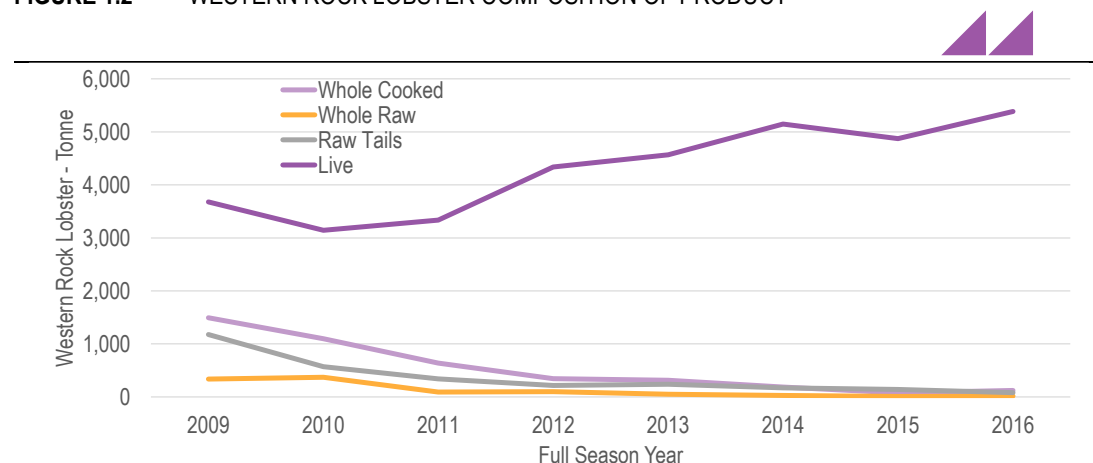
The development and sustainability of the Industry can also be seen through the value of Farm Management Deposits (FMD's) held by the Industry. The FMD scheme is a risk management strategy supported by the Commonwealth Government to assist primary producers manage uneven cash flows<sup>21</sup>. FMD's allow producers to contribute part of their income pre-tax to an account, which can be drawn upon in tougher financial years<sup>21</sup>.

The Fisheries Industry, of which the Western Rock Lobster Industry is the largest component, currently represents 84 per cent (approximately \$21 million) of all deposits for the Forestry and Fishing Industry in WA. Further, the Industry's contribution is greater than WA's Dairy and Livestock Industries (each holding approximately \$160,000 in the fund).

### 1.2.1 The Industry today

When boats land, their product is collected at a depo or via truck and then transported to processing facilities in Metropolitan Perth, Cervantes and Geraldton. Lobsters traditionally have gone to market as fresh whole, fresh tails or pre-cooked, but in recent years there has been a strong focus on live exports along a just-in-time supply chain<sup>17</sup>. The change in product form can be seen in Figure 1.2.

**FIGURE 1.2** WESTERN ROCK LOBSTER COMPOSITION OF PRODUCT



SOURCE: ACIL ALLEN CONSULTING, DEPARTMENT OF FISHERIES

Western Rock Lobsters have typically been sold domestically and exported to the USA, Taiwan and Japan. They are graded into a variety of sizes, and the USA, Taiwan and Japan each have a preference of a particular size as a result of cultural characteristics.

In recent years, growth in Chinese demand for luxury products has seen exports of the Western Rock Lobster redirected to mainland China. Chinese consumers regard live lobster as a luxury status symbol, and Australia's geographical proximity to China, as well as reputation for producing a prime product has met this market opportunity. Strong demand for live exported Western Rock Lobster to China has seen the price rise steadily, taking market share away from traditional markets of Japan, Taiwan and the USA. Today it is estimated that China is the destination for more than 90 per cent of the live export market<sup>7</sup>.

The domestic sale and export of Western Rock Lobster – whether live, cooked or frozen – allows the Industry to generate opportunities in a range of sectors of the economy, from ship and boat manufacturing; seafood manufacturing, transport and tourism. These opportunities, and the Industry

*The domestic sale and export of Western Rock Lobster – whether live, cooked or frozen – allows the Industry to generate opportunities in a range of sectors of the economy, from ship and boat manufacturing; seafood manufacturing, transport and tourism.*

more broadly, have been the subject of research that has focused on the Industry's target market opportunities and economic indicators.

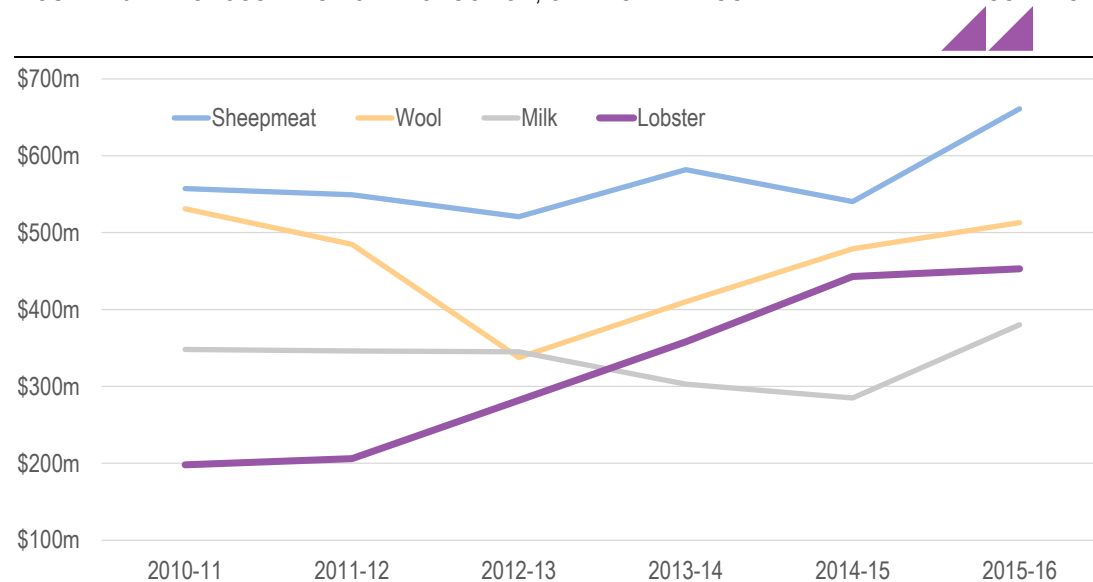
Recent reports specific to the Western Rock Lobster include the Department of Agriculture and Food commissioned report "Target market Opportunities in Asia for Rock Lobster", which details the global situation for all species of lobster and potential opportunities for Western Australia<sup>11</sup>.

Other reports more broadly referring to the Industry, and echoing the Asia-centric sentiment currently experienced, include ANZ's report Greener Pastures in 2012 that discusses the opportunities for Australia and New Zealand in the global soft commodity market. The report details the opportunities and challenges in pursuing Asian markets, ultimately concluding that they are significant to Australian and New Zealand agriculture as a whole<sup>18</sup>.

The Department of Primary Industries and Regional Development estimated the gross value of production<sup>a</sup> of the Western Rock Lobster in WA at \$453 million in 2015-16 (see Figure 1.3), which is comparable to Western Australian wool (\$513 million), meat from sheep (\$661 million) and milk (\$380 million) in the same year. The Industry is set apart by its rapid growth in gross value in the years between 2010-15 of 125 per cent, which is growth surpassed only by the Canola industry (299 per cent)<sup>12</sup>.

*It is estimated the gross value of production of the Western Rock Lobster in WA at \$453 million in 2015-16, which is comparable to Western Australian wool (\$513 million), meat from sheep (\$661 million) and milk (\$380 million) in the same year*

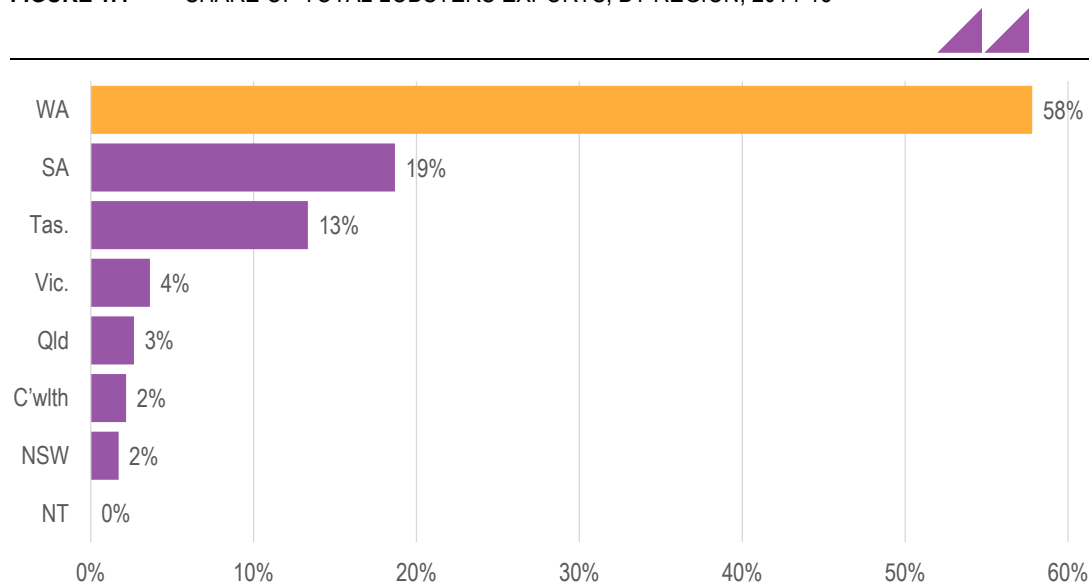
**FIGURE 1.3** GROSS VALUE OF PRODUCTION, OF WESTERN AUSTRALIAN PRIMARY INDUSTRIES



SOURCE: ACIL ALLEN CONSULTING, DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONAL DEVELOPMENT

Relative to other regions in Australia and New Zealand, the Western Rock Lobster Industry is a market leader, accounting for 58 per cent of the total Australian lobster exports by value in 2014-15<sup>23</sup>, and more than double the exports of lobsters from New Zealand<sup>19</sup>.

<sup>a</sup> Gross value of production differs from Gross Value Added, which is ACIL Allen's preferred measure of the Industry's economic contribution to WA and its regional towns, as it also incorporates taxes and subsidies.

**FIGURE 1.4** SHARE OF TOTAL LOBSTERS EXPORTS, BY REGION, 2014-15

*Relative to other regions in Australia and New Zealand, the Western Rock Lobster Industry is a market leader, accounting for 58 per cent of the total Australian lobster exports by value in 2014-15, and more than double the exports of lobsters from New Zealand*

SOURCE: ACIL ALLEN CONSULTING, ABARES

### 1.3 Estimating the Economic Contribution of the Industry

In order to estimate the economic contribution of the Industry, ACIL Allen has sourced existing Industry information and data, and supplemented this information through consultation with key representatives in the Industry. This helped ACIL Allen define the Industry's value chain, with the results of this analysis aggregated to provide a high level economic profile of industries directly linked to the Western Rock Lobster Industry.

ACIL Allen's methodology used to estimate the economic contribution of the Western Rock Lobster Industry to the WA economy is reflected in the structure of this report.

**Section 2** describes the **Western Rock Lobster Industry value chain**, based on Industry research and consultation with key industry representatives. These stakeholders are listed in Appendix A, and included processors, harvesters, boat manufacturing and servicing, and finance companies. In order to protect the confidentiality of the data provided by stakeholders, all asset or location specific data in this report has been aggregated into key components of the value chain, ensuring a necessary level of detail without revealing business-specific information.

**Section 3** provides a broad **profile of the key sectors that make up the Western Rock Lobster Industry**, in order to develop the financial inputs required to estimate the economic contribution of the Industry. In calculating the value of key sectors in the Industry, the starting point was the current export value of the total quota. The processors use this amount to pay the beach price to the harvesters, cover their operational costs and generate a profit. Harvesters pay for their inputs (including labour) and retain a margin as profit/personal income.

**Section 4** contains the results of the economic modelling, with the **overall economic contribution of the Western Rock Lobster Industry** calculated in Gross Value Added (GVA) terms and in relation to the contribution to employment in the WA economy. The economic contribution of the Industry is estimated by applying ACIL Allen's Input-Output table framework to the activity values of the key sectors in the Industry.

**Section 5** details the results of the **sensitivity analysis**, which highlights the degree to which the Industry's economic contribution under the base case presented in the previous section increases or decreases relative to changes to the export prices received or volumes exported.

**Section 6** provides a detailed profile of the **economic contribution the Industry makes to key regional towns in Western Australia**. Community benefits were estimated by allocating the state wide economic contribution to key towns and regions relevant to the Industry. This is estimated using ACIL Allen's Input-Output tables for the relevant regional economies.


## 1.4 Glossary of terms and abbreviations

<b>Economic contribution</b>	<p><i>A measure of the total economic activity in the production of new goods and services</i></p> <p>Economic contribution is a broader measure of the economy in that it includes the final value of goods and services produced (GDP/GSP/GRP), as well as the value of the intermediate consumption within the region to produce the goods and services, and imports from outside the region.</p>
<b>Employment</b>	The number of full time equivalent job years created as a result of a project or expenditure in the economy, which includes direct and indirect (flow-on) employment.
<b>Exchange rate</b>	The exchange rate is expressed as the AUD/USD exchange rate unless otherwise stated and is denoted as \$ or A\$ throughout the document.
<b>Exports</b>	The value of goods exported and amounts receivable from non-residents for the provision of services by residents.
<b>Gross product or real economic output</b>	<p><i>A measure of the size of an economy</i></p> <p>Gross product is a measure of the output generated by an economy over a period of time (typically a year). It represents the total dollar value of all finalised goods and services produced over a specific time period and is considered as a measure of the size of the economy. At a national level, it is referred to as Gross Domestic Product (GDP); at the state level, Gross State Product (GSP); at a regional level, Gross Regional Product (GRP); while at a town level, Gross Town Product (GTP).</p>
<b>Gross Value Added</b>	<p><i>A measure of the value of goods and services produced in an industry or sector of an economy.</i></p> <p>Gross Value Added (GVA) is the output of an industry or sector minus intermediate consumption. GVA therefore represents the value of all goods and services produced, minus the cost of all inputs and raw materials used to produce that good or service. Unlike Gross Product, GVA does not include the value of taxes minus subsidies.</p>
<b>Input-Output Tables</b>	Input-Output (I-O) tables capture the direct and indirect effects of expenditure by capturing, for each industry, the industries it purchases inputs from and also the industries it sells its outputs to. For example, the I-O model for Western Australia captures purchases from and sales to industries located in Western Australia, as well as imports from outside of Western Australia.
<b>Job years</b>	Real employment is measured in job years. A job year is employment of one full time equivalent (FTE) person for one year. Alternatively it can be expressed as one 0.5 FTE person for two years.

### LIST OF ACRONYMS

Abbreviation	Full name
ACIL Allen	ACIL Allen Consulting
ABS	Australian Bureau of Statistics
CPI	Consumer Price Index
I-O tables	Input Output Tables
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GRP	Gross Regional Product
GSP	Gross State Product
GST	Goods and Services Tax

Abbreviation	Full name
GVA	Gross Value Added
NPV	Net Present Value
LGA	Local Government Area
UWA	University of Western Australia
WRLC	Western Rock Lobster Council
WRL	Western Rock Lobster
The Industry	The Western Rock Lobster industry



WESTERN ROCK  
LOBSTER  
INDUSTRY VALUE  
CHAIN

2

In order to estimate the economic value of the Western Rock Lobster Industry, ACIL Allen developed an understanding of the Industry's value chain, which was informed by consultation with key stakeholders. By developing a value chain of the Western Rock Lobster Industry, ACIL Allen is able to estimate the activities associated with the Industry, and allocate these activities to the Industry's key sectors and regions. These estimates will in turn be the key inputs required to model the economic contribution of the Western Rock Lobster Industry to WA.

For the purposes of this study, ACIL Allen has estimated the key receipt points and the estimated number of boats for key towns in the Northern Zone (defined as all towns north of Ledge Point to Kalbarri). ACIL Allen has allocated boats to major towns in the Southern Zone into two regions – Perth and the South West. Metropolitan Perth runs from Two Rocks through to Mandurah, while the South West is inclusive of Busselton and Bunbury.

Based on stakeholder feedback, the value chain can be described iteratively below.

1. **Boats** travel out and drop or tend to previously dropped pots, usually leaving port well before sunrise. The pots are left out on the ocean floor at various locations as determined by the fisherman. Once the catch has been taken on board, the pots are re-baited, and returned to the ocean floor (potentially in a different location). The catch itself is then transferred to a tank, in order to preserve the quality of the product. Sea water is pumped via an on-board series of pumps through the tanks as a part of this live holding process. Stakeholders indicated that on average, pots are attended to at a minimum of once a week.
2. Harvested product is landed at a **receipt point** where it is transferred to trucks. The trucks are equipped with spray beds, which allows for product to remain live but reduces the need for hauling significant supplies of water.
3. The harvested product is **transported by truck to a processing facility**, where it is prepared for export. A key challenge for export is the relatively short duration in which the product remains alive. Typically, Western Rock Lobsters may remain out of the water for a maximum of 32 hours. The majority of processing and export takes place in the Perth Metropolitan area. The live product is typically packed into polystyrene cartons, with wood-shavings and additional cool packs in order to maintain its condition for export.

As the system is highly flexible, boats do not necessarily return to the same port/town. In order to estimate the economic activity by town, ACIL Allen allocated boats to the regions and towns based on the insights gained during stakeholder consultation, and economic data produced by the Australian Bureau of Statistics (ABS). Consultation data was referenced against ABS 2011 Census data<sup>b</sup> which records the number of persons identifying themselves as rock lobster fishers on Census Night at a state suburb level.

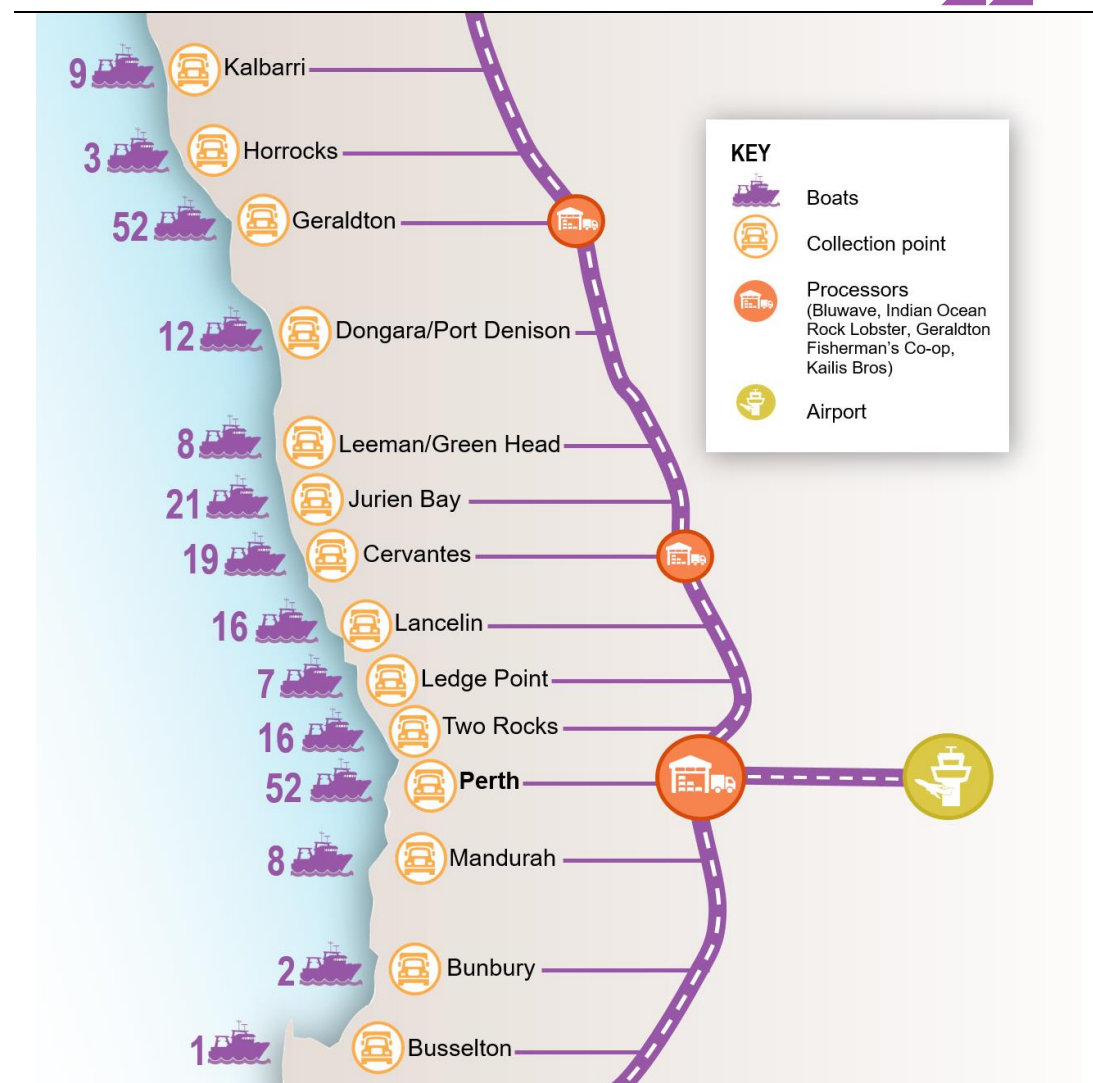
<sup>b</sup> At the time of this study, the relevant 2016 Census data was not available.



In order to protect the confidentiality of the data provided by stakeholders, all asset or location specific data in this report was aggregated into key components of the value chain, ensuring a necessary level of detail without revealing business specific information.

The Western Rock Lobster Industry value chain presented in Figure 2.1 below and described in further detail in the remainder of this section of the report.

**FIGURE 2.1** THE WESTERN ROCK LOBSTER INDUSTRY SUPPLY CHAIN



SOURCE: ACIL ALLEN CONSULTING

## 2.1 Boats

Lobster vessels are used to collect pots and deliver product to shore. The vessels are usually designed specifically for the open water experienced by Western Rock Lobster fishermen, and engineered to withstand harsh and technically challenging conditions.

The boats used range from 52ft to 65ft, although it was noted that smaller and larger boats than this are in operation. An increasing trend in the Industry is towards larger boats (both new and second hand), reflecting a push to achieve greater efficiencies in the harvesting of Western Rock Lobsters by increasing carrying capacity.

Key inputs required for the operation of boats include lobster pots, fuel, bait, labour, fishing equipment and servicing and maintenance:

- **Pots** are constructed from jarrah, with a steel base and usually some form of anode. They cost approximately \$250 a pot, according to stakeholders consulted. Approximately 25 per cent of pots are replaced per year due to degradation over time. While pots are usually purchased from a supplier, they are often made by a fisherman's crew when not fishing, such as during periods where prices are low or weather conditions poor.
- **Fuel** consumption varies depending on where the boats fish off the coast, and the size of the boat. Harvesters typically source fuel through the processor they sell product to. This way processors can source sufficient quantity in order to negotiate lower prices with fuel suppliers.
- **Bait** consists of fish heads, typically imported from New Zealand. Common bait species include Hoki (Blue Grenadier), Blue Mullet, Tuna and Salmon.
- Irrespective of the size of the vessel, a typical **crew** consists of three members (two deckhands and a skipper). The deckhands are employees, while the skippers are typically the license and vessel owner. Many owners employ a third deckhand for contingencies. To account for this, the study assumes 2.5 deckhands per boat (full time equivalent (FTE) basis). Crew can be paid either a fixed wage or according to the boat's catch. The assumptions in the table below take this into account.
- **Equipment** requirements, other than pots, include sea water pumps, rope, winches, on-board tanks for the catch, and other consumables.
- The amount spent on **boat servicing and maintenance** appears to depend on harvester preferences and the profits made during the year. At a minimum, boats must be lifted out of the water and be de-fouled. However, more significant maintenance requirements are needed at longer time intervals, such as an engine overhaul every five to 10 years). In good years boat owners appear to conduct non-essential repairs and modifications, while in leaner years they tend to minimise spending. The figures presented in Table 2.1 are intended to represent an industry-wide annual average for a neutral year.

**TABLE 2.1** LOBSTER BOAT ASSUMPTIONS

Description	Value
Annual pot cost	\$20,650
Annual fuel costs	\$74,000
Annual bait costs	\$53,200
Annual spend maintenance, per boat	\$80,000
Annual equipment costs	\$50,200
Annual wage for skipper	\$130,000
Annual income per crew member (mix of fixed wage and catch based)	\$89,055
Number of boats	226
Crew per boat	2.5 (average) (FTE)
Skippers per boat	1 (FTE)
Boats with employed skippers	23 (approx. 10 per cent)
<b>Total annual boat maintenance cost</b>	<b>\$17,038,248</b>
<b>Total annual fuel cost</b>	<b>\$15,750,000</b>
<b>Total annual gear cost</b>	<b>\$10,710,000</b>
<b>Total annual wages</b>	<b>\$50,661,748</b>

Note: These are all averages, derived from an accurate estimate of the state wide total

SOURCE: ACIL ALLEN CONSULTING

The lobster catch from each boat is offloaded at receival points and transferred to tanks within either processing facilities or into spray bed tanks within trucks. For the purposes of this study, and to preserve the anonymity of the contributing stakeholders, each of the 226 currently operating lobster vessels were allocated an equal portion of the total 6,300 tonne quota. This translated to 29.5 tonnes per vessel, with this standard vessel catch used to allocate state-wide estimates to regions and towns.

Table 2.1 shows the assumptions relating to boats that will be used in the model. The assumptions are all averages, derived from estimates of the state wide totals.

## 2.2 Receival points

Receival points are used to transfer lobsters to trucks for transport to processing facilities. In the past, physical warehousing facilities were used. These facilities contained tanks that pumped seawater through them in order to keep the product alive. Historically, such facilities employed several operators.

The majority of the consultation participants indicated that their catch was directly received and transferred to trucks, without the added handling of an additional warehouse facility, given the trend towards just in time live export. The change in the management of the fishery has seen the pursuit of economies of scale amongst the fishers, and consolidation of the Industry to have fewer, larger fishers. As such, more catch comes in at each point in time which economically justifies a more fluid receival and transferral mechanism. On this basis, it was assumed that receival points were not considered likely to generate a significant share of the fishery industry's contribution to the economy and therefore excluded from the analysis.

## 2.3 Trucks

Trucks are used to collect product from collection points and carry it to processing facilities. In carrying capacity, trucks range from two dead weight tonnes to ten dead weight tonnes. Trucks are for the most part dedicated lobster trucks, which is due to the requirements of the product they transport. Trucks are fitted out with a water spray system that keeps the product alive, and maximises fuel efficiency by reducing water haulage costs.

For the purposes of this study, and to preserve the confidentiality of participating stakeholders, it was assumed that the all trucks carry the same amount of product.

A five tonne truck dedicating to transporting lobsters was determined to carry approximately 400 tonnes of product over the course of a year for which it has to travel 145,500 km. It was noted that trucks typically operate on a "milk run" – servicing majority of the towns required by each processor in a loop – in order to maximise the efficiency of the operation.

Trucks typically require one full time employee to operate at any given moment, however due to contingencies it was assumed that one and a half full time employees are required to operate per five tonne truck equivalent. Other inputs include annual servicing, major servicing at longer intervals, fuel, tyres, tanks, licencing, and water pump systems. The Transport and Infrastructure Council has modelled vehicle operating costs for 20 vehicle classes to generate total average per kilometre operating cost<sup>8</sup>. Applied to the average travel distance estimated above – and assuming moderately rough roads at speeds of 100km per hour – the average five tonne truck equivalent operation cost in this instance is \$91,405 per annum. The Transport and Infrastructure Council allows for this figure to be broken down into sub-components – namely fuel consumption and maintenance and repair costs – which in this instance was a 49 per cent and 51 per cent split of annual costs respectively.

Table 2.2 shows the assumptions relating to trucks that will be used within the model. The assumptions are all averages.

**TABLE 2.2** TRUCK ASSUMPTIONS

Description	Value
Number of trucks	16 five tonne truck equivalents
Employees per truck	1.5 FTE
Average distance travelled annually	145,500 km
Total annual cost per truck	\$91,405
Average annual wage per driver	\$50,000
<b>Total annual wages</b>	<b>\$1,181,250</b>
<b>Total annual cost</b>	<b>\$1,439,622</b>

Note: These are all averages, derived from an accurate estimate of the state wide total  
 SOURCE: ACIL ALLEN CONSULTING

## 2.4 Processing facilities

Processing facilities are the warehouses where lobster is held prior to export or on-sale to the local market. Processing facilities are also where product is graded into each of the separately sized products available for sale.

The facilities consist of tanks and packing facilities. In the past, when live lobster exports were not the dominant product, cooked tail, cooked whole, frozen and other lobster products were processed at these facilities. While cooking, freezing and packaging facilities are still present in some of these processing facilities, it was noted that some processors are now seeking to downsize these capabilities within their operations reflecting the changing preferences in the market.

Live lobster exports currently dominate the market. For export, product is cooled to a temperature lower than four degrees (Celsius) – which induces a hibernation like state – and packaged. Inputs to processing plants include refrigeration facilities, tanks, water pumping facilities, polystyrene boxes, cool packs, wood shavings, labour and warehousing facilities.

In total, there are four processing facilities in WA; two are located in the Perth Metropolitan region, one in Geraldton, and one in Cervantes. Together they are assumed to employ 291 FTE staff with the average annual pre-tax incomes specified in Table 2.3.

**TABLE 2.3** PROCESSING FACILITIES ASSUMPTIONS

Description	Value
Support and managements staff	58 FTE
Processing employees	233 FTE
Average wage for support and managements staff	\$50,000
Average wage for processing employees	\$60,000
<b>Total wages paid</b>	<b>\$15,151,500</b>
Other operating costs	\$5,556,063
<b>Total</b>	<b>\$20,707,564</b>

Note: These are all averages, derived from an accurate estimate of the state wide total  
 SOURCE: ACIL ALLEN CONSULTING

## 2.5 Exports of Western Rock Lobsters

The majority of the Western Australian Rock Lobster that is in prime condition upon reaching the processing facility is exported. Product that is too damaged for export – such as a broken antennae or leg – is often sold domestically to local restaurants.

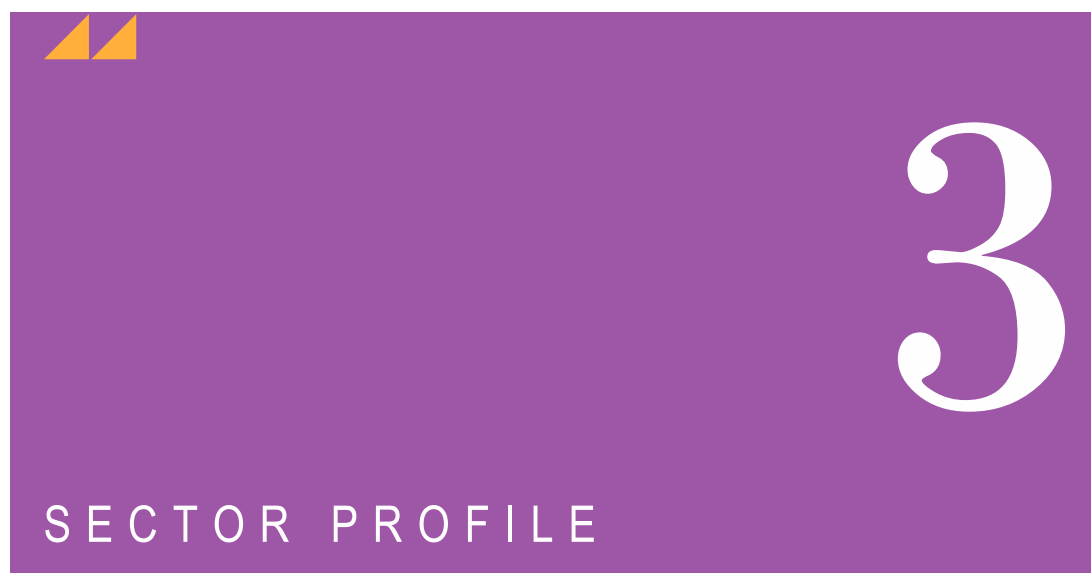
The Western Rock Lobster is a time sensitive product, and there is typically a time range of 32 hours for the product to reach its final destination. Rock lobsters are exported via air freight.

ACIL Allen has estimated the total export value of the Western Rock Lobster Industry in 2016-17 was \$438 million, based on the assumptions presented in Table 2.4. This value presents the starting point ACIL Allen used to calculate the value of the sectors that make up the supply chain of the Industry.

**TABLE 2.4** EXPORT ASSUMPTIONS

	Input	Value	Source
E1	Quota	6,300 tonnes	Regulation
E2	Average export price	55 USD/kg	Consultation
E3	Average USD / AUD exchange rate	0.79 USD / AUD	RBA (2014 to 2017 average)
<b>A</b>	<b>Total export value</b>	<b>A\$438,001,587</b>	<b>(E1*E2)/E3</b>

SOURCE: ACIL ALLEN CONSULTING



The Industry's economic contribution will be estimated as the aggregate of the four key sectors presented in this section and the consumption expenditure induced by the incomes earned by those operating in the Industry. The sector profiles are developed by tracing back the value chain from the export points to the ocean. The starting point of this valuation is the current export value of the total quota. It is assumed that processors use this amount to pay the beach price to the harvesters, cover their costs and generate a profit. Harvesters then pay for their inputs (including labour) and retain the remaining amount as an operating surplus and mixed income.

ACIL Allen's primary source of information and market intelligence was obtained through the stakeholder consultation process, background reports and desktop research. Where possible, this market information was referenced against publicly available statistics (predominately from the ABS).

In preparing this report, ACIL Allen was provided with the financial information of five anonymous boat operators which was then aggregated and averaged so as to ensure that individual information was not disclosed.

In order to ensure comparability with other publications and future research, activities are allocated to the standard ABS industry classifications.

### 3.1 Processed Seafood Manufacturing

The ABS considers Processed Seafood Manufacturing as processing fish or other seafoods, where the processes include skinning or shelling, grading, filleting, boning, crumbing, battering and freezing of the seafood. This class also includes operating vessels which gather and process fish or other seafoods.

The starting point of this valuation is the current export value of the total quota presented in Table 2.4. This figure represents the total revenue of the processors which the ABS categorises as part of the Processed Seafood Manufacturing sector.

Live lobsters are of course the key input to this sector, with the processors paying fishers what is termed the **beach price**. Based on the current quota and the average beach price over the past 12 months, the total product value is just under \$389 million. As is the case with most commodities markets, the beach price for lobsters is subject to the demand and supply conditions at a particular time. The other key inputs are:

- **road transport:** which ACIL Allen estimated based on the number of trucks required by the sector and distance travelled derived in Table 2.2; and
- **wages:** which ACIL Allen estimated based on the number of employees required for processing and truck driving by the sector presented in Table 2.2 and Table 2.3.

**TABLE 3.1** PROCESSED SEAFOOD MANUFACTURING ASSUMPTIONS

	Input	Value	Source
P1	Beach price	62 AUD/kg	GFC website and consultation
P2	Transport cost	\$1,439,622	ACIL Allen research
P3	Wages paid	\$16,332,750	ACIL Allen research
P4	Other inputs and operating surplus	\$31,619,577	A-B-P2-P3
<b>B</b>	<b>Total product value</b>	<b>\$388,609,639</b>	P1*E1

Note: Beach price sourced from: <https://www.brolos.com.au/beach-price/>

SOURCE: ACIL ALLEN CONSULTING

## 3.2 Fishery

The ABS considers Fishing as the catching of rock lobsters or crabs from their natural habitats of ocean or coastal waters, using baited pots.

The Fishery sector provides the key input to the processors. ACIL Allen estimates that the annual total product value was just under \$389 million in 2016-17. This figure represents the total revenue of the licence owners and harvesters which the ABS categorises as part of the Rock Lobster and Crab Potting sector.

In addition to the **boat-related maintenance and wage costs** presented in Table 2.1, the Fishery sector's key inputs are **boat replacements**. Reflecting feedback through stakeholder consultation, ACIL Allen estimated that on average six boats would be replaced each year, which is calculated by dividing the total number of fishing boats (226) by the average maximum age of a vessel (35 years). ACIL Allen has assumed that two of the replacement boats are "new builds" and that the remaining four are purchased from other industries and then modified for lobster fishing. While the maximum age of a vessel varies, stakeholder consultation found that none of the boats referenced exceeded the age of 25 years.

A small share of product is assumed to be used by harvesters for sales in their own restaurants. These costs are calculated on an opportunity cost basis and therefore linked to the beach price. This cost item is referred as **internal sales to food services**.

The economic contribution of **fuel and gear costs and incomes paid** will be assessed using the relevant sector specific I-O table industries. Boat servicing, purchasing of new boats and boat modifications will be the basis of assessment of the fishery sector's contribution to the **Boat Building** sector (Section 3.3) and internal sales for food services are part of the **Tourism** sector's contribution (Section 3.4). Licence holder income will be added to the **consumption** estimate (Section 3.5).

Bait cost and 2<sup>nd</sup> hand boat purchasing do not add value to the Western Australian economy as the former is predominantly imported from New Zealand and the latter is considered to be a transfer within the State's economy.

**TABLE 3.2** FISHERY DIRECT IMPACT

	Input	Value	Source
F1	Crew cost	\$50,661,748	Consultation
F2	Fuel	\$15,750,000	Consultation
F3	Gear	\$10,710,000	Consultation
F4	Bait (imported)	\$11,340,000	Consultation
F5	Boat servicing	\$17,038,248	ACIL Allen extrapolation
F6	Boat purchasing (new)	\$8,000,000	ACIL Allen extrapolation
F7	Boat purchasing (2 <sup>nd</sup> hand)	\$4,902,857	ACIL Allen extrapolation
F8	Modification of 2 <sup>nd</sup> hand purchases	\$1,225,714	ACIL Allen extrapolation
F9	Internal sales to food services	\$771,051	ACIL Allen extrapolation
<b>C</b>	<b>License holder income</b>	<b>\$268,210,020</b>	<b>B-F1-F2-F3-F4-F5-F6-F7-F8-F9</b>

SOURCE: ACIL ALLEN CONSULTING

### 3.3 Boat building and servicing

The ABS considers Boat Building and Servicing as being engaged in manufacturing or repairing vessels of under 50 tonnes.

The Boat Building and Servicing (the Boat Building) sector supplies harvesters with “new builds” and services the existing fleet. The revenue of the Western Australian boat building and repair services sector can be estimated as the sum of **boat servicing, purchasing of new boats and boat modifications costs** of the fishery sector. This amount is estimated to be just over \$26.2 million in an average year.

This estimate is the lower limit of the contribution of boat manufacturing that can be attributed to the Industry. Since there are numerous examples where a boat building business was originally set up to supply the Industry and has since diversified into supplying a wide range of national and international clients, it could be argued that since these businesses would not exist without the Industry, their entire revenue could be attributed to the Industry. **Box 3.1** presents a case study of such a business and provides an overview of this business’s economic footprint.

The economic contribution of the Boat Building sector will be assessed using the sector’s input requirements specified in the I-O table.

**TABLE 3.3** BOAT BUILDING DIRECT IMPACT

	Input	Value	Source
B1	Inputs and profits from lobster industry	\$26,263,962	F5+F6+F8

SOURCE: ACIL ALLEN CONSULTING



**BOX 3.1** CASE STUDY: DONGARA MARINE AND SOUTHERLY DESIGNS

Dongara Marine and Southerly Designs are two Dongara based firms that provide specialist marine vessel servicing, design and advice. Dongara Marine emerged in 1975, initially to service the cray fishing industry boats. Southerly Designs emerged in 1997, in its early years designing majority of the lobster fishing boats in the Industry throughout the 1980's and 1990's.

Both Dongara Marine and Southerly Designs have their roots in the Western Rock Lobster fishing industry, and have been able to expand and develop capability through the service of this industry. The firms have been able to leverage their experience in order to expand and develop into other non-Western Rock Lobster vessel specialities of naval architecture and ship building. Anecdotally, Western Rock Lobster fishing boats are highly versatile "sea trucks", and as such servicing the industry regularly provides scope for both firms to be intimately acquainted with design requirements and limitations for such vessels in harsh conditions and open ocean environments.

Built off the back of the Western Rock Lobster, Southerly Designs has used its experience to design utility vessels, charter and tourist vessels, pilot boats, military craft, leisure craft and marine lifting equipment. Southerly now also designs boats for the international market and has partners in Singapore, Mexico and Vietnam, as well as designing lobster vessels for other states in Australia.

Not only did the Western Rock Lobster Industry provide Southerly and Dongara a springboard for growth, the capabilities developed and consequent diversification have served as a buffer for both firms against the economic ups and downs in each of its service industries.

Both firms seek to stay aligned with their Western Rock Lobster Industry roots, whilst continuing to develop their expertise and expand their in-house processing capabilities. Anecdotally, this expertise will ideally provide further avenues for expansions into defence and sea rescue oriented vessels.

SOURCE: ACIL ALLEN CONSULTATION WITH INDUSTRY

### 3.4 Tourism

During stakeholder consultation, ACIL Allen was advised that one of the processors had set up its headquarters as a tourist attraction by offering tours of the facilities and offering lobster-based meals in the adjoining restaurant. Based on the visitor estimates provided to ACIL Allen during consultation, and the prices charged for tours and meals, the tourism impact of the Industry was calculated in Table 3.4. **Box 3.2** presents a detailed description of this business.

The economic contribution of the Tourism sector will be assessed using the sector's input requirements specified in the I-O table.

**TABLE 3.4** TOURISM DIRECT IMPACT

	Input	Value	Source
T1	Accommodation inputs and profits from lobster industry	\$1,229,400	ACIL Allen research
T2	Food services inputs and profits from lobster industry	\$3,500,000	ACIL Allen research

SOURCE: ACIL ALLEN CONSULTING

**BOX 3.2** CASE STUDY: THE LOBSTER SHACK

Indian Ocean Rock Lobster formed its processing facility in Cervantes in 2008. Public interest in the facility prompted Indian Ocean to open its doors for small, privately run tours. Since then continual interest in the facility and initiative on behalf of Indian Ocean has seen the steady growth of the tours' popularity and the subsequent birth of the Lobster Shack.

The Lobster Shack is a part of Indian Ocean Rock Lobster and caters to approximately 100,000 tourists annually. The Lobster Shack grew as a result of the popularity of the tour, and today consists of a guided multi-lingual audio described tour, small cinema, a restaurant, a merchandise store as well as a series of water based tours. Tours include lobster pot pulling, seal watching and deep sea fishing charters.

From inception to today, the Lobster Shack has benefitted from its close proximity to the highly popular Pinnacles and Nambung National park. Lake Thetis, a unique saline coastal lake, is also located in the vicinity. As a result, Cervantes has been and continues to be well positioned to service large international and domestic tour groups and visitors. Given the proximity of the Lobster Shack to the Pinnacles, which is visited by approximately 250,000 visitors annually, this provides an ongoing opportunity to provide food and accommodation for visitors to the site.

Increasingly as the Western Rock Lobster's reputation as a premium product from a pristine environment has seen – for some visitors – attraction priorities flip.

Looking forward, Indian Ocean Rock Lobster is actively investing further in the Lobster Shack and seeks to enhance the tourism offering by expanding its entertainment options and the overall customer experience.

SOURCE: ACIL ALLEN CONSULTATION WITH INDUSTRY

### 3.5 Household consumption

To this point the assessment of the Industry's economic impact has focussed on the physical inputs required for harvesting and processing. The employment it creates and the associated incomes can be used as the basis for assessing the Industry's social impact: that is, the employment opportunities and wealth created in a number of rural coastal communities.

Based on the analysis presented above, ACIL Allen estimates that the Industry employs approximately 870 FTE positions, generating \$72.5 million in gross wages. The Industry generates a further \$311 million in operating surplus and mixed income. Together, the wages, operating surplus and mixed incomes can be translated into the associated households' demand for goods and services by applying household spending patterns published by the ABS to the net incomes. Net incomes were estimated by deducting the income bracket relevant income tax as well as superannuation and workers' compensation.

The economic contribution of the demand for goods and services will be assessed using the sector's input requirements specified in the I-O table. The community benefits assessment will allocate (shares of) this demand to the key relevant rural coastal communities in order to quantify the Industry's social impact.

**TABLE 3.5** CONSUMPTION IMPACT

	Input	Value	Source
C1	Processed seafood manufacturing net income	11,718,665	ACIL Allen research
C2	Fishery: crews and skippers net income	35,408,874	ACIL Allen research
C3	Fishery: license holder income net income	149,290,338	ACIL Allen research
<b>D</b>	<b>Total</b>	<b>196,417,878</b>	ACIL Allen research
<b>E</b>	<b>Taxes etc.</b>	<b>122,087,920</b>	(C+F1+P3)-D

SOURCE: ACIL ALLEN CONSULTING



# ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY

# 4

This section presents the economic contribution of the Western Rock Lobster Industry, which has used the information presented in the previous sections as the critical inputs into ACIL Allen's I-O tables of the WA economy and its regional economies. For further information on ACIL Allen's I-O table and the modelling framework, please see Appendix B.

The economic contribution of the Industry is presented in terms of its contribution to **economic output** (Gross Value Added) and **employment** (FTE jobs), and by **sector** (as defined in Section 3).

## 4.1 Headline results

The Western Rock Lobster Industry generates hundreds of millions of dollars to the WA economy and its regions each and every year. The economic contribution of the activities directly associated with the Western Rock Lobster Industry and the indirect activities associated with the Industry in 2016-17 is presented in Figure 4.1 below. The economic contribution has been estimated based on the confidential financial information received from Industry proponents on their business, as well as the goods and services they purchase from other industries.

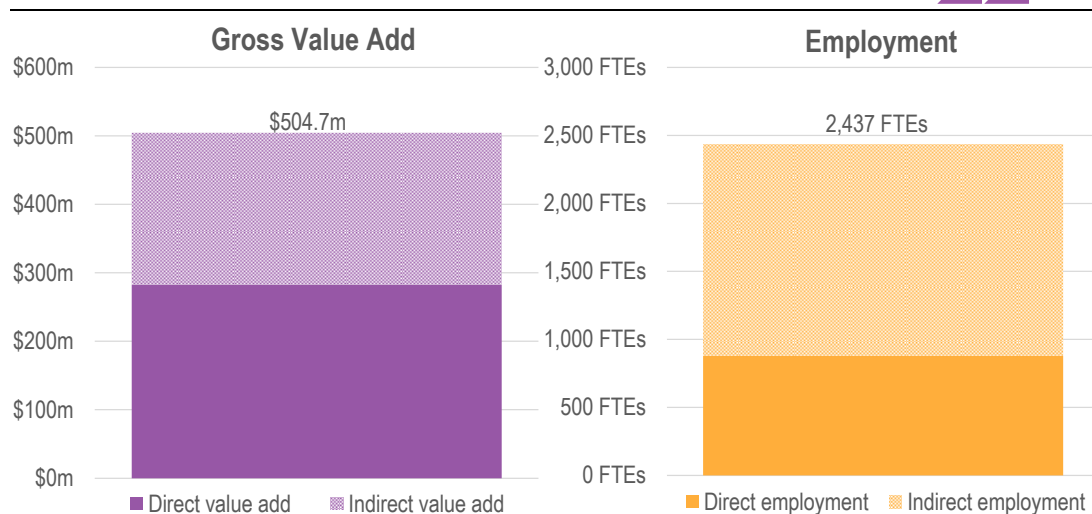
ACIL Allen estimates the Industry accounted for \$282 million of direct economic output across WA in 2016-17, which is the result of the *value added* activities generated in the Industry across the supply chain – from harvesting through to export to market. This level of activity in turn generated a further \$222 million in indirect economic output across WA, primarily in the form of additional consumption spending from the wages and incomes generated by participants in the Industry.

Overall, it is estimated that the **Western Rock Lobster Industry generated \$505 million in direct and indirect economic output in the WA economy in 2016-17**. The implied Industry multiplier is 1.79, which means that for every dollar spent by the Industry in WA, additional spending of \$0.79 is generated across the economy.

In terms of employment, the Industry directly accounted for 878 FTE jobs in 2016-17. A further 1,558 indirect FTE jobs were generated throughout the economy as a result of the activities across the Industry value chain.

Overall, the **Industry accounted for 2,437 direct and indirect FTE jobs in 2016-17**. The implied Industry employment multiplier is 2.77, meaning that for every direct FTE job generated by the Industry in WA, a further 1.77 FTE jobs are generated throughout the economy.

*In 2016-17, it is estimated that the Western Rock Lobster Industry generated \$505 million in economic output and 2,437 FTE jobs in the WA economy*

**FIGURE 4.1** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17

SOURCE: ACIL ALLEN CONSULTING

## 4.2 Contribution by sector

ACIL Allen also estimated the economic contribution of the Industry by the sectors that make up the total Western Rock Lobster Industry (refer to Figure 4.2). The Fishery sector is the largest sector in Gross Value Added terms, accounting for 85 per cent (or \$241 million) of the total direct economic output generated in the Industry. The Processed Seafood Manufacturing sector accounted for the majority of the remaining direct output generated by the Industry (15 per cent or \$41.2 million).

To generate this level of economic output, these sectors in turn require inputs from other sectors that are part of the Industry's overall supply chain, generating indirect value added activity in the WA economy. An additional \$158 million in indirect economic impact was generated in the Fishery sector, \$29.2 million in Processed Seafood Manufacturing, \$28.5 million in Boat Building, and \$6.6 million in Tourism activities.

Across the Industry supply chain, the **Fishery** sector generated the largest direct and indirect economic impact (\$399 million), with significant contributions in **Processed Seafood Manufacturing** (\$70.4 million), **Boat Building** (\$28.5 million) and **Tourism** (\$6.6 million) in 2016-17.

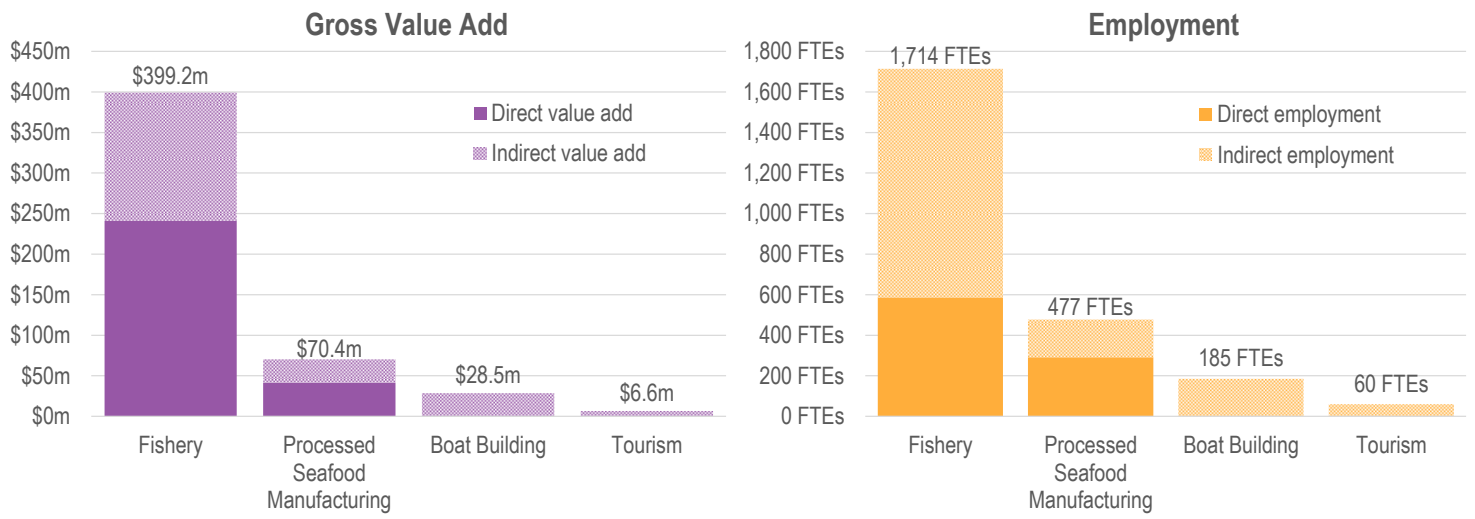
In terms of employment, the **Fishery sector was the largest employing sector in the Industry**, with 587 FTE jobs directly employed in the sector, and a further 1,127 FTE jobs indirectly employed in the Fishery sector. In total, there were **1,714 direct and indirect FTE jobs created in the Fishery sector in 2016-17**.

The Processed Seafood Manufacturing sector is the second largest employer across the Industry supply chain, directly employing 291 FTE jobs, with a further 186 FTE jobs indirectly created as a result of the activities generated in the Industry. In total, there were **477 FTE jobs created in the Processed Seafood Manufacturing sector** as a result of the Western Rock Lobster Industry.

The Industry also generated scores of jobs in **Boat Building (185 FTE jobs)** and **Tourism (60 FTE jobs)** sectors in 2016-17.

*Across the Industry supply chain, the Fishery sector generated the largest economic impact (\$399 million), with significant contributions in Processed Seafood Manufacturing (\$70.4 million), Boat Building (\$28.5 million) and Tourism (\$6.6 million) in 2016-17.*

**FIGURE 4.2** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING



# 5

## SENSITIVITY ANALYSIS

ACIL Allen's study has focussed on understanding the economic contribution of the Western Rock Lobster Industry, based on an assumed export price of A\$70 per kilogram in 2016-17. In order to assess the degree to which the Industry changes depending on the export price or the quantity exported, ACIL Allen has modelled the following scenarios:

- **Low price scenario:** export value of Western Rock Lobsters decreases to A\$63 per kilogram;
- **High price scenario:** export value of Western Rock Lobsters increases to A\$95 per kilogram;
- **Low export volume scenario:** export quantity of Western Rock Lobsters decreases to 5,500 tonnes; and
- **High export volume scenario:** export quantity of Western Rock Lobsters increases to 8,800 tonnes.

The price scenarios have been selected as they represent the most recent low and high export prices achieved by the Industry. The quantity scenarios have been selected as they represent realistic bounds for the contraction or growth of the total catch in the Industry.

The results under each scenario are detailed below.

### 5.1 Low Price Scenario

Under a lower price scenario, the primary impact is in the form of the wages paid to employees that are tied to the value of Western Rock Lobsters and the profits generated by the Industry.

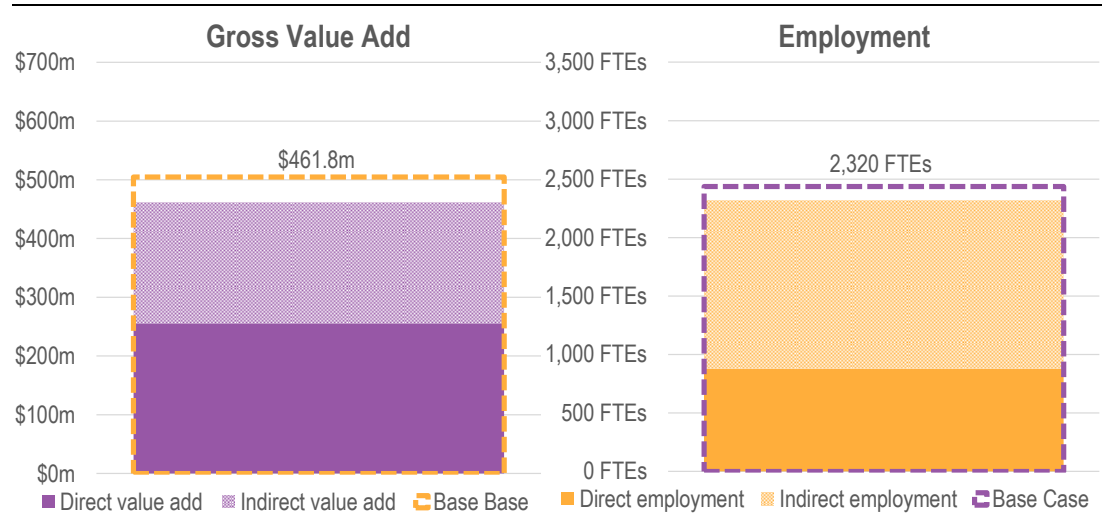
Relative to the base case, it is estimated the **Industry's total output, in Gross Value Added terms, decreases by eight per cent to \$462 million under a low price scenario** (refer to Figure 5.1).

Lower wages and profits generated in the Industry primarily impacts on the broader economy through lower levels of consumption relative to the base case.

Lower levels of household consumption in turn impacts on employment, with **the Industry's total contribution to employment in WA estimated to fall by five per cent to 2,320 FTE jobs.**

*Relative to the base case, it is estimated the Industry's total output will fall by eight per cent to \$462 million, and employment will fall by five per cent to 2,320 FTE jobs under a low price scenario*

**FIGURE 5.1** LOW PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17

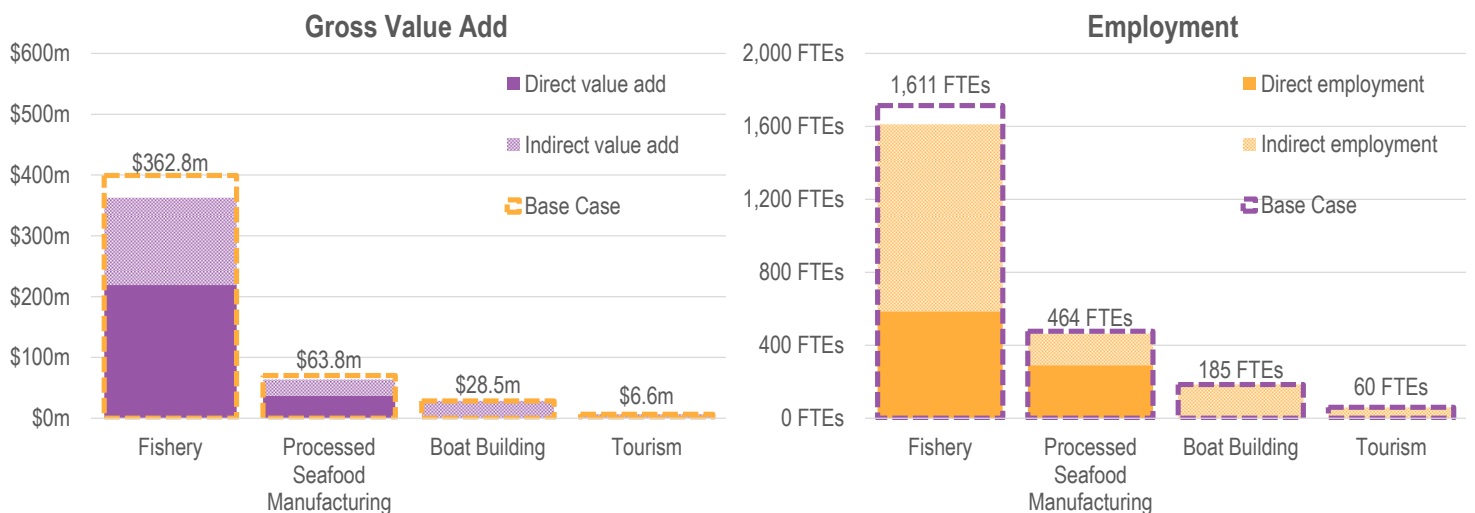


SOURCE: ACIL ALLEN CONSULTING

The impact of lower wages and profits are further represented in Figure 5.2, with the Fishery sector's Gross Value Added estimated to fall by nine per cent (to \$363 million), and the Processed Seafood Manufacturing sector estimated to fall by nine per cent (to \$63.8 million).

The consumption impact of lower wages and profits reduces employment levels in the Fishery sector by six per cent to a total of 1,611 FTE jobs and in the Processed Seafood Manufacturing Industry by three per cent to a total of 464 FTE jobs, but does not impact on employment in any other sectors of the Industry.

**FIGURE 5.2** LOW PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING

## 5.2 High Price Scenario

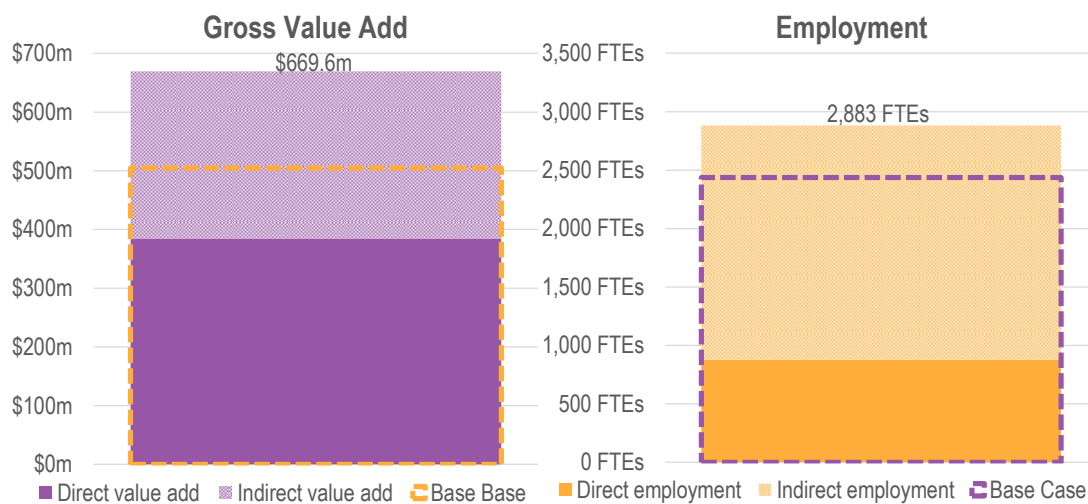
Under a higher price scenario, the primary impact will also be in the form of the wages paid to employees that are tied to the value of Western Rock Lobsters and the profits generated by the Industry.

Relative to the base case, it is estimated the Industry's total output will increase by 33 per cent to \$670 million, and employment will rise by 18 per cent to 2,883 FTE jobs under a high price scenario

Relative to the base case, it is estimated the Industry's total output, in Gross Value Added terms, increases by 33 per cent to \$670 million under a high price scenario (refer to Figure 5.3). Higher wages and profits generated in the Industry primarily impacts on the broader economy through higher levels of consumption relative to the base case.

Higher levels of household consumption in turn impacts on employment, with the Industry's total contribution to employment in WA estimated to increase by 18 per cent to 2,883 FTE jobs.

**FIGURE 5.3** HIGH PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17

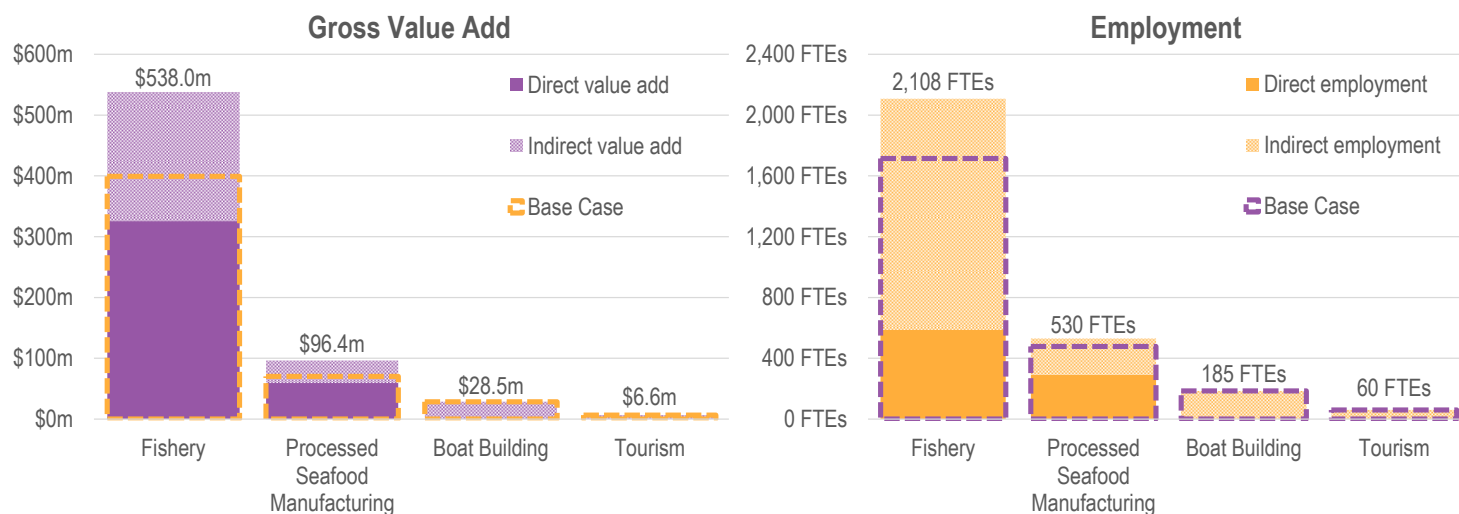


SOURCE: ACIL ALLEN CONSULTING

The impact of higher wages and profits are further represented in Figure 5.4, with the Fishery sector's Gross Value Added estimated to increase by 35 per cent (to \$538 million), and the Processed Seafood Manufacturing sector estimated to increase by 37 per cent (to \$96.4 million).

The consumption impact of higher wages and profits increases employment levels in the Fishery sector by 23 per cent to a total of 2,108 FTE jobs and in the Processed Seafood Manufacturing Industry by 11 per cent to a total of 530 FTE jobs, but does not impact on employment in any other sectors of the Industry.

**FIGURE 5.4** HIGH PRICE SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING



### 5.3 Low Export Volume Scenario

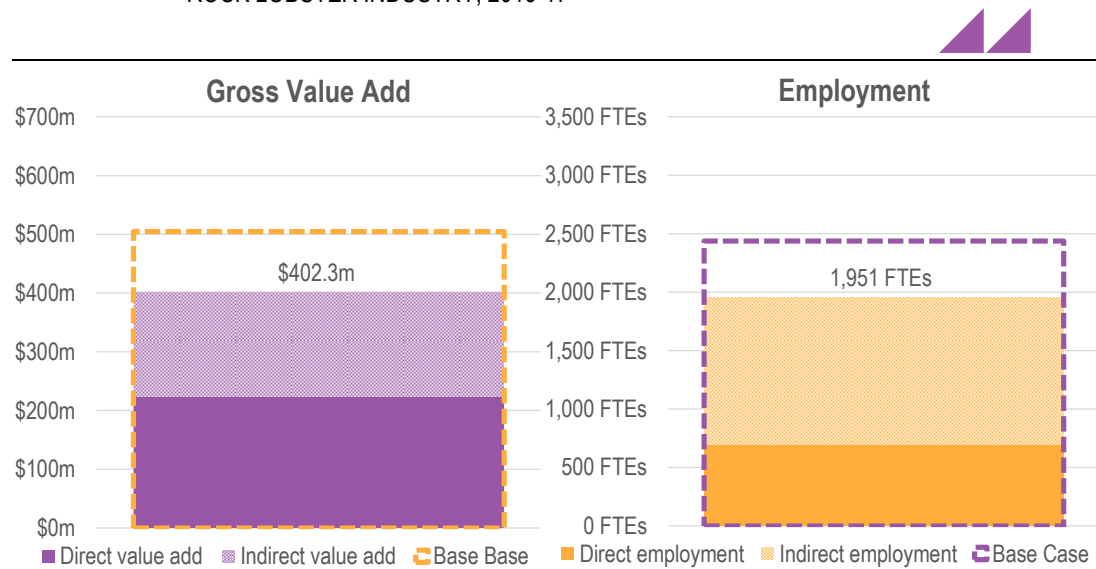
Under a low export volume scenario, the impacts will be in the form of the wages paid to employees that are tied to the quantity of Western Rock Lobsters caught and the profits generated by the Industry. Additionally, the number of boats, pots, trucks and gear required will reduce in the low quantity scenario.

*Relative to the base case, it is estimated the Industry's total output will fall by 20 per cent to \$402 million, and employment will fall by 20 per cent to 1,951 FTE jobs under a low export volume scenario*

Relative to the base case, it is estimated the **Industry's total output, in Gross Value Added terms, decreases by 20 per cent to \$402 million under a low quantity scenario** (refer to Figure 5.3). Lower wages and profits generated in the Industry primarily impacts on the broader economy through lower levels of consumption relative to the base case.

Lower levels of household consumption in turn impacts on employment, with the **Industry's total contribution to employment in WA estimated to decrease by 20 per cent to 1,951 FTE jobs**.

**FIGURE 5.5** LOW EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17



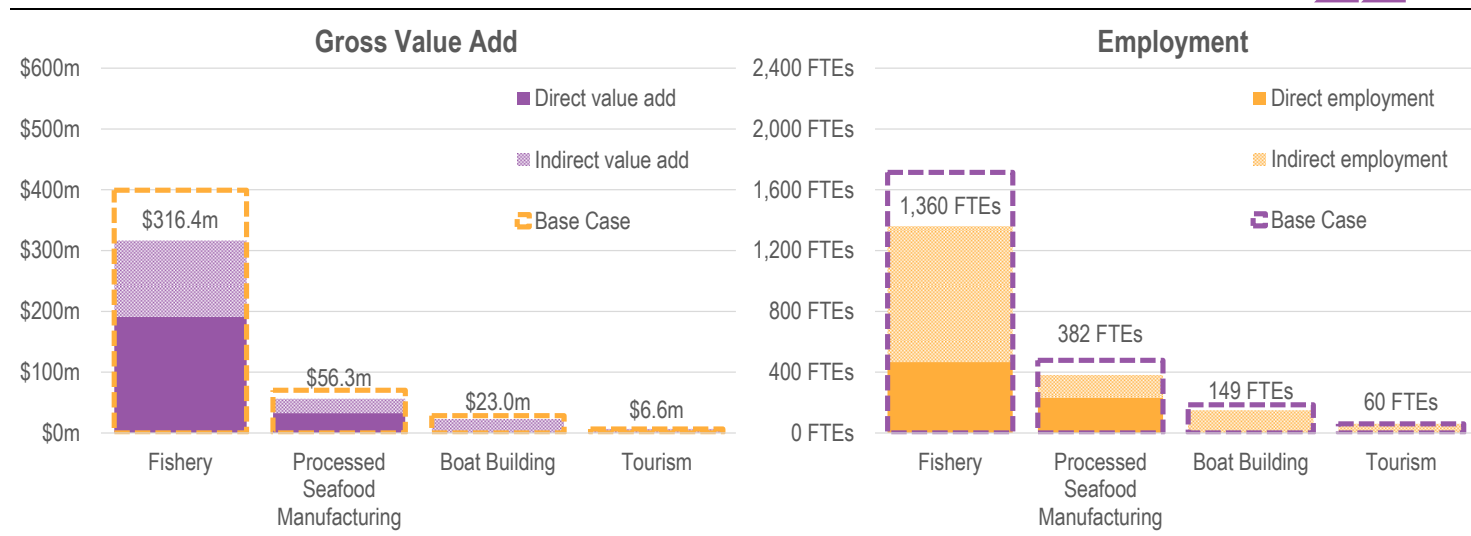
SOURCE: ACIL ALLEN CONSULTING

The impact of lower wages and profits are further represented in Figure 5.4, with the Fishery sector's Gross Value Added estimated to decrease by 21 per cent (to \$316 million), and the Processed Seafood Manufacturing sector estimated to decrease by 20 per cent (to \$56 million).

Further, due to a lower number of number of boats, pots, trucks and gear required, the Boat Building sector is also estimated to decrease by 19 per cent to \$23 million.

The consumption impact of lower wages and profits lowers employment levels in the Fishery sector by 21 per cent to a total of 1,360 FTE jobs, by 20 per cent to a total of 382 FTE jobs in the Processed Seafood Manufacturing Industry and by 19 per cent to 149 FTE jobs in the Boat Building sector.

**FIGURE 5.6** LOW EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 5.4 High Export Volume Scenario

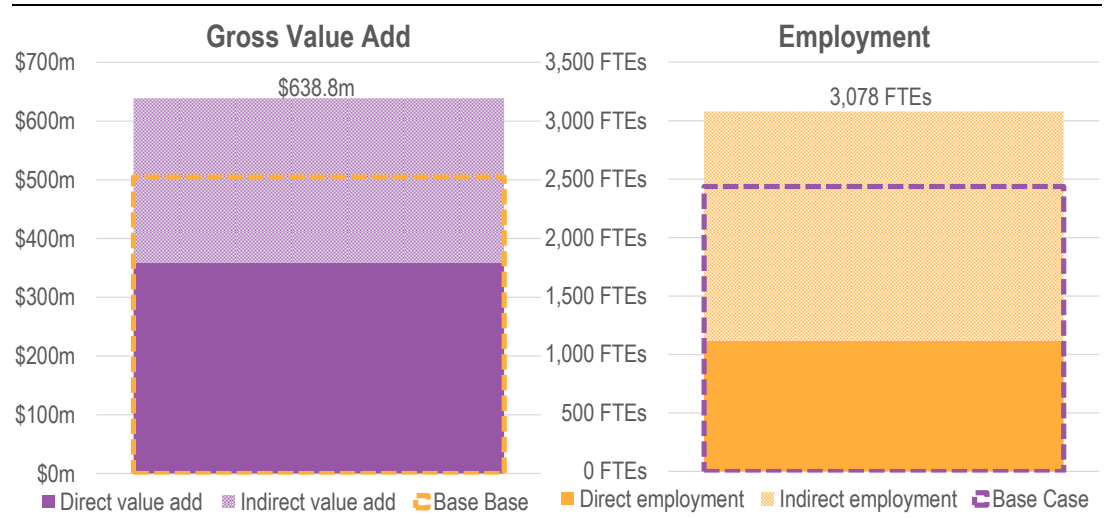
Under a high quantity scenario, the primary impact will also be in the form of the wages paid to employees that are tied to the quantity of Western Rock Lobsters caught and the profits generated by the Industry. Additionally, the number of boats, fuel, pots, trucks and gear required will increase in the high quantity scenario in order to handle the increased volume of product.

Relative to the base case, it is estimated the **Industry’s total output, in Gross Value Added terms, increases by 27 per cent to \$639 million under a high quantity scenario** (refer to Figure 5.3). Higher wages and profits generated in the Industry primarily impacts on the broader economy through higher levels of consumption relative to the base case.

Higher levels of household consumption in turn impacts on employment, with the **Industry’s total contribution to employment in WA estimated to increase by 26 per cent to 3,078 FTE jobs**.

*Relative to the base case, it is estimated the Industry’s total output will increase by 27 per cent to \$639 million, and employment will rise by 26 per cent to 3,078 FTE jobs under a high export volume scenario*

**FIGURE 5.7** HIGH EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, 2016-17



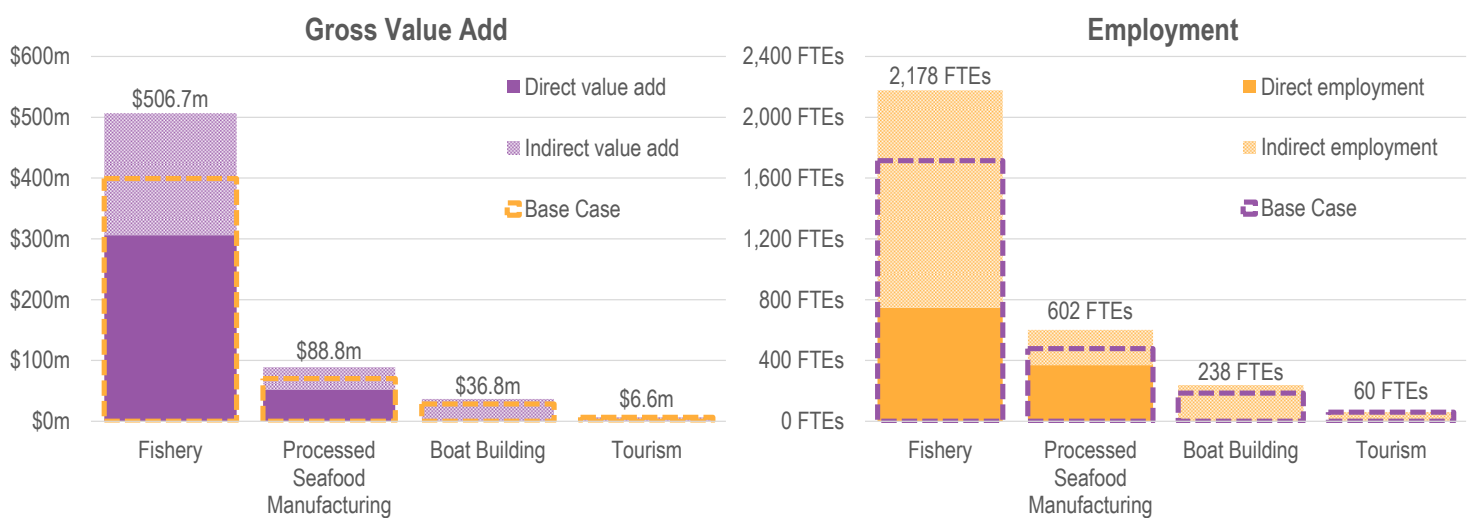
SOURCE: ACIL ALLEN CONSULTING

The impact of greater wages and profits are further represented in Figure 5.4, with the Fishery sector’s Gross Value Added estimated to increase by 27 per cent (to \$507 million), and the Processed Seafood Manufacturing sector estimated to increase by 26 per cent (to \$88.8 million).

Further, due to a higher number of boats, pots, trucks and gear required, the Boat Building sector is also estimated to increase by 29 per cent to \$36.8 million.

The consumption impact of higher wages and profits increases employment levels in the Fishery sector by 27 per cent to a total of 2,178 FTE jobs, by 26 per cent to a total of 602 FTE jobs in the Processed Seafood Manufacturing Industry and by 29 per cent to 238 FTE jobs in the Boat Building sector.

**FIGURE 5.8** HIGH EXPORT VOLUME SCENARIO, ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING



# 6

## REGIONAL AND COMMUNITY CONTRIBUTIONS

This section estimates the community and economic benefits arising from the Western Rock Lobster Industry at a regional and town level. Two major regions were developed for the purposes of this study; the Northern Zone and Southern Zone.

The economic contribution the Industry makes to WA is spread from Kalbarri in the north to Busselton in the State's south. The majority of the Industry's economic contribution is concentrated around the Perth metropolitan area, with significant economic opportunities generated in the towns between Geraldton and Lancelin (refer Figure 6.1).

### 6.1 Economic contribution of the Northern Zone

The Northern Zone delineates all towns north of Ledge Point, and includes the following towns:

- Kalbarri;
- Geraldton;
- Dongara/Port Denison;
- Leeman;
- Jurien Bay;
- Cervantes; and
- Lancelin.

Census data was used in order to obtain relevant population data in these regions, using the ABS state suburbs and the 2011 data sets. The relevant series from the 2016 Census were not released at the time of this study. Yanchep, Ledge Point, Green Head, Exmouth, Horrocks and South Carnarvon were not included in this analysis due to either limited industry activity in these towns as indicated by the Census data and/or their population was too small to extract a robust community profile from Census data.

Because participation in the Census is not 100 per cent, population figures were adjusted by applying an adjustment factor derived by comparing estimated residential population (ABS catalogue 3101) with Census results at a local government area (LGA) level. The five and 10 year average housing growths were calculated using CoreLogic data. As ACIL Allen only holds this data at an LGA level, communities that are in the same LGA show the same growth rates.

**FIGURE 6.1** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, BY LOCATION



SOURCE: ACIL ALLEN CONSULTING

**Gross Town Product** is calculated using ACIL Allen’s I-O table framework. It can be interpreted as an estimate of the total economic activity within the town. The Gross Town Product is estimated by determining share of employees in a town into each of the 114 industries ACIL Allen’s I-O modelling framework uses as a proportion of those in the LGA, and then assigning these to the known value of the industry in that area. The Industry’s economic contribution was allocated to the towns based on the number of boats by town presented in Section 2.

The results presented below are for the Northern Zone overall, and then each of the key towns (as presented above) that make up the Northern Zone.

### 6.1.1 Headline results

ACIL Allen estimates the Industry accounted for \$106 million of direct economic output across the Northern Zone in 2016-17 (refer to Figure 6.2), which is the result of the value added activities generated in the Industry across the value chain from harvesting through to export to market. This level of activity in turn generated a further \$16.2 million in indirect economic output across the Northern Zone, primarily in the form of additional spending from the Boat Building and Tourism sectors of the Industry's supply chain.

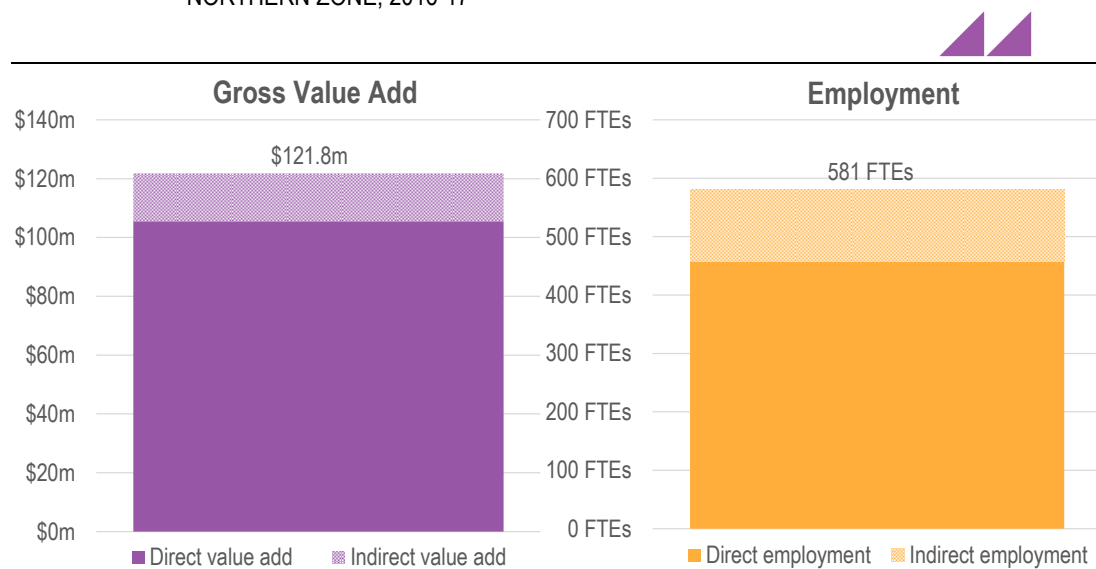
*It is estimated that the Western Rock Lobster Industry generated \$123 million in economic output and 586 FTE jobs in the Northern Zone in 2016-17*

Overall, it is estimated that the Western Rock Lobster Industry generated \$122 million in direct and indirect economic output in the Northern Zone in 2016-17. The implied Industry multiplier is 1.15, which means that for every dollar spent by the Industry in the Northern Zone, additional spending of \$0.15 is generated across the Northern Zone economy.

In terms of employment, the Industry directly accounted for 457 FTE jobs in 2016-17. A further 124 indirect FTE jobs were generated throughout the Northern Zone's economy as a result of the activities across the Industry value chain.

Overall, the Industry accounted for 581 direct and indirect FTE jobs in 2016-17. The implied Industry employment multiplier is 1.27, meaning that for every direct FTE job generated by the Industry in the Northern Zone, a further 0.27 FTE jobs are generated throughout the Northern Zone's economy.

**FIGURE 6.2** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, NORTHERN ZONE, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.1.2 Contribution by sector

The Fishery sector is the largest sector in Gross Value Added terms, accounting for 89 per cent (or \$94.1 million) of the total direct economic output generated in the Industry (refer to Figure 6.3). The Processed Seafood Manufacturing sector accounted for the majority of the remaining direct output generated by the Industry (11 per cent or \$11.4 million).

To generate this level of economic output, these sectors in turn require inputs from other sectors that are part of the Industry's overall supply chain, generating indirect value added activity in the Northern Zone. An additional \$10.4 million in indirect economic impact was generated in the Boat Building sector, \$4.5 million in the Tourism sector, \$1 million in the Fishery sector and \$300,793 in Processed Seafood Manufacturing sector.

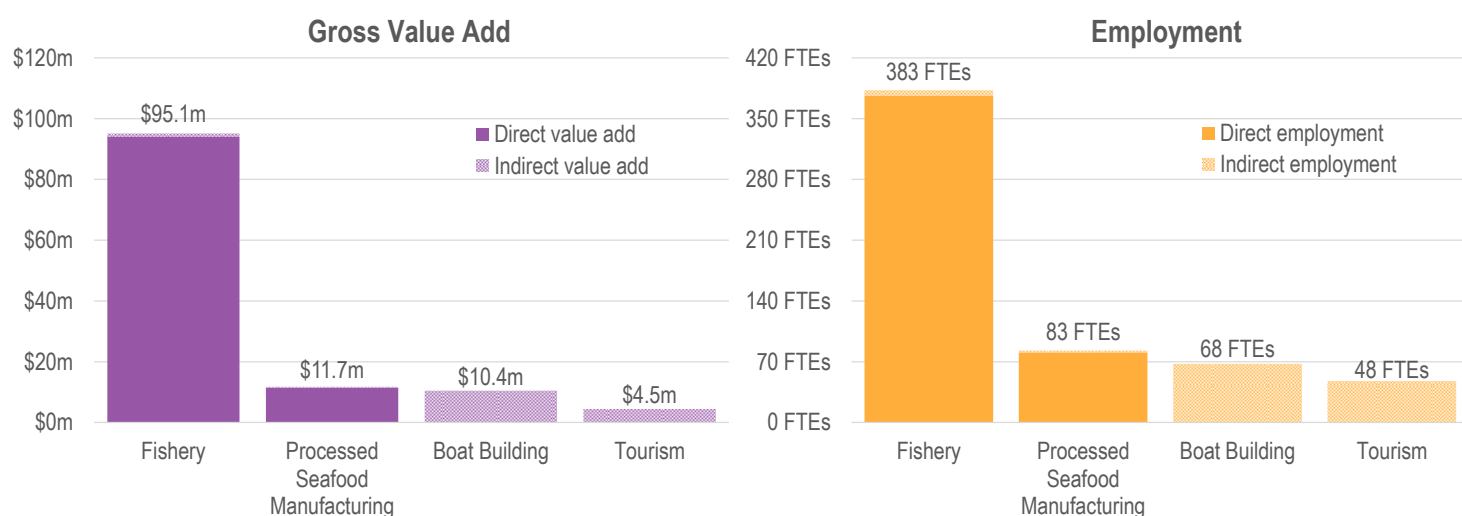
Across the Industry supply chain, the Fishery sector generated the largest direct and indirect economic impact (\$95.1 million), with significant contributions in Processed Seafood Manufacturing (\$11.7 million) and Boat Building (\$10.4 million) and Tourism (\$4.5 million) in 2016-17.

In terms of employment, the Fishery sector was the largest direct employing sector in the Industry, with 377 FTE jobs directly employed in the sector, and a further six FTE jobs indirectly employed in the Fishery sector. In total, there were 383 direct and indirect FTE jobs created throughout the Northern Zone in the Fishery sector in 2016-17.

The Processed Seafood Manufacturing sector is the second largest direct employer across the Industry supply chain, directly employing 81 FTE jobs, with a further two FTE jobs indirectly created as a result of the activities generated in the Industry. In total, there were 83 FTE jobs created across the Northern Zone in the Processed Seafood Manufacturing sector as a result of the Western Rock Lobster Industry.

The Industry also generated scores of jobs in Boat Building sector (68 FTE jobs) and Tourism sector (48 FTE jobs) in 2016-17.

**FIGURE 6.3** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, NORTHERN ZONE, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.1.3 Kalbarri

#### Regional profile

Kalbarri is situated 592 km north of Perth, at the mouth of the Murchison River. The town is both a fishing and tourist town, given its location relative to the Kalbarri National park, Hutt Lagoon and its proximity to where humpback whales migrate. The coast of Kalbarri is home to limestone reefs and headlands, and shipwrecks play a part of the town’s history. In 1942, the first permanent residents of Kalbarri built a camp in the area and with them brought the first “lobster boat”. Seven years later, after other fisherman followed suit, the town was officially gazetted as “the Mouth of the Murchison” and renamed two years later to Kalbarri<sup>1</sup>.

Whilst the Western Rock Lobster fishery has been an important part of the tapestry of Kalbarri, and that the fishery provided the impetus to generate infrastructure that has allowed the town to be self-sufficient, even if the fishery no longer sways the town’s survival<sup>1</sup>.

Kalbarri’s population has remained relatively stable over the past decade, with the estimated residential population reaching 1,645 in 2016, compared to a population of 1,628 in 2006. Over the same period, the median age has matured from 41 in 2006 to 51 in 2016. Average household sizes have shrunk from 2.3 to 2.1 persons per household, reflecting an ageing population as less households support children and young adults.

The workforce in Kalbarri in 2011 was 681 FTE’s. The median weekly personal income in the area has also remained relatively stable over the last ten years, when adjusted for CPI. The median weekly personal income was \$486 per week in 2006, relative to \$493 per week in 2016. Consistent with



trends across WA, the average house prices have contracted over the five years to 2016 (fallen by three per cent to \$312,500).

Relative to the town median income, those that identify themselves in the Census as Rock Lobster fishers have a median income of \$1,268 per week, which is 157 per cent higher than the median personal weekly income for the area, when adjusted for CPI.

Based on ACIL Allen’s I-O modelling it is estimated that Kalbarri’s gross town product was \$67 million in 2016-17.

**Economic contribution**

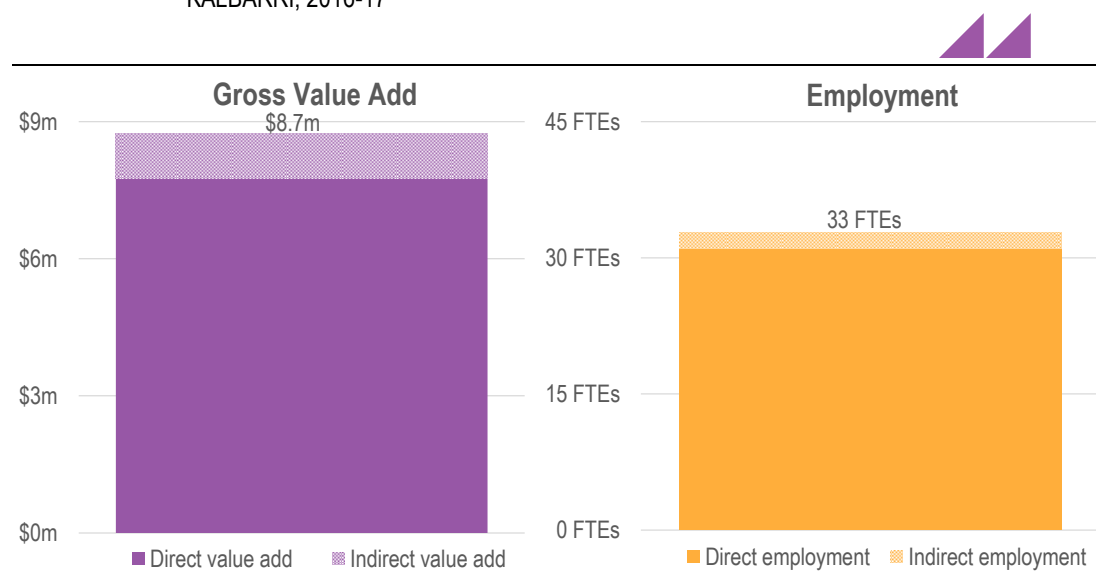
There are approximately 12 boats operating near Kalbarri (based on the assumptions presented in Section 2.1) which account for approximately five per cent of the total Western Australian Rock Lobster annual catch.

Figure 6.4 presents the economic contribution the Industry made to the Kalbarri economy in 2016-17. The Industry accounted for \$7.8 million in direct economic impact in the area, which was derived mostly from the fishery sector itself. The direct output generated indirect economic output of \$1 million to Kalbarri, implying an output multiplier of 1.13.

Based on Kalbarri’s Gross Town Product of \$65 million in 2016-17, ACIL Allen estimates that the Western Rock Lobster Industry accounted for approximately 13 per cent of the town’s economy in 2016-17.

In employment terms the Industry accounted for 31 direct FTE jobs in 2016-17. All activities across the Industry’s value chain in area accounted for the creation of two indirect FTE job, for a total of 33 FTE jobs in 2016-17, implying an employment multiplier of 1.06 in the area. It is estimated that the Industry accounted for 4.8 per cent of the jobs in the town in 2016-17.

**FIGURE 6.4** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN KALBARRI, 2016-17



SOURCE: ACIL ALLEN CONSULTING



## 6.1.4 Geraldton

### Regional profile

Geraldton is a coastal city, located 424 km north of Perth. The city serves as a regional service area for the surrounding farming and fishing industries. The mining industry has also played an increasingly important role in Geraldton, and is now one of the largest value adding sectors in the City<sup>9</sup>. As a result of being a regional service area, the city is host to a wide array of support industries. The city also serves as the gateway to the popular Abrolhos Islands – a 122 island archipelago located 70km west of the city.

Geraldton has its roots outside of the Lobster fishing industry, with its initial visitation as early as 1839. The discovery of a form of lead ore in the vicinity, as well as a guano harvesting in nearby Shark Bay rendered the Geraldton's early roots as a military guard outpost<sup>1</sup>. Shortly thereafter convicts arrived in 1857, and amongst them were fishers, fishmongers, shipwrights and sail makers. Five decades later, in the early 1900s the fishing industry was established<sup>1</sup>, with immigrants from Scandinavia and Italy dominating the industry and exploring the Abrolhos islands.

It was as early as 1904 that the that the Abrolhos was seen as a potential commercial crayfish site, and strong demand from the United States post WWII, in conjunction with the development of canning of lobster caused the industry to flourish<sup>1</sup>.

It was animosity among fishers based in Geraldton and Fremantle overfishing stock at the Abrolhos Islands that rendered the establishment of the first fishery zones in 1948, which required catch there to be brought ashore in Geraldton alive, and processing facilities were subsequently opened in Geraldton. In 1951, the fishers of Geraldton formed the Geraldton Fisherman's Cooperative<sup>1</sup>.

Rapid expansion of both the fishery, other fishing industries, and the expansion of other industries in the Mid-West region were boosts to Geraldton's growth to City status<sup>1</sup>.

Geraldton has experienced population growth of 73.3 per cent over ten years to 2016. Over the same period, the median age of the community has risen by three years from 35 to 38 years of age. The average household sizes have increased slightly since 2006, from 2.4 to 2.5.

The workforce in Geraldton is 1,625 FTE according to the 2011 census. The median weekly personal income has risen over the last ten years from \$408 per week to \$493 per week. Consistent with trends across WA, the average house prices have remained stable contracted over the five years to 2016 (at an average of \$316,000).

Relative to the town median income, those that identify in the census as Rock Lobster fishers have a median income of \$1,764 per week. This translates to 157 per cent higher than the median personal weekly income for the area, when adjusted for CPI.

### Economic contribution

There are approximately 52 boats operating near Geraldton (based on the assumptions presented in Section 2.1) accounting for approximately 23 per cent of the total Western Australian Rock Lobster annual catch. There is value added in Geraldton as a result of processing operation and the fishery sector.

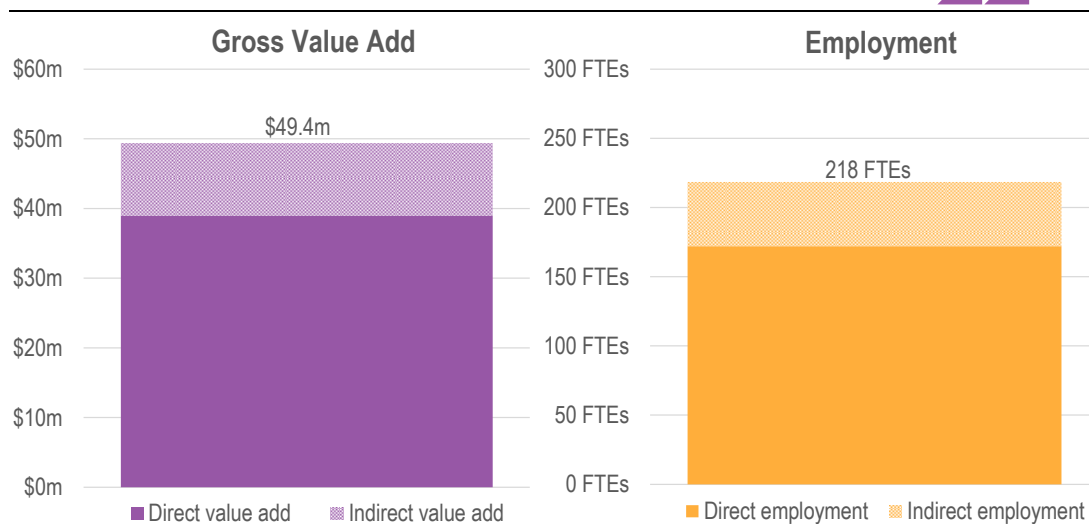
Figure 6.5 presents the economic contribution the Industry made to the Geraldton economy in 2016-17. The Industry accounted for \$39 million in direct economic impact in the area, which was derived mostly from the fishery sector itself and the processing sector. The direct output generated indirect economic output of \$10.4 million to Geraldton, implying an output multiplier of 1.27.

It is estimated that Geraldton's Gross Town Product was \$207 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 24 per cent of the town's economy in 2016-17.

In employment terms the industry accounted for 172 direct FTE jobs in 2016-17. All activities across the Industry's value chain in area accounted for the creation of 46 indirect FTE job, for a total of 218 FTE jobs in 2016-17, implying an employment multiplier of 1.27 in the area. It is estimated that the Industry accounted for 13 per cent of the jobs in the town in 2016-17.



**FIGURE 6.5** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN GERALDTON, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.1.5 Dongara/Port Denison

#### Regional profile

Dongara and Port Denison are neighbouring towns situated near the mouth of the Irwin River. The towns are located four km apart, 351 km north of Perth. The towns are considered to be both a tourism location and a rock lobster fishing location. The towns of Port Denison and Dongara are home to a dangerous off-shore reefs, which in its early settlement hindered the town’s growth. Originally the towns have a history as service towns until Geraldton transitioned into this space, at which point Dongara and Port Denison became a summer holiday camp with recreational fishing. In the late 1950’s, a crayfishing business was established in town and shortly thereafter Dongara became a permanent base for the crayfishing community.

The population of Dongara and Port Denison has remained relatively stable, with a population of 2,926 people in 2006 as compared to 2,947 in 2016. In alignment with other Western Rock Lobster oriented communities, the median age in Dongara and Port Denison has been maturing, from a median age of 42 in 2006 to a median age of 50 in 2016. Average household sizes have been declining; in 2016 there were 2.2 people per household.

The median weekly personal income rose in the period 2006 to 2011, however has declined in the five years since. In 2016, the median weekly personal income was \$487 per week. Dongara and Port Denison have a combined workforce of 1,659 FTE. Consistent with trends across WA, the average house prices have contracted in the five years to 2016 (fallen by 12 per cent to \$300,000).

Relative to the town median income, those that identify themselves in the Census as Rock Lobster fishers have a median income of \$1,386 per week, which is 166 per cent higher than the median weekly personal income for the two towns.

#### Economic contribution

There are approximately 12 boats operating near Dongara and Port Denison which (based on the assumptions presented in Section 2.1) accounting for approximately five per cent of the total Western Australian Rock Lobster annual catch.

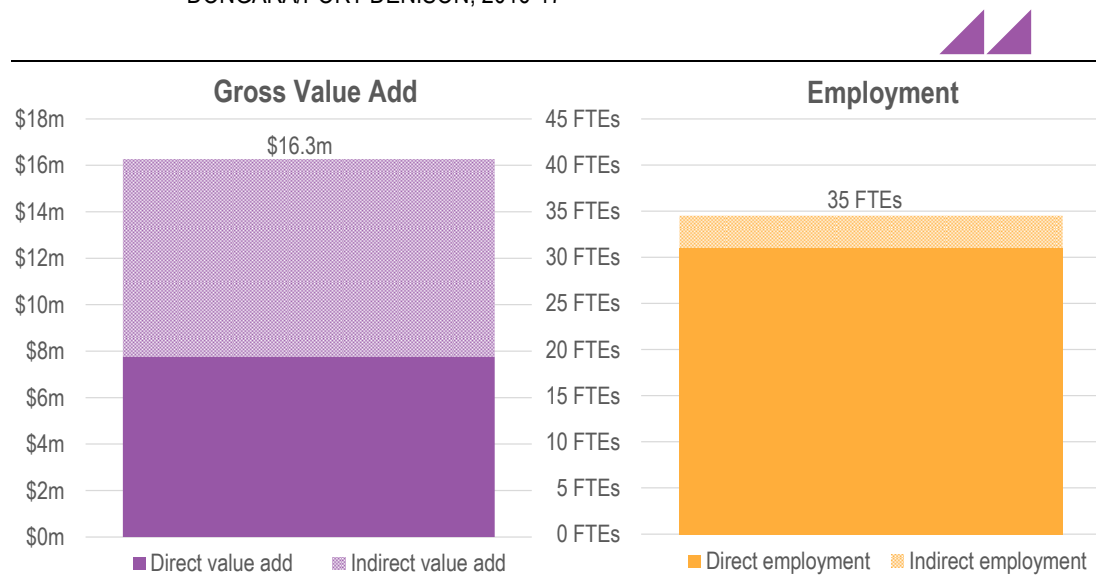
Figure 6.2 presents the economic contribution the Industry made to the combined Port Denison and Dongara economy in 2016-17. The Industry accounted for \$7.8 million in direct economic impact in the area, which was derived mostly from the fishery sector itself and the boat building sector. The direct output generated indirect economic output of \$8.5 million, implying an output multiplier of 2.1.



It is estimated that Port Denison and Dongara’s Gross Town Product was \$116 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 14 per cent of the town’s economy in 2016-17.

In employment terms, the Industry accounted for 31 direct FTE jobs in 2016-17. All activities across the Industry’s value chain in area accounted for the creation of four indirect FTE jobs, for a total of 35 FTE jobs in 2016-17, implying an employment multiplier of 1.11 in the area. It is estimated that the Industry accounted for 2.1 per cent of the jobs in the town in 2016-17.

**FIGURE 6.6** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN DONGARA/PORT DENISON, 2016-17



SOURCE: ACIL ALLEN CONSULTING

**6.1.6 Leeman**

**Regional profile**

Leeman is located on the coast 260km north of Perth. The population of Leeman has fallen over the last ten years, from 419 to 375 between 2006 and 2011, and further to 372 people in 2016. The population of Leeman has been ageing, and the median age in 2006 was 39 as compared to 52 in 2016; a rise of 13 years over a ten year period.

Leeman has its roots as a holiday destination for farmers in the region to escape the summer heat, post-harvest. Initially the town was a camp site, however as time progressed temporary shacks were built in the area<sup>1</sup>. The intensification of construction in the area is attributed to the Western Rock Lobster Industry, and in 1957 fishers from Rockingham sought safe anchorage further up the coast<sup>1</sup>. Permanent structures are thought to have been built as early as 1958, and the town was gazetted by another name – Snag Island – in 1962 prior to a name change to Leeman in 1971. Other industries, such as the mineral sands industry in the 1970s, developed the town further<sup>1</sup>.

Leeman remains a popular tourist destination with domestic visitors, due to the large local sea lion population, the nearby freshwater lake that is suitable for a variety of water sports and caving in the nearby Stockyard Gully National Park that supports an underwater river system<sup>11</sup>.

Leeman has a workforce of 241 FTE as at 2011. The median weekly personal incomes have, over a ten year period, been contracting. In 2006, real median weekly incomes were at \$458 per week, and have since fallen 13.3 per cent to \$404 per week in 2016.

Consistent with trends across WA, the average house prices have contracted over the five years to 2016 (fallen by 12 per cent to \$295,000).

Relative to the town median income, those that identify in the Census as Rock Lobster fishers have a median income of \$1,386 per week, which is 243 per cent higher than the median personal weekly



income for the area of \$404 per week. Direct employment, as indicated by the 2016 Australian Census, is 17 fishermen in the town.

**Economic contribution**

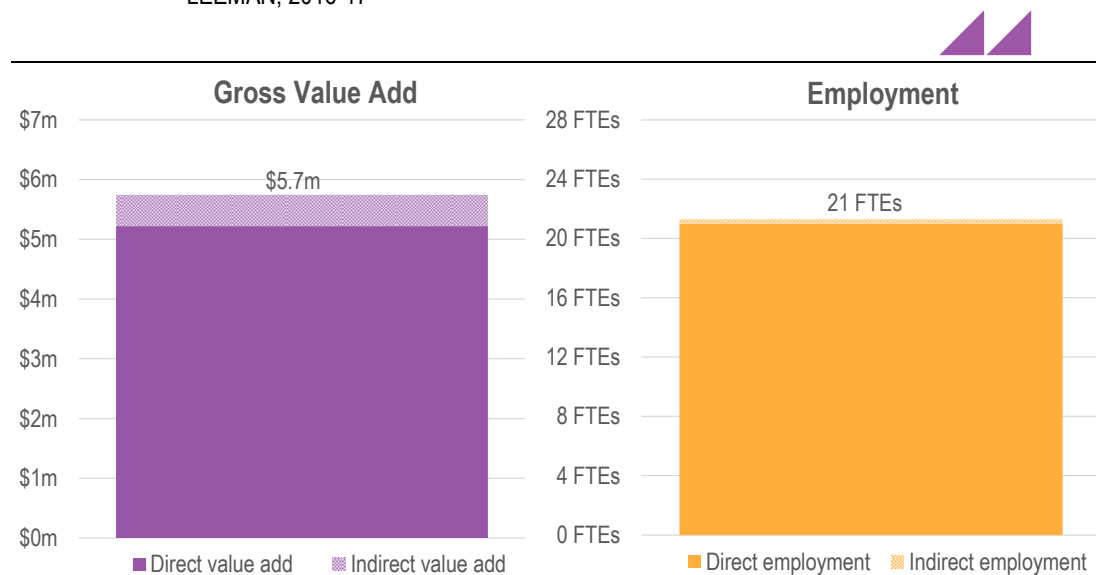
There are approximately eight boats operating near Leeman which (based on the assumptions presented in Section 2.1) account for approximately 3.5 per cent of the total Western Australian Rock Lobster annual catch.

Figure 6.7 presents the economic contribution the Industry made to the Leeman economy in 2016-17. The Industry accounted for \$5.2 million in direct economic impact in the area, which was derived mostly from the fishery sector itself. The direct output generated indirect economic output of \$523,716 to Leeman, implying an output multiplier of 1.1.

It is estimated that Leeman’s Gross Town Product was \$25.2 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 23 per cent of the town’s economy in 2016-17.

In employment terms, the Industry accounted for 21 direct FTE jobs in 2016-17. All activities across the Industry’s value chain in area accounted for the creation of less than one indirect FTE jobs, for a total of 21 FTE jobs in 2016-17, implying an employment multiplier of 1.01 in the area. It is estimated that the Industry accounted for 8.7 per cent of the jobs in the town in 2016-17.

**FIGURE 6.7** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN LEEMAN, 2016-17



SOURCE: ACIL ALLEN CONSULTING

## 6.1.7 Jurien Bay

### Regional profile

Jurien Bay is located 220km north of Perth, along Indian Ocean Drive. To the east of Jurien Bay is Leseur National Park, and to the west is Jurien Bay Marine Park. The destination is a popular holiday location, and anecdotally the population of the town swells to nearly double during the holiday season.

Jurien Bay is so called because of the 9km long bay on which it sits, which is sheltered by a string of reef and small islands. The initial settlement of the town, in 1850, was as the result of land purchase and development by one family in the area<sup>1</sup>. A jetty in 1885 allowed for direct export of wool produced in the area. Holiday houses were constructed, as were tents and makeshift shelters, to cater for the rising number of amateur fishers and holiday makers visiting the area in the 1940's and 1950's.

Rock Lobster as a commercial industry emerged in Jurien Bay in the 1950's as a result of a developing export market. The town site was gazetted in 1956, and fishing became an important part of the town's infrastructure<sup>1</sup>.

The population of Jurien Bay has been steadily increasing over the last ten years, and this is a trend matched by the median age of the population. In 2006, the population was 1,420 and the median age 41. By 2016, the population had increased by 31 per cent to 1,860 people and the median age to 48. Average household size rose slightly to 2.4 in the five years to 2011, falling to 2.2 in the following five years to 2016. Consistent with trends across WA, the average house prices have contracted over the five years to 2016 (by 14 per cent to \$342,500).

The median weekly personal income was \$572 per week in 2011, relative to \$550 per week in 2016. Relative to the town median income, those that identify in the census as Rock Lobster fishers have a median income of \$1,512 per week, which is 174 per cent higher than the median personal weekly income for the area, when adjusted for CPI.

### Economic contribution

There are approximately 21 boats operating near Jurien Bay which (based on the assumptions presented in Section 2.1) account for approximately nine per cent of the total Western Australian Rock Lobster annual catch.

Both Jurien Bay and Cervantes lie within the LGA of Coorow. The economic modelling of Jurien Bay has been modelled in conjunction with Cervantes as a proportion of the entire LGA. The economic contribution of Jurien Bay is then apportioned according to the activity in the town on a sector level – in this instance mostly from the fishery industry itself – relative to Cervantes.

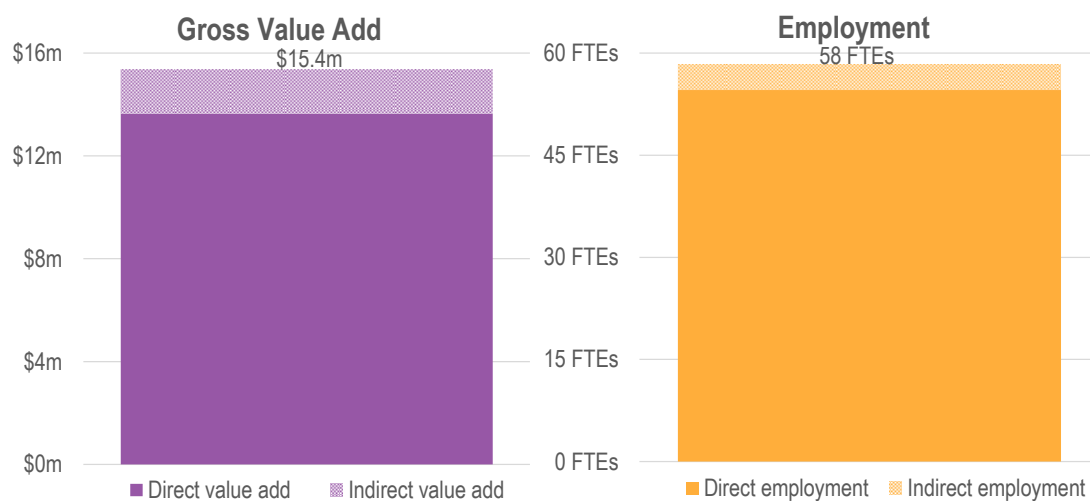
Figure 6.8 presents the economic contribution the Industry made to the Jurien Bay economy in 2016-17. The Industry accounted for \$13.6 million in direct economic impact in the area, which was derived mostly from the fishery sector itself. The direct output generated indirect economic output of \$1.7 million to Jurien Bay, implying an output multiplier of 1.13.

It is estimated that Jurien Bay's Gross Town Product was \$98.7 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 15.6 per cent of the town's economy in 2016-17.

In employment terms the Industry accounted for 55 direct FTE jobs in 2016-17. All activities across the Industry's value chain in area accounted for the creation of four indirect FTE jobs, for a total of 58 FTE<sup>c</sup> jobs in 2016-17, implying an employment multiplier of 1.07 in the area. It is estimated that the Industry accounted for nine per cent of the jobs in the town in 2016-17.

<sup>c</sup> Subject to rounding error



**FIGURE 6.8** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN JURIEAN BAY, 2016-17

SOURCE: ACIL ALLEN CONSULTING

### 6.1.8 Cervantes

#### Regional profile

Cervantes is located 198 km north of Perth. The town is home to both lobster fishing and tourism, and benefits from close proximity to the Pinnacles and Nambung National park. Lake Thetis, a unique saline coastal lake, is also located in the vicinity.

Cervantes is relatively isolated, but owes its development to the Rock Lobster Industry in the late 1940s and 1950s, which resulted in the fishery's expansion to more remote waters<sup>1</sup>. Shore based facilities developed slightly later than other towns in the region, with the first facilities developed in the 1960's – despite lack of road infrastructure and water supply. Three jetties were built in the town, all three due to processors, lobster traders and the Fremantle Fisherman's Co-op<sup>1</sup>. Cervantes was gazetted as a town in 1963. The town is close to Nambung National Park, the Pinnacles and interest in tourism in the town emerged in the late 1970's<sup>1</sup>.

The population of Cervantes has remained relatively stable over the past ten years, experiencing a slight decline between 2006 and 2011, and a slight increase to 557 in the 2011 to 2016 period. The median age over the ten year period also initially rose, from 47 to 51. In the latest Census, the median age of the population remained at 51. Average household sizes have similarly experienced a slight decline, reflecting the ageing population across the State. In the 2006 to 2011 period, the average household size declined from 2.3 to 2.1, and has remained stable over the five years to 2016. Consistent with trends across WA, average house prices have contracted over the five years to 2016 (fallen by 14 per cent to 342,500).

There are 199 FTE workers in Cervantes. The median weekly personal income in the area has also remained relatively stable over the last ten years, when adjusted for CPI. The median weekly personal income was \$442 per week in 2011, relative to \$531 per week in 2016. Relative to the town median income, those that identify in the Census as Rock Lobster fishers have a median income of \$1,386 per week, which is 213 per cent higher than the median personal weekly income for the area.

#### Economic contribution

There are approximately 19 boats operating near Cervantes which (based on the assumptions presented in Section 2.1) account for approximately four per cent of the total Western Australian Rock Lobster annual catch.



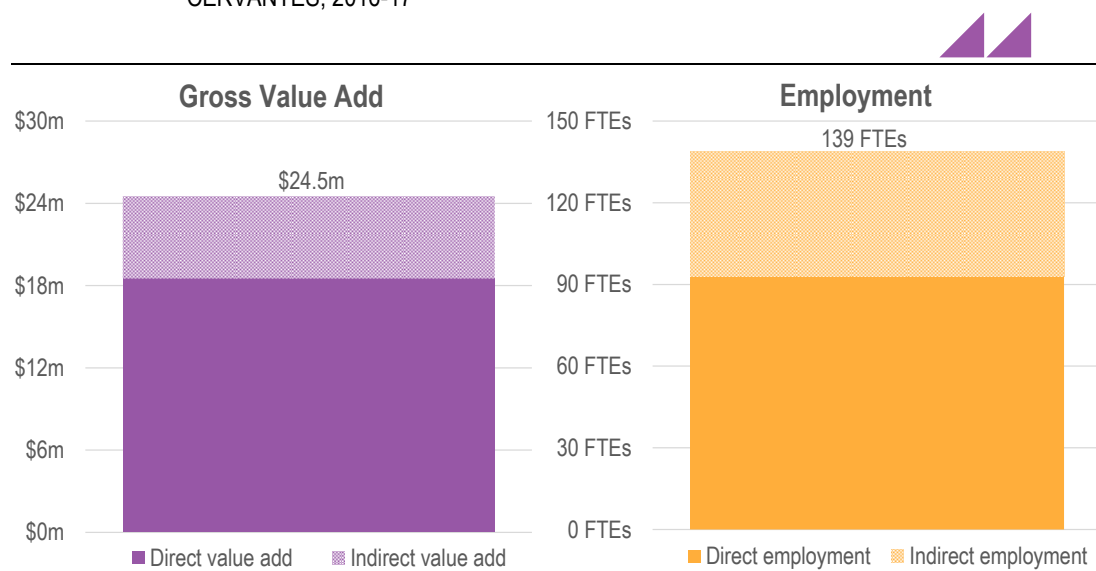
Both Jurien Bay and Cervantes lie within the LGA of Coorow. The economic modelling of Cervantes has been modelled in conjunction with Jurien Bay as a proportion of the entire LGA. The economic contribution of Cervantes is then apportioned according to the activity in the town on a sector level – in this instance mostly from the fishery industry itself, tourism and processed seafood manufacturing – relative to Jurien Bay.

Figure 6.9 presents the economic contribution the Industry made to the Cervantes economy in 2016-17. The Industry accounted for \$18.5 million in direct economic impact in the area, which was derived mostly from the fishery sector itself, and the surrounding tourism sector. The direct output generated indirect economic output of \$6 million to Cervantes, implying an output multiplier of 1.28.

It is estimated that Cervantes gross town product was \$32.5 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 75 per cent of the town’s economy in 2016-17.

In employment terms the Industry accounted for 93 direct FTE jobs in 2016-17. All activities across the Industry’s value chain in area accounted for the creation of 46 indirect FTE job, for a total of 139 FTE jobs in 2016-17, implying an employment multiplier of 1.49 in the area. It is estimated that the Industry accounted for 70 per cent of the jobs in the town in 2016-17.

**FIGURE 6.9** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN CERVANTES, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.1.9 Lancelin

#### Regional profile

Lancelin is situated 127km north of Perth and within the shire of Gingin, a few kilometres from the start of the Indian Ocean Drive. In its 67 year history, Lancelin has been impacted by the consolidation of the Western Rock Lobster Industry. Today the town is a seasonal tourist community – with access to pristine dunes and water sports – as well as continuing to be a Western Rock Lobster fishing town.

Lancelin’s early story is one of tourism, where the town was initially a holiday destination for nearby farming communities. Lancelin Island was used as a bombing range during World War II, for training purposes and at this time there were no permanent homes in the area<sup>1</sup>. Professional lobster fishing in the area in 1947 attracted permanent residents and surrounding services. In its early days, fishers found that it was more efficient to ferry product to Fremantle every few days, as opposed to across land<sup>1</sup>.

Initially, fishers in Lancelin lived on their boats when they fished for rock lobsters, but as more trips to shore occurred so too did the development of onshore huts. The town was officially gazetted in 1950,



and as fishers wives and families arrived, the town developed into a thriving community<sup>1</sup>. The leisurely lifestyle and proximity to the coast attracted a number of permanent residents in subsequent years.

The Lancelin community has been slowly growing over the last ten years, with a 2016 census population of 726 people, with the annual average rate of growth of 0.9 per cent. Lancelin has an ageing population – rising from a median age of 43 in 2006 to 50 in 2016 – and a slightly smaller average household size of 2.1 people per household (relative to 2.2 in 2006). House prices in Lancelin have remained stable over the five years to 2016, with an average house price of \$399,500.

Lancelin has a workforce of 288 FTE employees as at 2011. The median weekly personal income in the area has also remained relatively stable over the last ten years, when adjusted for CPI. The median weekly personal income was \$511 per week in 2011, relative to \$603 per week in 2016.

Relative to the town median income, those that identify in the census as Rock Lobster fishers have a median income of \$1,134 per week, which is 220 per cent higher than the median personal weekly income for the area.

**Economic contribution**

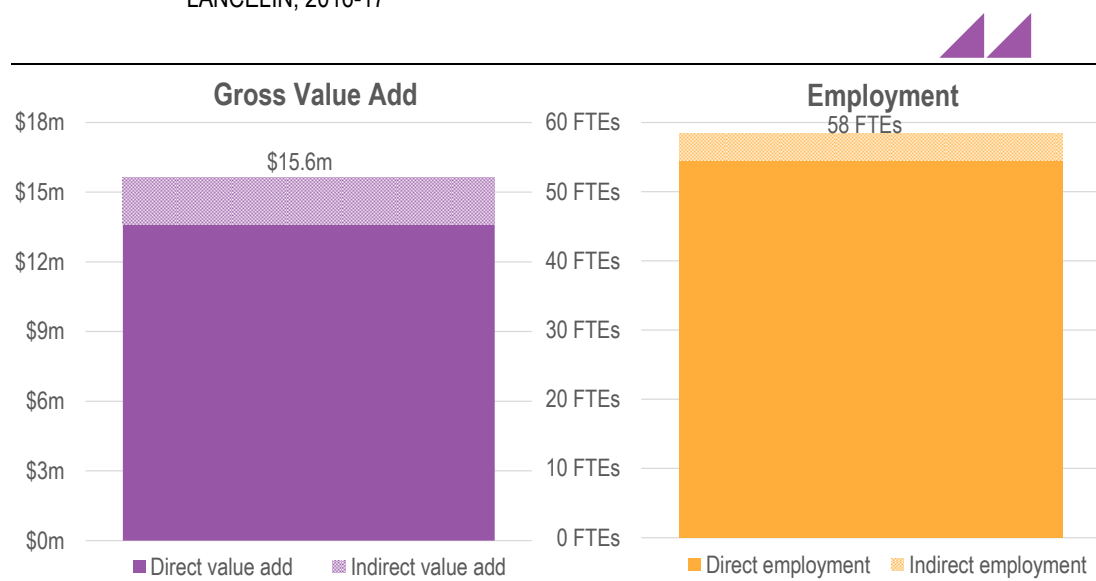
There are approximately 21 boats operating near Lancelin which (based on the assumptions presented in Section 2.1) account for approximately nine per cent of the total Western Australian Rock Lobster annual catch.

Figure 6.10 presents the economic contribution the Industry made to the Lancelin economy in 2016-17. The Industry accounted for \$13.6 million in direct economic impact in the area, which was derived mostly from the fishery sector itself, and the surrounding tourism sector. The direct output generated indirect economic output of \$2 million to Lancelin, implying an output multiplier of 1.15.

It is estimated that Lancelin’s Gross Town Product was \$48.7 million in 2016-17, with ACIL Allen estimating that the Western Rock Lobster Industry accounted for approximately 32 per cent of the town’s economy in 2016-17.

In employment terms the Industry accounted for 55 direct FTE jobs in 2016-17. All activities across the Industry’s value chain in area accounted for the creation of four indirect FTE jobs, for a total of 58 FTE<sup>d</sup> jobs in 2016-17, implying an employment multiplier of 1.07 in the area. It is estimated that the Industry accounted for 20 per cent of the jobs in the town in 2016-17.

**FIGURE 6.10** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN LANCELIN, 2016-17



SOURCE: ACIL ALLEN CONSULTING

<sup>d</sup> Subject to rounding error.



## 6.2 Economic contribution of the Southern Zone

The Southern Zone delineates all towns further south than, and inclusive of, Two Rocks. The Southern Zone is further split into the South West and Perth regions for the purposes of this study, due to the difficulties in assigning a place of residence for fishers in the Perth Metropolitan region and South West zones, and therefore estimating the subsequent economic impact.

### 6.2.1 Headline results

ACIL Allen estimates the Industry accounted for \$176 million of direct economic output across the Southern Zone in 2016-17 (refer to Figure 6.11), which is the result of the value added activities generated in the Industry across the value chain from harvesting through to export to market. This level of activity in turn generated a further \$133 million in indirect economic output across the Southern Zone, primarily in the form of additional consumption spending from wage and salary earners in the Industry.

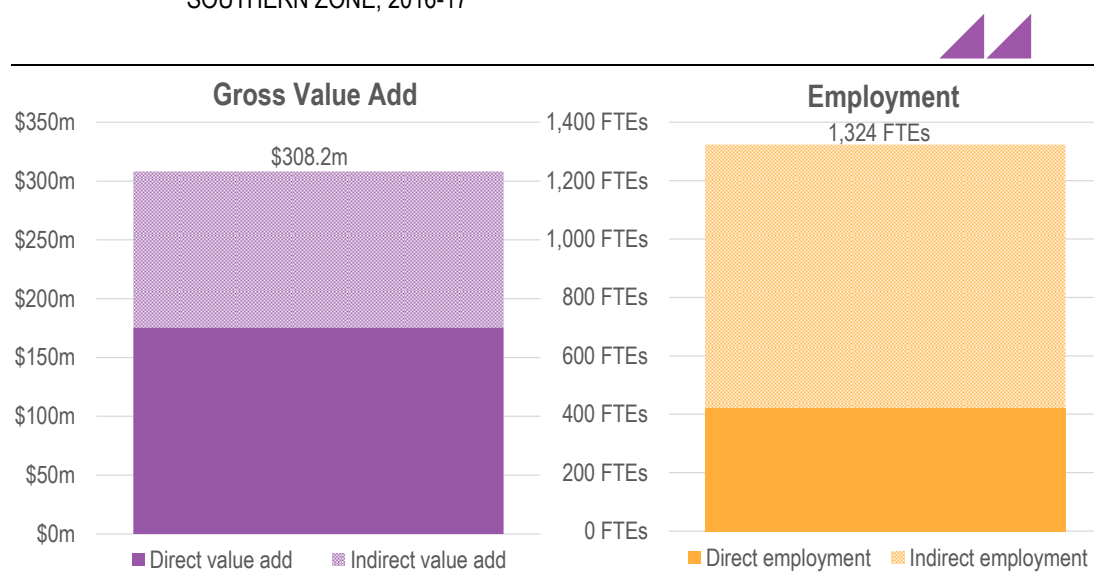
Overall, it is estimated that the Western Rock Lobster Industry generated \$308 million in direct and indirect economic output in the Southern Zone in 2016-17. The implied Industry multiplier is 1.76, which means that for every dollar spent by the Industry in the Southern Zone, additional spending of \$0.76 is generated across the Southern Zone economy.

In terms of employment, the Industry directly accounted for 421 FTE jobs in 2016-17. A further 903 indirect FTE jobs were generated throughout the Southern Zone's economy as a result of the activities across the Industry value chain.

Overall, the Industry accounted for 1,324 direct and indirect FTE jobs in 2016-17. The implied Industry employment multiplier is 3.14, meaning that for every direct FTE job generated by the Industry in the Southern Zone, a further 2.14 FTE jobs are generated throughout the Southern Zone's economy.

*It is estimated that the Western Rock Lobster Industry generated \$306 million in economic output and 1,313 FTE jobs in the Southern Zone in 2016-17*

**FIGURE 6.11** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, SOUTHERN ZONE, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.2.2 Contribution by sector

The Fishery sector is the largest sector in Gross Value Added terms, accounting for 83 per cent (or \$145 million) of the total direct economic output generated in the Industry (refer to Figure 6.12). The Processed Seafood Manufacturing sector accounted for the majority of the remaining direct output generated by the Industry (17 per cent or \$29.8 million).

To generate this level of economic output, these sectors in turn require inputs from other sectors that are part of the Industry's overall supply chain, generating indirect value added activity in the Southern

Zone. An additional \$97.3 million in indirect economic impact was generated in the Fishery sector, \$21.7 million in Processed Seafood Manufacturing and \$13.7 million in Boat Building.

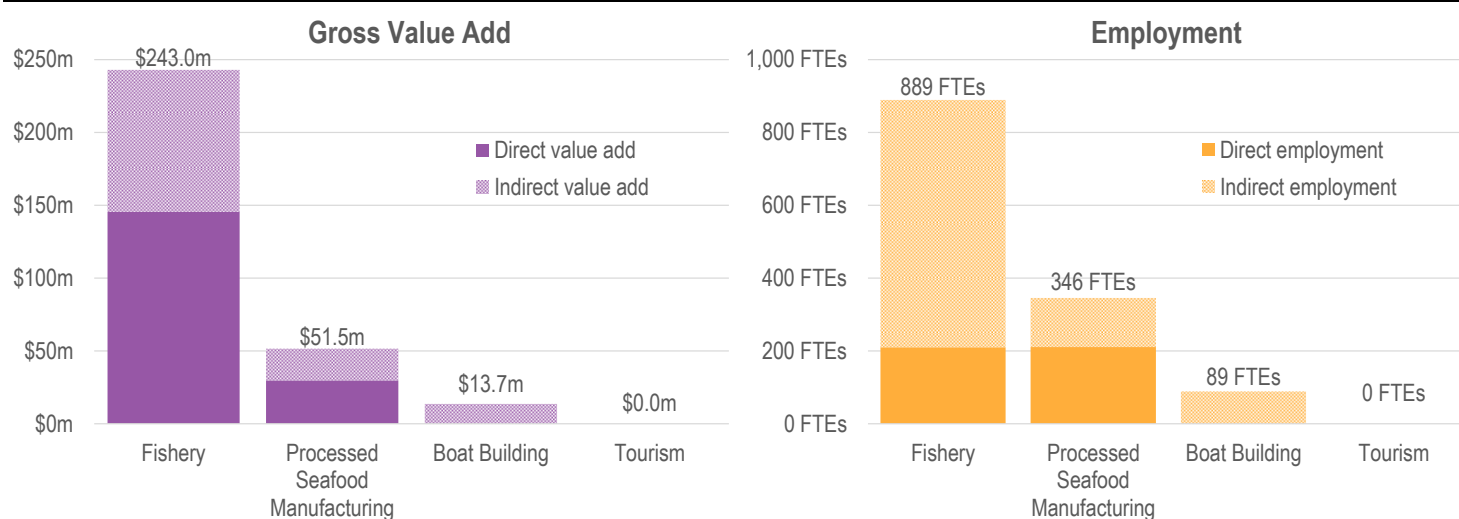
Across the Industry supply chain, the Fishery sector generated the largest direct and indirect economic impact (\$243 million), with significant contributions in Processed Seafood Manufacturing (\$52 million) and Boat Building (\$13.7 million) in 2016-17.

In terms of employment, the Fishery sector was the largest direct employing sector in the Industry, with 211 FTE jobs directly employed in the sector, and a further 679 FTE jobs indirectly employed in the Fishery sector. In total, there were 809 direct and indirect FTE jobs created throughout the Southern Zone in the Fishery sector in 2016-17.

The Processed Seafood Manufacturing sector is the second largest direct employer across the Industry supply chain, directly employing 211 FTE jobs, with a further 135 FTE jobs indirectly created as a result of the activities generated in the Industry. In total, there were 346 FTE jobs created across the Southern Zone in the Processed Seafood Manufacturing sector as a result of the Western Rock Lobster Industry.

The Industry also generated scores of jobs in Boat Building sector (89 FTE jobs) in 2016-17.

**FIGURE 6.12** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY, SOUTHERN ZONE, BY SECTOR, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.2.3 Perth

#### Economic contribution

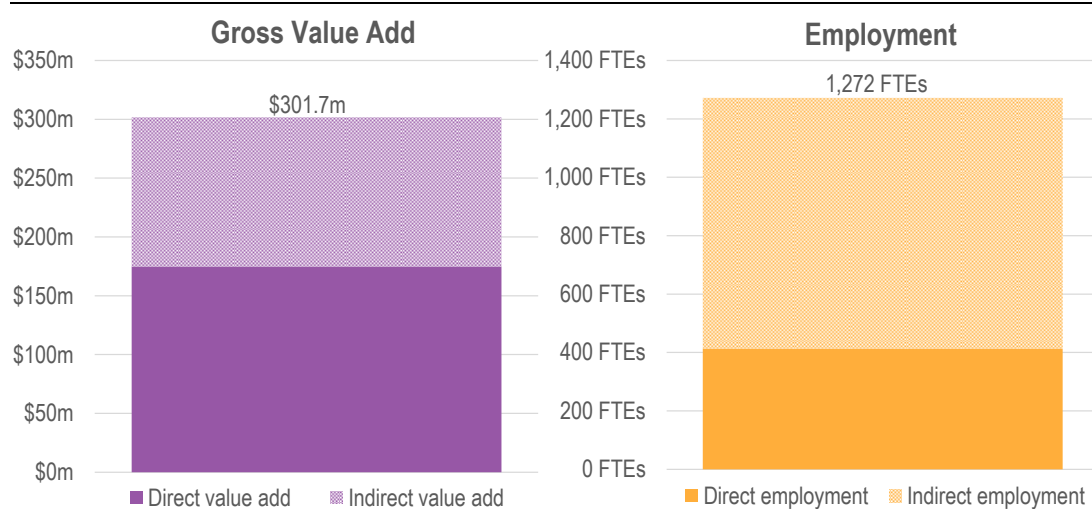
There are approximately 78 boats operating near the Perth region, which in this instance is inclusive of Two Rocks to Mandurah (based on the assumptions presented in Section 2.1). These boats account for approximately 36 per cent of the total Western Australian Rock Lobster annual catch. There is value added in Perth as a result of the direct fishery sector, processing and boat building.

Figure 6.4 presents the economic contribution the Industry made to the Perth economy in 2016-17. The Industry accounted for \$175 million in direct economic impact in the area, which was derived mostly from the fishery sector itself with processed seafood manufacturing and boat building contributing to the overall impact as well. The direct output generated indirect economic output of \$127 million to Perth, implying an output multiplier of 1.73.

In employment terms the Industry accounted for 414 direct FTE jobs in 2016-17. All activities across the Industry's value chain in area accounted for the creation of 858 indirect FTE job, for a total of 1,272 FTE jobs in 2016-17, implying an employment multiplier of 3.07 in the area.



**FIGURE 6.13** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN PERTH, 2016-17



SOURCE: ACIL ALLEN CONSULTING

### 6.2.4 South West

#### Economic contribution

There are approximately three boats operating near the South West, which is inclusive of Busselton and Bunbury in this instance (based on the assumptions presented in Section 2.1). These account for approximately one per cent of the total Western Australian Rock Lobster annual catch. There is value added in the South West as a result of the direct fishery sector.

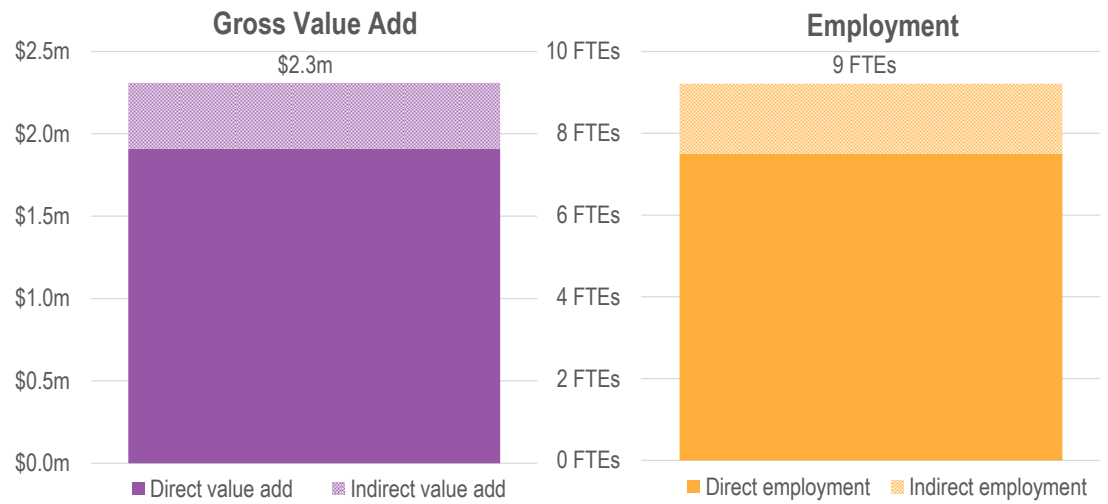
Figure 6.14 presents the economic contribution the Industry made to the South West economy in 2016-17. The Industry accounted for \$1.9 million in direct economic impact in the area, which was derived mostly from the fishery sector itself. The direct output generated indirect economic output of \$400,451 to the South West, implying an output multiplier of 1.21.

In employment terms the Industry accounted for eight direct FTE jobs in 2016-17. All activities across the Industry's value chain in area accounted for the creation of two indirect FTE job, for a total of nine FTE<sup>e</sup> jobs in 2016-17, implying an employment multiplier of 1.23 in the area.



<sup>e</sup> Subject to rounding error.

**FIGURE 6.14** ECONOMIC CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY IN SOUTH WEST, 2016-17



SOURCE: ACIL ALLEN CONSULTING



## REFERENCES

1. A Scenario Analysis of the Social Impact of the Western Rock Lobster Industry Management Options on Fleet Hosting Communities, The University of Western Australia and the Fisheries Research and Development Corporation, 2007
2. The Western Rock Lobster Book 2: A history of the fishery, Howard Gray, 1999
3. <http://www.fish.wa.gov.au/Fishing-and-Aquaculture/Commercial-Fishing/Commercial-Fishing-Management/Pages/West-Coast-Rock-Lobster-Fishery.aspx>
4. <http://www.fish.wa.gov.au/Fishing-and-Aquaculture/Commercial-Fishing/Commercial-Fishing-Management/Pages/Case-Study.aspx>
5. <http://www.fish.wa.gov.au/Species/Rock-Lobster/Lobster-Management/Pages/Puerulus-Settlement-Index.aspx>
6. ABC Mid West and Wheat belt, 2017
7. <https://thewest.com.au/news/wa/china-shock-big-risk-to-wa-rock-lobster-prices-ng-b88553616z>
8. Transport and Infrastructure Council: Australian Transport Assessment and Planning Guidelines: Road Parameter Values (2016)
9. City of Greater Geraldton [www.cgq.wa.gov.au](http://www.cgq.wa.gov.au)
10. Australia's coral coast. Com / UWA, 2007
11. Target market Opportunities in Asia for Rock Lobster, 2016, Coriolis
12. Assessing the effects of moving to maximum economic yield effort level in the western rock lobster fishery of Western Australia, Chris Reid et al. Marine Policy, 2013
13. Industry Consultation to Review ITQ Impacts on the Western Rock Lobster Fishing Industry, Western Australian Fishing Industry Council (WAFIC), KAL Analysis 2011
14. Western Rock Lobster Council Strategic Plan 2017-21
15. Western Rock Lobster Industry Risk Management Framework Report, Agknowledge 2016
16. Western Rock Lobster Industry Risk Register, 2017
17. An independent cost and benefit analysis of the Marine Stewardship Council (MSC) certification for the WA rock lobster industry, Western Australian Fishing Industry Council, Agknowledge 2015
18. The Global Soft Commodity Opportunity for Australia and New Zealand, ANZ Focus Greener Pastures, 2012
19. Western Australia's Agrifood, Fibre, Fisheries, Forestry Industries, Department of Agriculture and Food, 2016
20. [www.westernrocklobster.org/the-western-rock-lobster/](http://www.westernrocklobster.org/the-western-rock-lobster/)
21. <https://www.ato.gov.au/Business/Primary-producers/In-detail/Farm-management-deposits-scheme/>
22. Department of Agriculture and Water Resources: Farm Management Deposits Scheme Statistics – June 2017
23. Australian Government, Department of Agriculture and Water Resources, ABARES, 2014-15.



The table below provides the list of Industry representatives consulted as part of this study.

**TABLE 7.1** STAKEHOLDER CONSULTATION

Name	Organization	Sector
Linda Williams	Western Rock Lobster Council	Fisher
David Thompson	Indian Ocean Rock Lobster	Processor
John Fitzhardinge	Southerly Designs / Dongara Marine	Boat Building
Terry Lissiman	Fisher / WRLC	Fisher
Ross Brown	Commonwealth Bank – Regional and Agribusiness banking	Finance
Gavin Treasure	Mid-West Development Commission	Government
Peter Stanich	Fisher	Fisher
Ryan Fuller	Kailis Bros	Processor
Greg Hart	Wild Oceans	Export
Alex Fotiou	Bluwave Processing	Processor
Joe Scaffidi	Fisher	Fisher
Andrew Roseby	ANZ – Regional Business Banking	Finance
Wayne Hosking	Geraldton Fishermen's Co-operative Ltd	Fisher/ Processor
Alison Slys	Shire of Dandaragan	Local Government
Simon de Lestang	Department of Primary Industries and Regional Development	Government

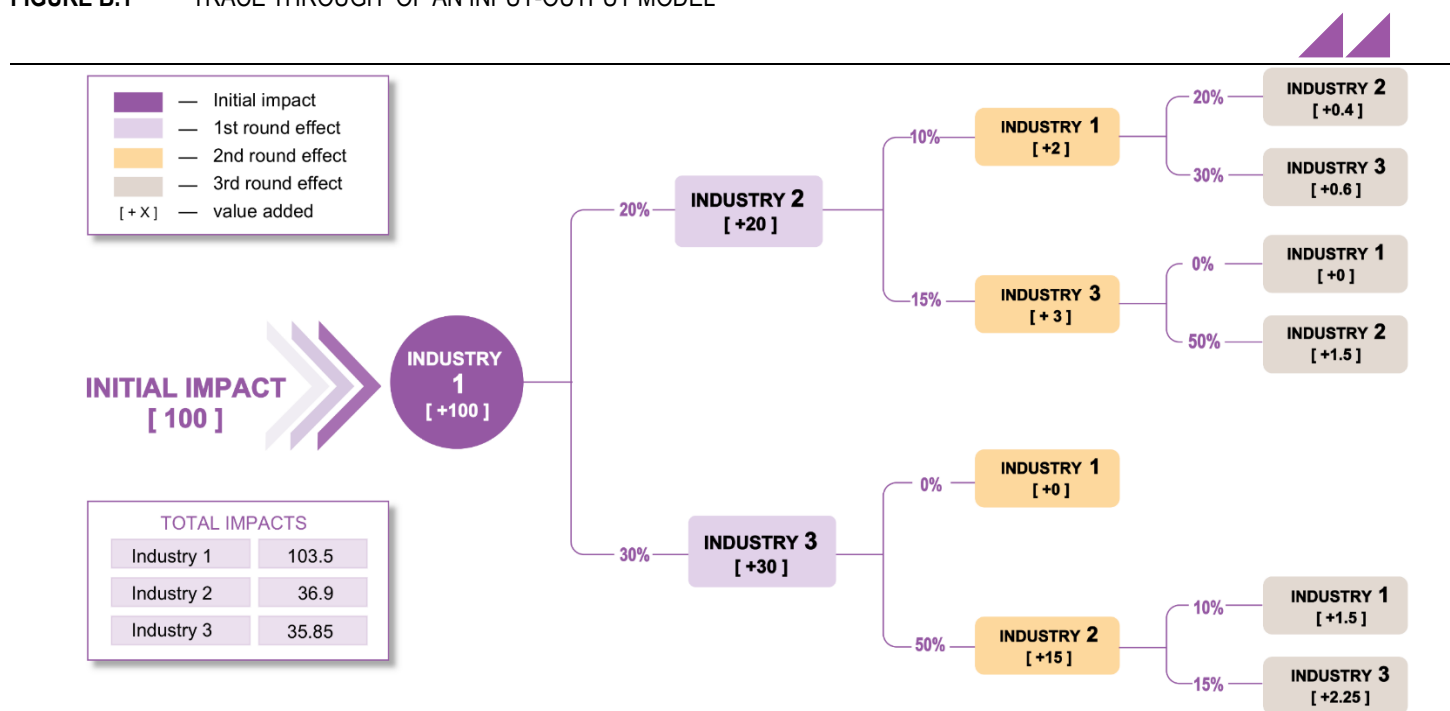
SOURCE: ACIL ALLEN

# B

## INPUT-OUTPUT MODELLING FRAMEWORK

I-O models capture the direct and indirect effects of expenditure by capturing, for each industry, the industries it purchases inputs from and also the industries it sells its outputs to. For example, the I-O model for Western Australia captures purchases from and sales to industries located in Western Australia, as well as imports from outside of Western Australia. **Figure B.1** depicts how an impact is traced through a (very simple) economy with three industries (1, 2, and 3), and is described below.

**FIGURE B.1** "TRACE THROUGH" OF AN INPUT-OUTPUT MODEL



SOURCE ACIL ALLEN CONSULTING:

1. The initial impact occurs in Industry 1 where an additional 100 units of value are added to its output. In order to generate this additional output, Industry 1 requires additional inputs from Industry 2 and Industry 3.
2. Therefore, Industry 2 and 3 increase their output as well. This in turn requires input from Industry 1 and 3 and Industry 1 and 2 respectively which increase their output to satisfy this additional demand, and so on.
3. The impacts grow smaller with each iteration and ultimately converge to zero. This is because they always only share the impact that occurred in the preceding iteration.

---

ACIL ALLEN CONSULTING PTY LTD  
ABN 68 102 652 148  
ACILALLEN.COM.AU

**ABOUT ACIL ALLEN CONSULTING**

ACIL ALLEN CONSULTING IS ONE OF  
THE LARGEST INDEPENDENT,  
ECONOMIC, PUBLIC POLICY, AND  
PUBLIC AFFAIRS MANAGEMENT  
CONSULTING FIRMS IN AUSTRALIA.

WE ADVISE COMPANIES,  
INSTITUTIONS AND GOVERNMENTS  
ON ECONOMICS, POLICY AND  
CORPORATE PUBLIC AFFAIRS  
MANAGEMENT.

WE PROVIDE SENIOR ADVISORY  
SERVICES THAT BRING  
UNPARALLELED STRATEGIC  
THINKING AND REAL WORLD  
EXPERIENCE TO BEAR ON PROBLEM  
SOLVING AND STRATEGY  
FORMULATION.







# Australasian Institute for Spiny (Rock) Lobster Research

A Concept Study

April 2018

# CONTENTS

Executive Summary .....	5
1. Background and Overview .....	13
1.1. Nature of this Concept Study .....	15
1.2. Structure of this Concept Study .....	16
2. The Strategic Case for an Australasian Institute for Spiny Lobster Research .....	18
2.1. Australian Lobster Production in the Global Market Place.....	18
2.2. Australian Lobster and Global Lobster Trade Flows .....	20
2.3. The Australian Lobster Industry .....	22
2.4. Leadership from the Western Australian Lobster Industry .....	30
2.5. Importance of other Sectors of the Australian Lobster Industry.....	34
2.6. Australian Lobster Research Capability is More Distributed .....	35
2.7. The Strategic Case for an Australasian Institute of Spiny Lobster Research .....	35
3. Contemporary Australian Lobster Industry Knowledge and Technology Needs .....	37
4. The Current Industry Investment in Research and Development and Implications for the Proposed Institute.....	43
4.1. Fisheries Research and Development Corporation .....	43
4.2. Western Rock Lobster Industry Investment in Research and Development.....	45
4.3. Southern Rock Lobster Industry Investment in Research and Development .....	48
4.4. FRDC Investment in Australian Lobster Industry Research and Development .....	48
5. Structural Considerations for the Proposed Institute.....	54
5.1. Case Precedence .....	54
5.2. Type of Institution.....	54
5.3. Potential Participants and Stakeholders in the Proposed Institute.....	54
5.4. Western Australian Infrastructure Options .....	56
5.5. Operating Budget and Legal Structure.....	59
6. Resourcing Options for the Proposed Institute.....	60
6.1. Improved Leverage from Existing Contributions .....	60
6.2. Additional Levy .....	60
6.3. Other Sources of Leverage .....	60
6.4. Optimisation of In-kind Support .....	62

6.5. Optimising Utilisation of Research Students .....	62
7. Governance Considerations for the Proposed Institute .....	63
7.1. Governance and Research Organisations.....	63
7.2. The Cooperative Research Centre Experience .....	65
7.3. Preliminary Governance Context of the Proposed Institute.....	66
8. Moving Forward .....	69
8.1. Preliminary Recommendations .....	69
8.2. Next steps .....	69
Appendix 1: Interviewees .....	71
Appendix 2: Preliminary Research Agenda.....	73
Appendix 3: FRDC Investment in Australian Lobster Fishery Research and Development .....	87
Appendix 4: Other Seafood Industry Research Collaborations and Institutes.....	105
Appendix 5: Principles of Good Governance Framework.....	112

## **Disclosure and Disclaimer**

This report has been prepared by Australian Venture Consultants Pty Ltd (ACN: 101 195 699) ('AVC'). AVC has been commissioned to prepare this report by the Western Rock Lobster Council, and has received a fee from the Western Rock Lobster Council for its preparation.

While the information contained in this report has been prepared by AVC with all reasonable care from sources that AVC believes to be reliable, no responsibility or liability is accepted from AVC for any errors, omissions or misstatements however caused. Any opinions or recommendations reflect the judgment and assumptions of AVC as at the date of the document and may change without notice. AVC, its officers, agents and employees exclude all liability whatsoever, in negligence or otherwise, for any loss or damage relating to this document to the full extent permitted by law. Any opinion contained in this report is unsolicited general information only. AVC is not aware that any recipient intends to rely on this report or of the manner in which a recipient intends to use it. In preparing this information it is not possible to take into consideration the information or opinion needs of any individual recipient. Recipients should conduct their own research into the issues discussed in this report before acting on any recommendation.

---

# Executive Summary

---

This report is a Concept Study designed to articulate a *prima facie* case for the establishment of an **Australasian Institute for Spiny (Rock) Lobster Research** (the 'Proposed Institute'). By identifying and executing a research agenda that is acutely targeted at the knowledge and technology needs of the Australian lobster industry, the Proposed Institute will assist the industry in its goal of at least doubling GVP to A\$1.3 billion within 10 years.<sup>1</sup>

The Australian lobster industry is currently the Nation's most valuable seafood industry and one of its most important primary industries. While there are numerous species of spiny lobster native to Australian waters, the current Australian lobster industry is based on the wild-capture, processing and primarily export of four species of spiny lobster – Western Rock Lobster (*Panulirus cygnus*), Southern Rock Lobster (*Jasus edwardsii*), Eastern Rock Lobster (*Sagmariasus verreaux*) and Tropical (or Ornate) Lobster (*Panulirus ornatus*).

The Australian lobster industry produces a total GVP of approximately A\$670 million, accounts for 4 percent of total global lobster supply and 14 percent of global spiny lobster supply. The vast majority of the volume of Australian lobster supply, and approximately 60 percent of the industry's GVP is produced from the Western Rock Lobster sector, with the Southern Rock Lobster sector being the second largest and, currently, fastest growing sector of the industry.

## Strategic Case for an Australasian Institute for Spiny Lobster Research

The approximate 300,000 tonnes of lobster product produced globally in 2015 had a value of US\$3.75 billion, representing approximately 2.8 percent of the global seafood industry. Over the past five years, there have been three notable trends in global lobster production:

- Production of American Clawed Lobster has increased and continues to dominate global lobster supply;
- A decline in production of other northern hemisphere, cold water lobster species, primarily from European fisheries; and
- An increase in production of spiny lobster species, driven primarily by increased production of various tropical spiny lobster species.

While it typically attracts premium pricing, Australian wild-caught lobster production represents only a small portion of global supply. Furthermore, its market share is under constant threat from Caribbean Spiny Lobster and particularly production of various species of tropical spiny lobster, increasing volumes in the latter of which are produced from grow-out systems in South East Asia based on harvested puerulus.

Recent trade history in global lobster markets exhibits several key trends:

- North American markets continue to dominate global lobster trade;
- The European Union remains a significant market, but demand has plateaued;
- The People's Republic of China (PRC) is a rapidly expanding market for lobster; and

---

<sup>1</sup> This target is based on a Western Rock Lobster target to increase GVP from A\$453 million in 2015-16 to A\$1.0 billion by 2028. Should other sectors of the Australian Lobster industry subscribe to the Proposed Institute, growth targets for those sectors will be included.

- Despite increased production, spiny lobster species market share is being displaced by American Clawed Lobster in all key markets, a trend that is particularly evident in Japan and the PRC.

Overall, global demand for lobster is increasing, including in markets traditionally supplied by the Australian lobster industry. However, in all instances, the vast majority of new demand is being met by increased imports of American Clawed Lobster. This overall trend, combined with the threat of increased supply competition from grow-out produced tropical spiny lobster supply from South East Asia is a significant threat to the Australian lobster industry's goal of achieving GVP of at least A\$1.3 billion within 10 years.

Australia is the world's second largest producer of spiny lobster species and its lobster industry can be described according to the following dynamics:

- The Western Australian industry dominates Australian lobster production;
- Prosperity is currently driven by a single product sold to Asian markets;
- The domestic lobster market is very small;
- There is price discrepancy across Australian lobster product; and
- There is limited coordination between the different sectors of the Australian lobster industry.

Strong product similarity, particularly between Southern Rock Lobster and Western Rock Lobster, indicates that more could be done to achieve higher prices for a larger volume of Australian lobster production, and more can likely be done to expand the domestic market for lobster product.

A number of characteristics render the Western Australian lobster industry the leading sector of the national industry and motivates Western Australian lobster industry stakeholders to use this leadership to advance the interests of the Australian lobster industry. Namely the Western Rock Lobster industry:

- Is a key sector of the Australian seafood industry in its own right;
- Is a world-leader in fisheries resource management;
- Is a global leader in Marine Stewardship Council (MSC) certification;
- Is a global leader in the processing of product for premium markets;
- Is an important component of the Western Australian economy;
- Is a major driver of regional Western Australia;
- Shares the resource with an important recreational fishery; and
- Is a basis for an emerging culinary tourism industry in Western Australia.

This leadership position should not serve to discount the significant and expanding contribution made by other sectors of the Australian lobster industry. This Concept Study has focused on preliminary identification of new knowledge and technology needs that are likely to be common to all sectors of the Australian lobster industry. Western Australia hosts significant expertise in lobster research, particularly in the area of fisheries management and stock forecasting. However, considerable other important expertise is more widely distributed, and in some cases fragmented. To be optimally effective, the Proposed Institute will need to incorporate this wider expertise, or at the very least have formal links with it.

A strategic case for the Proposed Institute is founded in the following:

- Lobster is a Nationally important industry with significant opportunity for growth;
- There are significant threats to the competitiveness of Australian lobster;

- Opportunities and threats can only be addressed through the development and commercialisation of new knowledge and technologies designed to address the specific opportunities and threats; and
- To be effective, there must be a concerted, strategically targeted and coordinated investment in developing that knowledge and those technologies

## Contemporary Australian Lobster Industry Knowledge and Technology Needs

This Concept Paper has developed a preliminary set of high-level knowledge and technology needs of the Australian lobster industry that will need to be addressed for the Industry to progress toward its goal of achieving a profitable GVP of at least A\$1.3 billion within 10 years. It must be stressed that this preliminary set of needs has been subjected to very limited consultation, and a comprehensive research planning exercise will be one of the first steps in establishing the Proposed Institute.

The following table summarises the preliminary research agenda.

Program	Subprogram
Program 1: Maintaining Optimal Sustainable Harvest	Improving the accuracy of stock assessments
	Impact of climate change on the fishery
	Impact of marine noise on the fishery
	Impact of recreational and tourism use of the marine environment on the fishery
	Impact of increased coastal and urban and industrial development on the fishery
	Risk assessment of invasive species and pathogens
	Cumulative impact modelling
Program 2: Improving Productivity in the Fishing Effort and Maintaining Social License to Operate	Economics of Lobster fishing enterprise
	Efficient vessel design
	Efficient pot handling
	Crew health and welfare
	On-board digital systems
	Improved catch targeting
	Bait alternatives
Wildlife protection systems	
Program 3: New Australian Lobster Products and Markets	Capitalising on the Australia-China Free Trade Agreement and other Trade Agreements
	Australian Lobster product diversification
	Development of new export markets (including development of in-market consumer knowledge and development)

Program	Subprogram
	Domestic market development
Program 4: Downstream Productivity and Supply Chain Optimisation	Digital integration for product traceability and supply chain management
	Processing plant automation
	Improving live product survival rates
	Packaging for optimal product quality
	Australian Lobster supply chain economics
Program 5: Profitable Lobster Aquaculture and Feedlots	Aquaculture production of Australian tropical lobster species
	Feedlot systems design and husbandry practice
	Nutrition for effective feedlot production of Australian Lobster
	Australian Lobster moulting biology
	Managing animal health in Australian Lobster feedlot and aquaculture operations
Program 6: Policy for Growth	Risk and Ecosystems Based Fisheries Management
	Best practice co-management
	Best practice taxation of industry
	Best practice regulation of the recreational sector
	Governance, leadership and people development

While the Australian Lobster industry competes with production from other countries, there are pre-competitive issues (such as aspects of social license to operate) in which the global industry has a mutual interest. It is envisaged that the Proposed Institute will seek out international linkages for research in such areas.

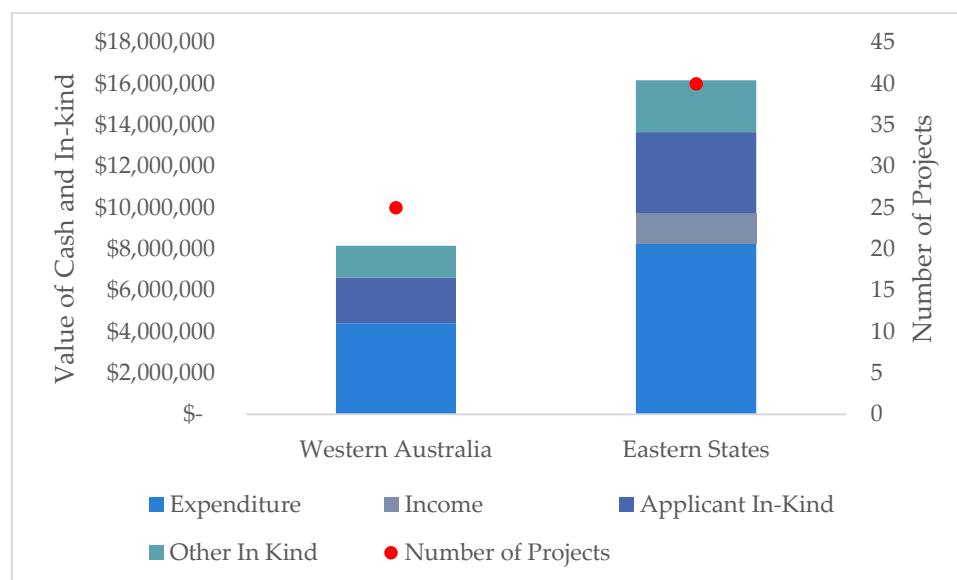
### **Current Research Funding for the Australian Lobster Industry and Implications for the Proposed Institute**

A key consideration in assessing the case for the Proposed Institute is whether it is able to marshal a greater level of resources to fund and facilitate research and development targeted at developing solutions for the issues identified by the Australian lobster industry than is currently the case. The primary vehicle through which the Australian lobster industry currently invests in industry-oriented research and development is the Fisheries Research and Development Corporation (FRDC).

As a component of payments made to the Western Australian Government via the resource access licence fee, the Western Rock Lobster industry currently makes an indirect contribution to the FRDC of approximately A\$1.0 million per annum. Under current funding arrangements, the Western Rock Lobster industry then receives slightly less than this amount in FRDC expenditure on projects that directly address its needs through its Industry Partnership Agreement with the FRDC. Historically it has received around 50 percent of its indirect investment with the FRDC under this mechanism.



Furthermore, while the Western Rock Lobster sector produces the majority of Australian lobster industry GVP, FRDC investment in projects it deems to be relevant to the Australian lobster industry during the period 201-11 to 201-18 have been substantially less for projects initiated by Western Australian lobster industry interests more generally than those initiated by eastern states lobster interests. This is illustrated in the following diagram.



During the period 2010-11 to 2017-18:

- The FRDC invested, through its various mechanisms, a total of approximately A\$12.7 million across 65 research projects the FRDC deemed to be relevant to the Australian lobster industry.
- The vast majority (77 percent) of FRDC funds that have been committed to research projects deemed by the FRDC to be relevant to the Australian lobster industry, are by virtue of the Australian lobster industry being party to their initiation, indeed relevant to the Australian lobster industry.<sup>2</sup>
- However, while almost 90 percent of the total FRDC expenditure associated with projects initiated from eastern states lobster interests were initiated by the industry either acting alone or in collaboration with another sector of the Australian seafood industry or a state government, only 54 percent of the funding associated with projects initiated by Western Australian lobster interests had been initiated by the lobster industry, and half of those were in collaboration with the Western Australian government.
- Only the Western Australian industry has had FRDC funded projects deemed relevant to the lobster industry, initiated by other sectors of the industry without express co-initiation from the lobster industry.
- The FRDC funded a total of 34 projects with a total FRDC expenditure of approximately A\$7.0 million through the Southern Rock Lobster, Abalone Council of Australia and Western Rock Lobster Industry Partnership Agreements. Projects initiated by eastern states interests (Southern Rock Lobster and Abalone Council of Australia) accounted for 71 percent of the projects and 82 percent of the FRDC expenditure on those projects. The eastern states industry also achieved superior leverage from FRDC expenditure through their Industry Partnership Agreements.

<sup>2</sup> This assumes that because the Australian lobster industry has been the sole or co-initiator of a specific project, that project can be deemed to be of relevance to the Australian lobster industry.

- Through the Western Australian, Tasmanian, New South Wales and Victorian Regional Advisory Committee FRDC funding mechanism and a similar mechanisms pertaining to the Torres Strait Regional Authority, the FRDC funded 15 research projects deemed relevant to the Australian lobster industry for a total FRDC expenditure of approximately \$3.2 million. Over half of these projects and almost 70 percent of the associated FRDC expenditure under these mechanisms is attributable to the Western Australian Regional Advisory Committee.

The Western Rock Lobster industry makes a significant indirect contribution to the FRDC, the majority of which is directed to fund research for other Australian fishing sector interests. This is primarily a function of relatively lower hypothecation factors in the Western Rock Lobster Industry Partnership Agreement, a lower level of project proposals presented to the FRDC by the Western Rock Lobster industry and a significant number of the proposals that have been presented being deemed by the FRDC decision-making framework as either not viable for FRDC funding or not competitive.

Preliminary modelling suggests that eastern states lobster interests, and to a lesser extent the Western Australian government will be financially motivated to retain the current mechanism for funding Lobster research unless a substantially compelling case can be presented.

If the Proposed Institute is able to facilitate historical best practice leverage against FRDC expenditure, or even bring all of the industry up to at least average leverage practice, it will generate substantial additional resources. By actively seeking out a much wider range of leverage sources, it should be able to further enhance leverage, bringing significant additional research resources to bear on solving opportunities and challenges identified by the Australian lobster industry.

Finally, given the objective of the Proposed Institute is to grow Australian lobster industry GVP, under the current FRDC funding arrangements, the success of the Proposed Institute in achieving this objective, will result in a concomitant increase in research resources for both the Australian lobster industry, and all other Australian fisheries.

## **Structural Consideration for the Proposed Institute**

Multi-sector, multidisciplinary, mission-oriented formal research collaborations such as that being proposed are common-place in most developed nations (including Australia) and in primary industries generally. The Australian and Western Australian Governments continue to invest in the establishment and operations of such collaboration in industries that are deemed to be of national or state importance.

Mission-oriented research collaborations can adopt a number of structural forms. While a precise structure cannot be determined until a research agenda has been finalised, and resources and participants are committed, it is likely that the Proposed Institute will adopt a hybrid model, combining some proprietary infrastructure and expertise, and formal partnerships with external research providers across Australia and internationally. There are a number of existing options in Western Australia with respect to meeting infrastructure requirements including infrastructure currently operated by the Australian Centre for Applied Aquaculture Research, Batavia Coast Marine Institute, Waterman's Fishery Research Centre and Fisheries WA Hillary's Research Centre.

Key potential participants and stakeholders in the Proposed Institute include Australian lobster fishers, Australian lobster processors, Australian fishery regulators, lobster industry advocates, recreational lobster sector advocates, Australian universities, Australian Institute of Marine

Science, CSIRO, South Australian Research and Development Institute, FRDC, Commonwealth Department of Agriculture and Water Resources, State departments of primary industry, international seafood distributors and retailers, international lobster research programs and the wider community.

While an operating budget for the Proposed Institute cannot be established in the absence of more detailed planning with respect to research agenda, activities and structure, it is expected that the operating budget would at the very least, be in the range of A\$0.5 to A\$1.0 million per annum, excluding investment in research projects.

### **Resourcing Options for the Proposed Institute**

The first immediate potential source of resourcing for the Proposed Institute is the FRDC. By combining the Southern Rock Lobster and Western Rock Lobster FRDC Industry Partnership Agreements in pursuit of the Proposed Institute's research agenda, and optimising leverage under those agreements, substantially greater resources could be bought to bare for the benefit of the entire Australian lobster industry.

Furthermore, other Commonwealth programs could also be used to leverage industry and other stakeholder investment in projects that are aligned with the Proposed Institute's research agenda. This Concept Paper has identified a total of 11 other government sources that could potentially be the source of additional leverage.

While an additional and broader industry levy is also a potential option for resourcing the Proposed Institute, many fishers are likely to resist paying additional fees for research when they are already contributing, and levying a fee on the supply chain downstream from fishers could also prove difficult. The optimisation of in-kind support and use of research students at a project level are also likely to prove important considerations for the economics of the Proposed Institute.

### **Governance Considerations for the Proposed Institute**

Strong and effective governance systems are one of, if not the most important factor in the success of a mission-oriented collaborative research institute. To be optimally effective, a governance framework must be tailored for the specific governance context of the organisation (in this case a multi-sector, multi-disciplinary, mission-oriented collaborative research institute), which is determined by a wide range of factors.

Because the research priorities, activities, structure, resourcing arrangements and participation in the Proposed Institute has not as yet been determined, its governance context cannot be adequately defined. There are however, a number of principles that should be considered in developing the governance framework for the Proposed Institute that, if adhered to, will ensure the high quality decision-making that will be required to underwrite the Proposed Institute's success.

It is likely that irrespective of the specifics of the governance context some key principles such as the following will be required:

- Separation of 'ownership', governance and management responsibilities;
- Strategic research plan that determines areas of research in which the Proposed Institute may invest;
- End-user and independent oriented membership of the peak strategic and operational decision-making body;

- Multi-stage research investment decision-making that ensures technical and end-user credibility in research projects that are funded by the Proposed Institute; and
- Decision-making accountability at all levels of institute and project management.

## Moving Forward

This Concept Paper makes a *prima facie* strategic, research needs and funding case for the Proposed Institute. To progress toward design and implementation of the Proposed Institute, the following actions are recommended:





- **Wider Consultation**  
Unless the Proposed Institute has in-principle support from the National lobster industry (fishers and processors) and access to a critical mass of the National lobster innovation ecosystem that will be necessary to deliver on the Proposed Institute, its success will be limited to the Western Rock Lobster industry only. This Concept Paper should be used as a tool for attaining input from a wider set of key stakeholders.
- **Research Priorities Plan**  
Should adequate in-principle support for the Proposed Institute be identified, the first step in its establishment will be to develop the Research Priorities Plan that will determine the specific nature of specific research investments that will be made by the Proposed Institute in its first five years of operation. It is this end-user driven document that fundamentally underpins the purpose, credibility and success of the Proposed Institute.
- **Capability Assessment and Gap Analysis**  
A detailed assessment of research capability that is relevant to the needs identified by the Research Priorities Plan should be undertaken to identify important research partners in Australia and overseas.
- **Business Plan**  
A detailed and 'bankable' business planning exercise should be undertaken to determine the optimal organisational and legal structure of the Proposed Institute, any infrastructure or human resource requirements, management structure, operating plan, operating budget and resourcing options.
- **Governance Framework and Charter**  
A detailed governance framework that will guide decision-making at the Proposed Institute should be developed and produced as a Governance Charter. Based on a clearly defined governance context, this important document will prescribe issues such as Board function, composition and operations; executive functions and responsibilities; research investment decision-cycle; research project management cycle; and other important aspects of organisational decision-making.
- **Structural Agreements**  
Finally, term sheets for any contractual arrangements that are required to give effect to the Proposed Institute will need to be developed.

---

# 1. Background and Overview

---

The Australian lobster industry is the Nation's most valuable seafood industry and one of its most important primary industries. While there are numerous species of spiny lobster native to Australian waters (some commercial species of which are endemic to Australia), the current Australian industry is comprised of wild catch fisheries and downstream processing operations based on the four species of spiny lobster summarised in Table 1 below.

Species	Common Names	Distribution	2014-15 Catch (t)	2014-15 GVP (A\$m)
<b><i>Panulirus cygnus</i></b> 	<b>Western Rock Lobster</b> , Western Australian Crayfish, Western Cray	Shark Bay, down the Western Australian coast to Albany.	6,127	385.9
<b><i>Jasus edwardsii</i></b> 	<b>Southern Rock Lobster</b> , Cray, Crayfish, Melbourne Crayfish, Red Rock Lobster, Southern Lobster, Southern Spiny Lobster, Tasmanian Crayfish	From Geraldton in Western Australia, around the southern coast of Australia (including Tasmania) and up to Coffs Harbour in New South Wales (Also a significant industry in New Zealand).	2,892	238.0
<b><i>Sagmariasus verreaux</i></b> 	<b>Eastern Rock Lobster</b> , Crayfish, Green Rock Lobster, Local Lobster, Packhorse Crayfish, Sydney Crayfish	From the New South Wales and Queensland Border, down the east coast of Australia to Bass Strait (Also a minor industry in New Zealand).	156	11.4
<b><i>Panulirus ornatus</i> (and other Tropical Lobster species)</b> 	<b>Tropical Rock Lobster</b> , Coral Crayfish, Doublespine Rock Lobster, Green Crayfish, Ornate Rock Lobster, Painted Crayfish, Rock Crayfish, Scalloped Lobster, Tropical Spiny Lobster	Margaret River in Western Australia, around the northern coast of Australia to the Central New South Wales Coast (Also a significant fishery throughout the Indo-pacific Region)	1,134	32.3
<b>TOTAL</b>			10,309	667.6

**TABLE 1 – AUSTRALIAN SPINY LOBSTER INDUSTRY – SNAPSHOT 2014-15<sup>3</sup>**

The purely wild-catch fishery that harvests this resource and the seafood processing sector that produces marketable product accounts for approximately 4 percent of global lobster supply and 14 percent of global spiny lobster supply. It is a very well managed fishery, with the Western Rock Lobster fishery being the first fishery in the world to be granted certification as an ecologically sustainable fishery from the Marine Stewardship Council (MSC).

<sup>3</sup> Images courtesy of Western Australian Department of Primary Industries and Regional Development, Primary Industries and Resources South Australia and Australian Museum

The vast majority of Australian lobster product is exported chilled or live to Asia via distribution centres in Vietnam and Hong Kong Special Administrative Region (Hong Kong SAR), albeit this is rapidly changing as a result of the Australia – China Trade Agreement. The industry faces significant opportunity to increase both the volume and value of supply and to develop new products and markets. However, it also faces significant challenges in the form of competition from other producers of lobster product and alternatives to conventional wild-harvest, as well as the generally fickle nature of seafood markets and the high level of product substitution in those markets.

It is entrepreneurship and industry leadership that will ultimately ensure that the industry is able to capitalise on these opportunities and mitigate the risk posed by these threats. However, to be equipped to perform this task, businesses and industry leadership must be adequately equipped with the scientific knowledge and technologies that will enable industry to achieve productivity growth, increase output and maintain and grow market share in existing and new markets. This can only be achieved by an industry driven, end-user focused research program that is acutely targeted at generating the knowledge and technology required to achieve these objectives.

The peak industry body for the Western Rock Lobster Industry (which as illustrated in Table 1 above accounts for approximately 60 percent of the Australian spiny lobster industry's GVP), believes that an institute that is focused on developing this knowledge and technologies will make a significant contribution toward the Australian Lobster industry at least doubling its GVP to A\$1.3 billion within 10 years.<sup>4</sup>

This Concept Study is the first step toward the development of a proposed Australasian Institute for Spiny Lobster Research (the 'Proposed Institute')

## 1.1. Nature of this Concept Study

The observations and recommendations in this Concept Study are of a preliminary nature only. The strategic analysis that underpins the case for the Proposed Institute, although sound, is not exhaustive, the proposed research agenda is preliminary in nature, resourcing options have not been fully analysed and a business plan and governance framework cannot be fully established until a number of structural issues have been determined.

Most importantly, the stakeholder consultation on which the Concept Study has been based has been limited to the individuals listed in Appendix 1. This has been largely Western Rock Lobster industry centric and even within the Western Rock Lobster Industry, consultation has been limited. A primary purpose of this Concept Study is to communicate the concept to a wider range of Western Australian and Australian industry stakeholders for further input, refinement and validation of the proposal. Should adequate 'buy-in' to the concept be achieved from this wider consultation process, an investment in the comprehensive end-user driven research plan, 'bankable' business case and governance charter for the Proposed Institute will be made. If adequate 'buy-in' is not achieved the Western Rock Lobster Council will give due consideration to progressing the initiative with an initial focus on the Western Australian Lobster industry.

---

<sup>4</sup> This target is based on a Western Rock Lobster target to increase GVP from A\$453 million in 2015-16 to A\$1.0 billion by 2028. Should other sectors of the Australian Lobster industry subscribe to the Proposed Institute, growth targets for those sectors will be included.

## 1.2. Structure of this Concept Study

This Concept Study is structured to articulate the case, as it is currently understood, for the Proposed Institute, the envisaged nature of research that would be undertaken, possible resourcing options, structural considerations, governance issues and a recommended pathway forward. While the Concept Study makes some recommendations, the nature of those recommendations are preliminary and subject to further consultation.

For the purpose of assisting the reader in navigating the content of this Concept Study, Table 2 below summarises the chapters.

Chapter	Summary
<ul style="list-style-type: none"> <li>▪ Background and Overview</li> </ul>	Chapter 1 provides a very high level of overview of the Australian lobster industry, why the Proposed Institute is required and describes the nature and limitations of this Concept Study.
<ul style="list-style-type: none"> <li>▪ The Strategic Case for an Australasian Institute for Spiny Lobster Research</li> </ul>	Chapter 2 provides an evidence-based articulation of the competitive position of the Australian lobster industry in the global lobster industry and international seafood markets. It describes key industry and market dynamics and trends and the opportunities and threats posed to the Australian lobster industry by those dynamics and trends. It also discusses key domestic market and industry issues. This analysis forms the basis for why investment in focused research is required, and the preliminary basis for research investment prioritisation. It makes a case as to why Western Australia should and is motivated to take a leadership role in this endeavour, but for an optimal outcome will endeavour to engage with and incentivise the National industry and the more nationally distributed Lobster research capability.
<ul style="list-style-type: none"> <li>▪ Australian Lobster Knowledge and Technology Needs</li> </ul>	Chapter 3 provides a preliminary, rudimentary assessment of the broad knowledge and technology needs that must be developed to facilitate profitable expansion of the Australian lobster industry. This assessment has been based on very limited consultation and is designed only to serve as a basis for further discussion and the development of a comprehensive research priorities plan based on an assessment of the state-of-the-art and consultation with key stakeholders.
<ul style="list-style-type: none"> <li>▪ The Current Industry Investment in Research and Development</li> </ul>	Chapter 4 explains, to the extent that is possible from information available in the public domain, the main investment that is currently made by the Western Australian and eastern states sectors of the Australian lobster industry in industry-oriented research and development through the Fisheries Research and Development Corporation. This assessment approximates the amount of that investment, explains the mechanisms through which the investment is made and leveraged, and analyses the destinations of that investment. It serves to demonstrate that there is scope to both increase industry research investment leverage and the scope of research across which leveraged funds could be invested.
<ul style="list-style-type: none"> <li>▪ Structural Considerations for the Proposed Institute</li> </ul>	Chapter 5 identifies a number of structural issues that will need to be considered in the formulation of the Proposed Institute. Optimal structural form and operating budget will very much be determined by the extent and nature of its agreed research agenda, the extent to which it will operate any research infrastructure or directly employ research expertise, and the number and nature of formal participants in the Proposed Institute.
<ul style="list-style-type: none"> <li>▪ Resourcing Options for the Proposed Institute</li> </ul>	Chapter 6 describes how current industry contributions to the FRDC could theoretically be redirected to support research undertaken by the Proposed Institute, and identifies other government programs that could prove potential



Chapter	Summary
	sources for further leverage or to support identified research needs that are beyond the scope of the FRDC's research remit.
<ul style="list-style-type: none"> <li>▪ Governance Considerations for the Proposed Institute</li> </ul>	Chapter 7 discusses key governance issues associated with research collaborations and identifies a number of key governance principles that will likely be necessary to underpin the success of the Proposed Institute.
<ul style="list-style-type: none"> <li>▪ Moving Forward</li> </ul>	Chapter 8 makes a recommendation as to the prima facie case for the Proposed Institute as established by the analysis in this Concept Paper, and makes recommendations with respect to actions that should be undertaken to progress to implementation of a functioning Proposed Institute.

**TABLE 2 – STRUCTURE OF THIS CONCEPT STUDY**

---

## 2. The Strategic Case for an Australasian Institute for Spiny Lobster Research

---

### 2.1. Australian Lobster Production in the Global Market Place

Like most Australian primary industries, the Australian lobster industry is export market oriented and is almost exclusively a price-taker in those markets. Increasing market share and moving toward a higher degree of 'de-commoditisation' of product are key elements in achieving the objective of growing profitable GVP to A\$1.3 billion within 10 years.

Globally, the lobster fishery is one of the highest value wild-catch fisheries in the world. For example:

- Across all commercial lobster species lobster meat has an average unit value of US\$20 per kilogram (with spiny lobster species typically commanding significantly higher prices than the average), which is double that of shrimp (US\$10 per kilogram) and four times that of the average finfish species (US\$5 per kilogram)<sup>5</sup>; and
- In 2015, the US\$3.75 billion of global lobster production accounted for approximately 2.8 percent of the US\$134 billion global seafood industry<sup>6</sup>.

In 2015, Lobster fisheries across the globe produced approximately 300,000 tonnes of product. Over the past five years, there are three notable trends in global Lobster production:

- Production of American Clawed Lobster has increased and continues to dominate global lobster supply;
- There has been a decline in production of other northern hemisphere, cold water lobster species, primarily from European fisheries; and
- There has been an increase in production of spiny lobster species, driven primarily by increased production of various tropical spiny lobster species.

These trends are important to the future competitiveness of the Australian lobster industry and are discussed in the following subsections.

#### **American Clawed Lobster continues to dominate global supply**

Approximately 50 percent of global lobster supply is derived from a single species, American Clawed Lobster (*Homarus americanus*)<sup>7</sup>, which is produced from wild-catch fisheries along the north east coast of the United States and east coast of Canada. In 2015, total landings of American Lobster were approximately 157,000 tonnes, sourced from fisheries off New England in the United States, as well as Brunswick, Nova Scotia, Newfoundland and Labrador



---

<sup>5</sup> 2015 prices

<sup>6</sup> Food and Agricultural Organisation (2017), *FishStatJ – FAO Global Fishery and Aquaculture Statistics*, United Nations

<sup>7</sup> American Clawed Lobster is also referred to as American Lobster, Atlantic, Canadian and True Lobster; Image courtesy of Greater Atlantic Regional Fisheries Office

in Canada.<sup>8</sup> As illustrated in Figure 1 below, volumes of American Clawed Lobster production have increased over the past five years at a Compound Annual Growth Rate (CAGR) of 6.0 percent.

### Production of European Lobster Species is declining

The other main species of cold water Lobster are the European Lobster (*Homarus gammarus*) and the Norway Lobster (*Nephrops norvegicus*)<sup>9</sup>. The European Lobster is typically considered by seafood markets to be interchangeable with the American Clawed Lobster, and accounts for a very small portion of global production (approximately 2 percent). However, the Norway Lobster, also referred to as the Dublin Bay Prawn and generally categorised by seafood markets as a niche product of its own (despite being a true lobster species), makes up approximately 16 percent of global production.

Production of both the European and Norway Lobster has been in decline for the past five years, with Norway Lobster declining by 5.1 percent and European Lobster by 3.4 percent. This is illustrated in Figure 1 below.



### Production of Spiny Lobster, particularly tropical species, is increasing

The remaining approximately 31 percent of global production of lobster is comprised of various spiny lobster species that are produced around the globe. Spiny lobsters (also referred to as rock lobster, langustas, langouste, sea crayfish, crawfish and kreel) can be morphologically distinguished by their very thick and long antennae and the absence of chelae (or claws) on the first four pairs of walking legs. Their lifecycle is also characterised by a unique larval phase known as phyllosoma.

There are 12 extant genera of spiny lobster, containing approximately 60 individual species that are found variably in most warm seas around the world including the Mediterranean Sea, waters off the Caribbean, South East Asia, South Africa and Australasia.

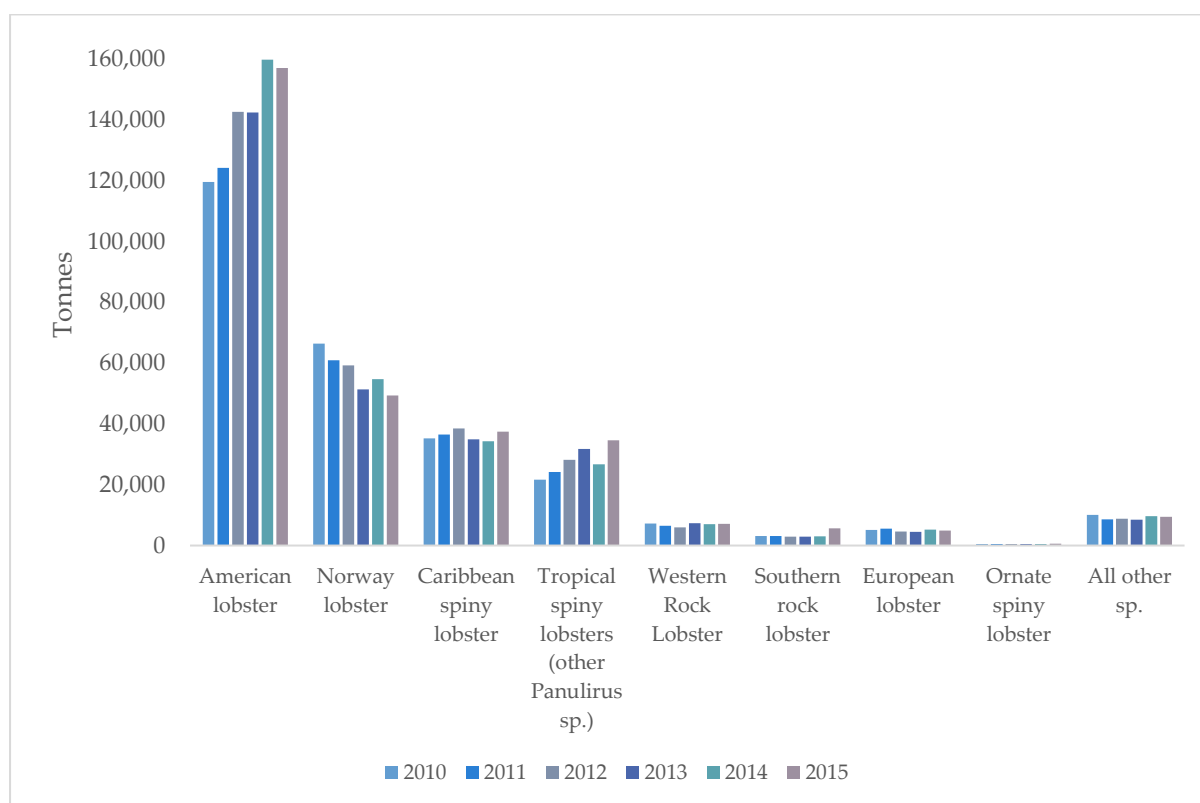
Caribbean Spiny Lobster accounts for approximately 12 percent of the total volume of lobster and around 39 percent of spiny lobster production. Production volumes of Caribbean Spiny Lobster have been relatively stable over the past five years, growing at a CAGR of 0.6 percent. On the other hand, various species of tropical spiny lobster account for approximately 11 percent of total global lobster production and around 37 percent of spiny lobster production, with a production growth rate of 9.4 percent over the past five years.

Production of Australian Western Rock Lobster and Southern Rock Lobster, as well as Ornate Lobster collectively accounts for approximately 4 percent of global lobster production and approximately 14 percent of spiny lobster production. Production of Southern Rock Lobster has grown considerably over the past five years at a CAGR of 15.8 percent, whereas production of Western Rock Lobster and Ornate Lobster from Australia has increased at a more modest 2.4 percent.

<sup>8</sup> Food and Agricultural Organisation (2017), *GlobeFish*, United Nations

<sup>9</sup> Images Courtesy of the Institute of Marine Research

Figure 1 below illustrates recent trends in global lobster production.



**FIGURE 1 – GLOBAL LOBSTER PRODUCTION BY KEY SPECIES**

While typically attracting premium pricing, Australian wild-caught lobster supply represents only a small portion of global supply and its market share is under constant threat from Caribbean Spiny Lobster and particularly various species of tropical spiny lobster production, increasing volumes in the latter of which are produced from grow-out systems in South East Asia based on harvested puerulus.

## 2.2. Australian Lobster and Global Lobster Trade Flows

Recent global trade history in lobster exhibits several key trends:

- North American markets continue to dominate global lobster trade;
- European Union remains a significant market for lobster, but demand has plateaued;
- The People’s Republic of China (PRC) is a rapidly expanding market for lobster; and
- Despite increased production, spiny lobster species market share is being displaced by American Clawed Lobster in all key markets, a trend that is particularly evident in Japan and the PRC.

These key trade trends are discussed in the following subsections.

### North American markets continue to dominate global Lobster trade

Given the dominance of American Clawed Lobster production, it is not surprising that the United States and Canada are the largest exporters of lobster product, exporting 55,000 and 73,100 tonnes respectively.<sup>10</sup> However, as a result of their large domestic markets, the world’s largest exporters of lobster, are also very significant importers of lobster, with the United States

<sup>10</sup> Food and Agricultural Organisation (2017), GlobeFish, United Nations.

being the largest lobster importer (51,200 tonnes) and Canada the third largest importer (31,300 tonnes).<sup>11</sup>

The majority of North American trade is internal (i.e. between the United States and Canada), but is characterised by significant and growing exports to Japan, European Union and particularly the PRC. The fact that American Clawed Lobster can be purchased from mainstream supermarket chains in Australia at approximately A\$15 per kilogram, an order of magnitude discount to locally produced lobster, is evidence of the global market reach of what is becoming a prolific product.

Trends in lobster imports in the United States and Canada are illustrated in Figure 2 below.

### **European Union remains a significant but plateauing Lobster market**

The European Union is the world's second largest importer of lobster, importing 33,400 tonnes in 2015.<sup>12</sup> Like the North American market, the majority of trade is internal trade in the main local product, being in this case, Norway Lobster. The European Union also imports relatively significant volumes of spiny lobster species. Further, Norway Lobster is not exported outside of the European Union in any significant volume, which is likely the result of seafood markets generally categorising the species as occupying a niche market of its own rather than coming under the broader lobster category.

However, European Union trade in both Norway Lobster and spiny lobster species has declined over the past five years. Volumes of American Clawed Lobster imported to the European Union have grown, primarily at the expense of imports of spiny lobster species.

### **The People's Republic of China is a rapidly expanding market for Lobster**

The PRC is the world's third largest market for lobster, importing 19,700 tonnes in 2015<sup>13</sup> and the fastest growing market for lobster. The main product imported into the PRC is American Clawed Lobster, as well as various species of spiny lobster. Like other international markets, American Clawed Lobster imports are displacing imports of spiny lobster species to the PRC.

### **Spiny Lobster is being displaced by American Clawed Lobster in all key markets**

As a result of declines in imports of spiny lobster species in all key markets, but particularly in the PRC, the United States, European Union and PRC are markets of equivalent size for spiny lobster species. Furthermore, in each of these cases, the decline in imports of spiny lobster have been offset by increased imports of American Clawed Lobster. This trend has more or less continued over the period 2010 to 2015.

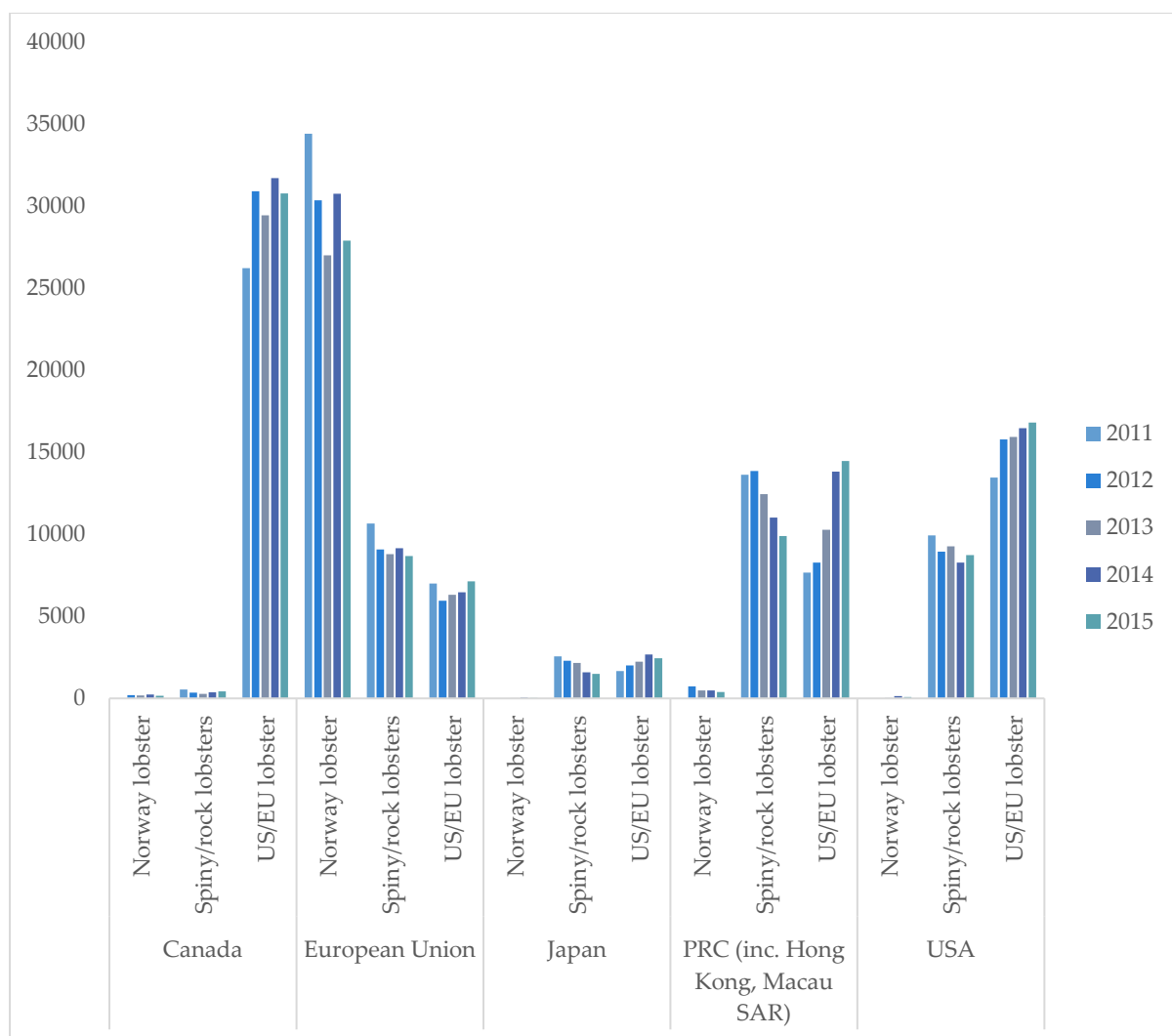
The following Figure 2 illustrates import trends in key international markets for lobster.

---

<sup>11</sup> Food and Agricultural Organisation (2017), GlobeFish, United Nations.

<sup>12</sup> Food and Agricultural Organisation (2017), GlobeFish, United Nations.

<sup>13</sup> Food and Agricultural Organisation (2017), GlobeFish, United Nations.



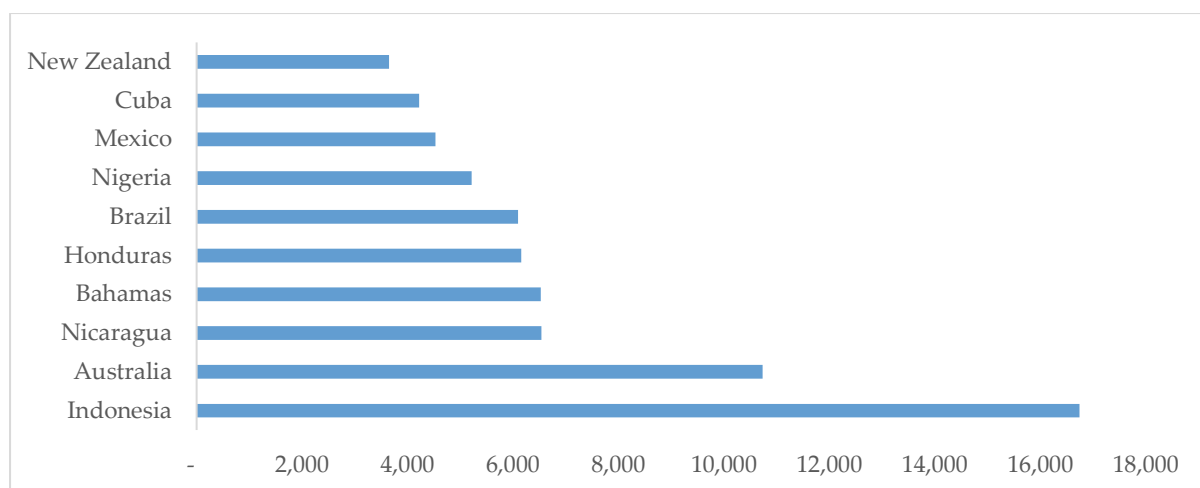
**FIGURE 2 – GLOBAL LOBSTER IMPORTS**

Overall, global demand for lobster is increasing, including in markets traditionally supplied by the Australian lobster industry. While in its key markets, Australian lobster species command much higher prices than most other species (premiums of up to seven times), in all instances, the vast majority of new demand is being met by increased imports of American Clawed Lobster. This overall trend, combined with the threat of supply competition from grow-out produced tropical spiny lobster species in South East Asia is a significant threat to the Australian Lobster industry's goal of achieving GVP of at least A\$1.3 billion within 10 years.

### 2.3. The Australian Lobster Industry

As summarised in Table 1 above, the Australian Lobster industry is comprised of wild-catch fisheries that revolve around four key species of spiny lobster. In 2014-15 Australia exported spiny lobster species with a total value of A\$691 million, rendering it the most valuable sector of the Australian seafood industry, as well as its most valuable export.<sup>14</sup> As illustrated in Figure 3 below, Australia is second only to Indonesia in production of spiny lobster species.

<sup>14</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra



**FIGURE 3 – GLOBAL SPINY LOBSTER PRODUCTION**

The Australian lobster industry can be described according to the following key dynamics:

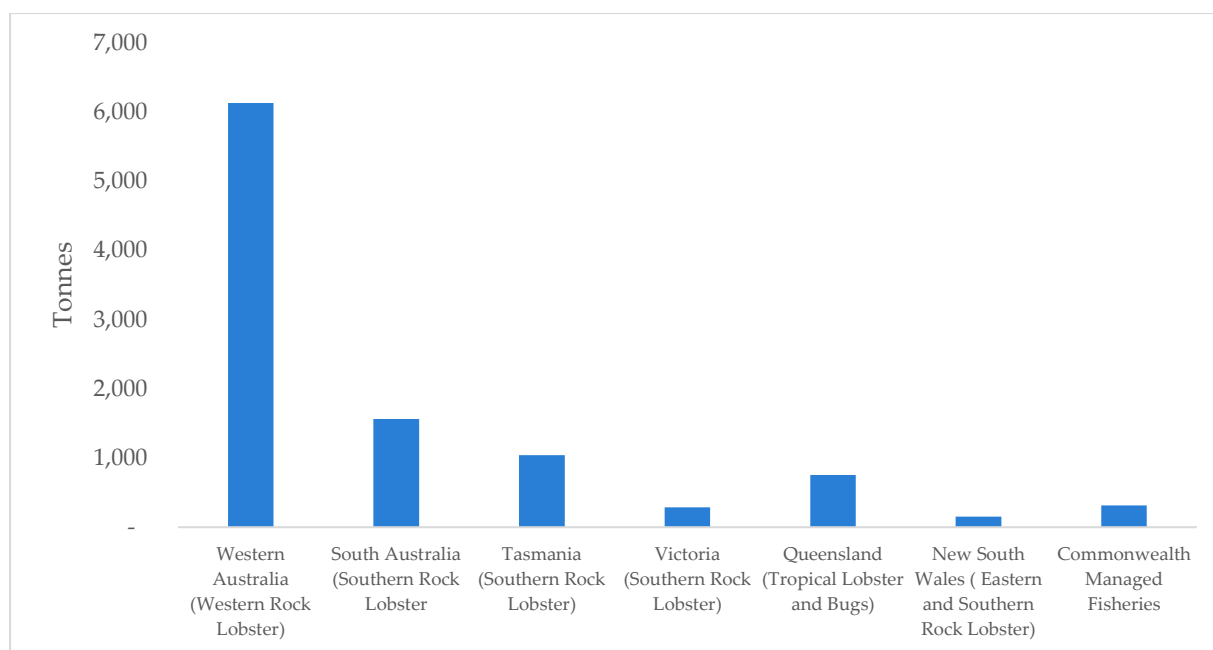
- The Western Australian industry dominates Australian lobster production;
- Industry prosperity is currently driven by a single product sold to Asian markets;
- The domestic lobster market is very small;
- There is price discrepancy across Australian lobster product; and
- There is limited coordination between the different sectors of the Australian lobster industry.

These dynamics are discussed in the following subsections.

### **Production Volume and Value is Dominated by the Western Australian Industry**

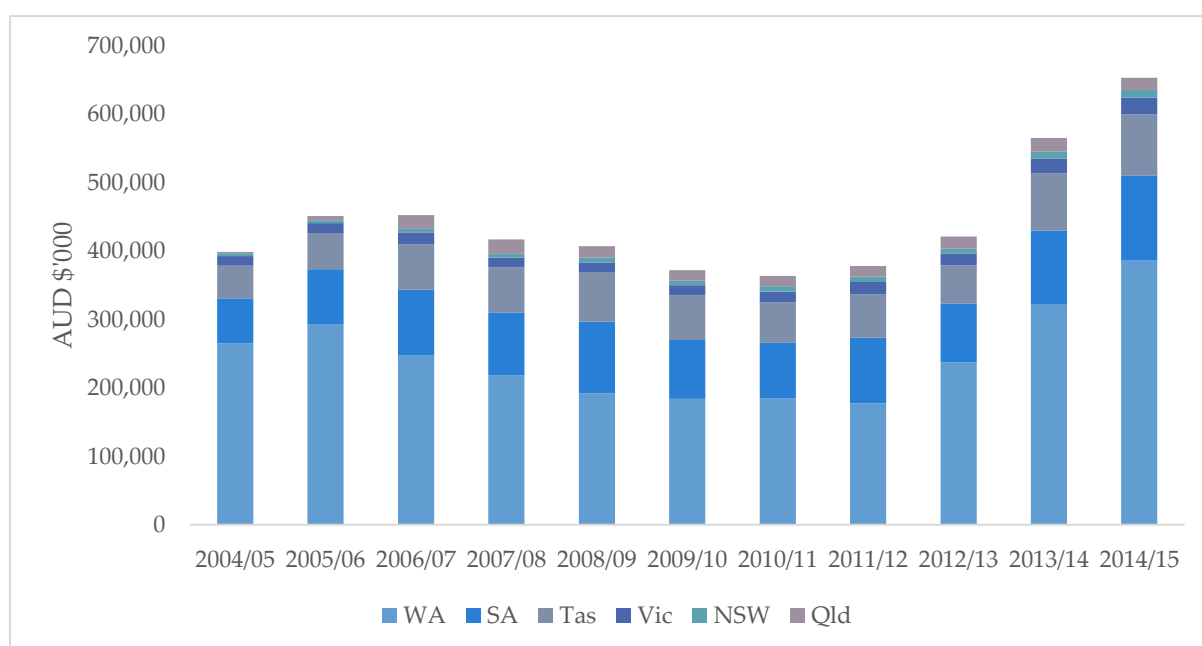
As illustrated in Figure 4<sup>15</sup> below, the production of Western Rock Lobster, a species endemic to Western Australia, accounts for the majority of the volume of Australian lobster production.

<sup>15</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra



**FIGURE 4 – AUSTRALIAN LOBSTER PRODUCTION (VOLUME) BY STATE (2014-15)**

As illustrated in Figure 5<sup>16</sup> below, despite typically trading at a discount to most other commercial species of Australian lobster (see Figure 10 below), the dominance of the Western Rock Lobster has translated into Western Australia producing the majority of industry value in almost all years for the past decade.



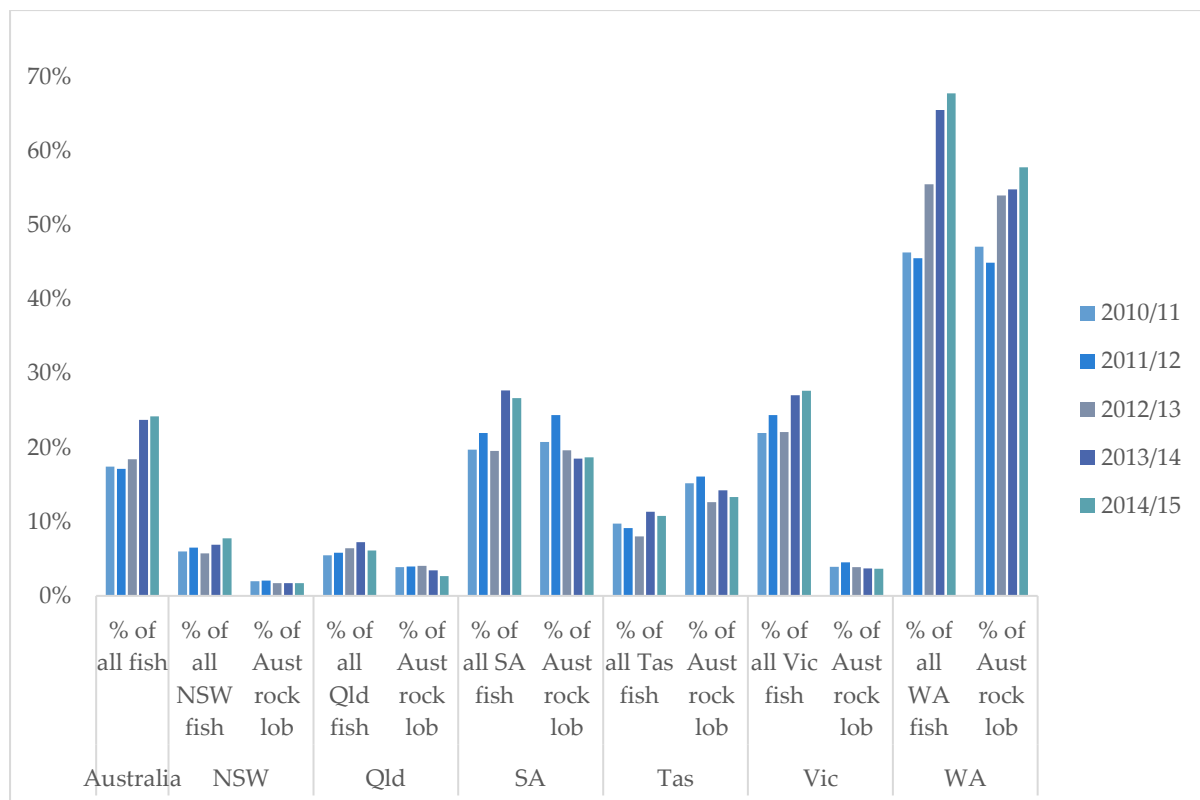
**FIGURE 5 – AUSTRALIAN LOBSTER PRODUCTION (VALUE) BY STATE (2004-05 TO 2014-15)**

It is important to note at this point that the Western Rock Lobster industry is critically important to the Western Australian fishing industry and a significant contributor to the economy more

<sup>16</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra



generally. As illustrated in Figure 6<sup>17</sup> below, the Western Rock Lobster industry accounts for almost 70 percent of the value of Western Australia seafood production, whereas the lobster fisheries in other states account for no more than 30 percent of the state's fishing industry GVP.



**FIGURE 6 – LOBSTER CATCH AS A PORTION OF TOTAL AUSTRALIAN JURISDICTIONAL FISHERIES**

**Prosperity is driven primarily by a single product sold to Asian markets**

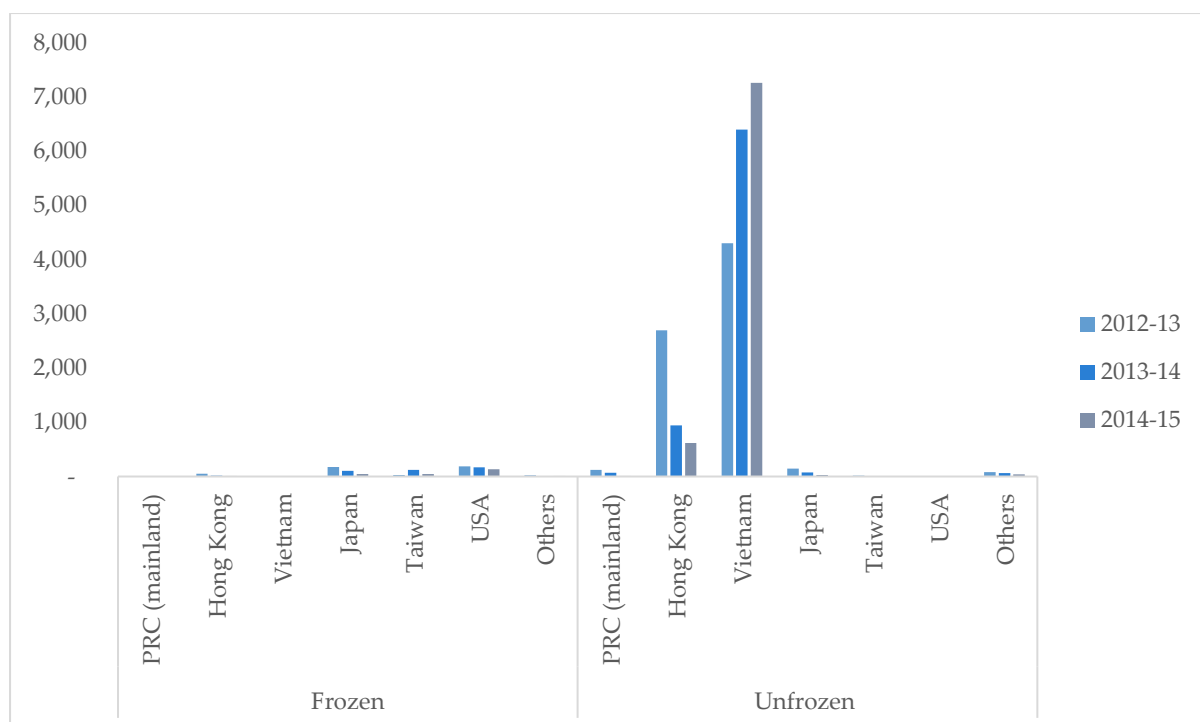
Vietnam, PRC, Japan and Singapore collectively account for 92 percent of all Australian seafood exports, the majority of which is lobster.

The vast majority of Australian lobster exports are chilled or live whole lobster shipped to distribution centres in Vietnam and Hong Kong SAR. Historically, Australian Lobster exports to the PRC were mainly distributed through Hong Kong SAR. However, Vietnam has been the main distribution centre in more recent times<sup>18</sup> and with the advent of the Australia-China Free Trade Agreement this dynamic can be expected to continue to evolve. Eastern Rock Lobster is generally not marketed to the PRC because of colour disadvantage in that market, and as a result higher domestic market prices for Eastern Rock Lobster. Figure 7<sup>19</sup> below illustrates the trend in Australian lobster exports to major destinations by product type.

<sup>17</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra

<sup>18</sup> Economic Research Associates (2015), *An Analysis of the Demand for Western Rock Lobster*, Department of Fisheries, Western Australian Government, Perth

<sup>19</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra

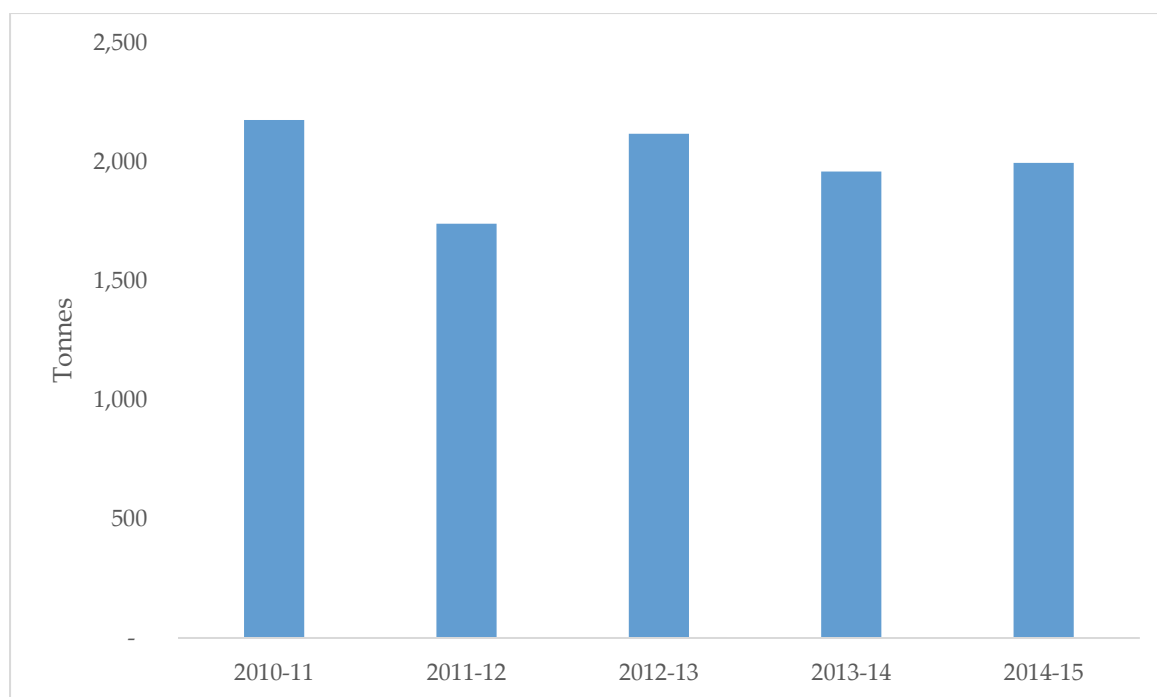


**FIGURE 7 – AUSTRALIAN LOBSTER EXPORT DESTINATIONS**

### Small Domestic Market

Approximately 80 percent of all Australian lobster production is exported, with the domestic market accounting for approximately 2,000 tonnes of consumption per annum. The trend in Australian domestic market lobster supply is illustrated in Figure 8<sup>20</sup> below.

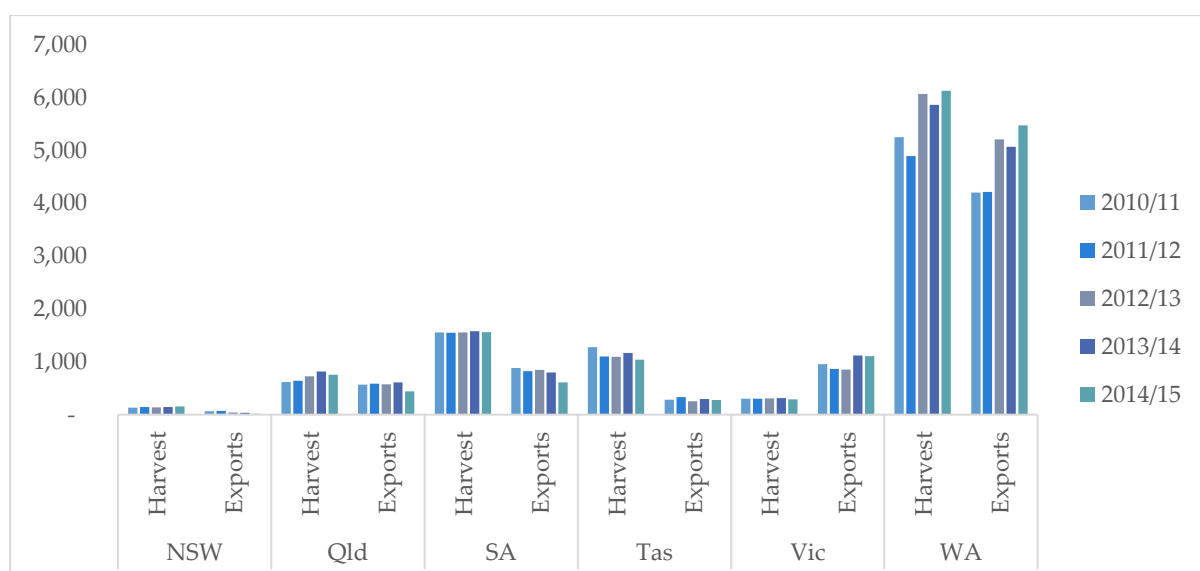
<sup>20</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra



**FIGURE 8 – AUSTRALIAN DOMESTIC LOBSTER MARKET SUPPLY (2010-11 TO 2014-15)**

While the rest of Australia exported an average of 65 percent of its 2014-15 lobster harvest, Western Australia exported approximately 90 percent of its lobster harvest, delivering approximately 650 tonnes to the domestic market.

Figure 9<sup>21</sup> below compares lobster harvests in each State with exports from that State. The fact that export volumes are greater than harvest volumes in New South Wales and Victoria is indicative of the concentration of eastern states seafood processing in Sydney and Melbourne.

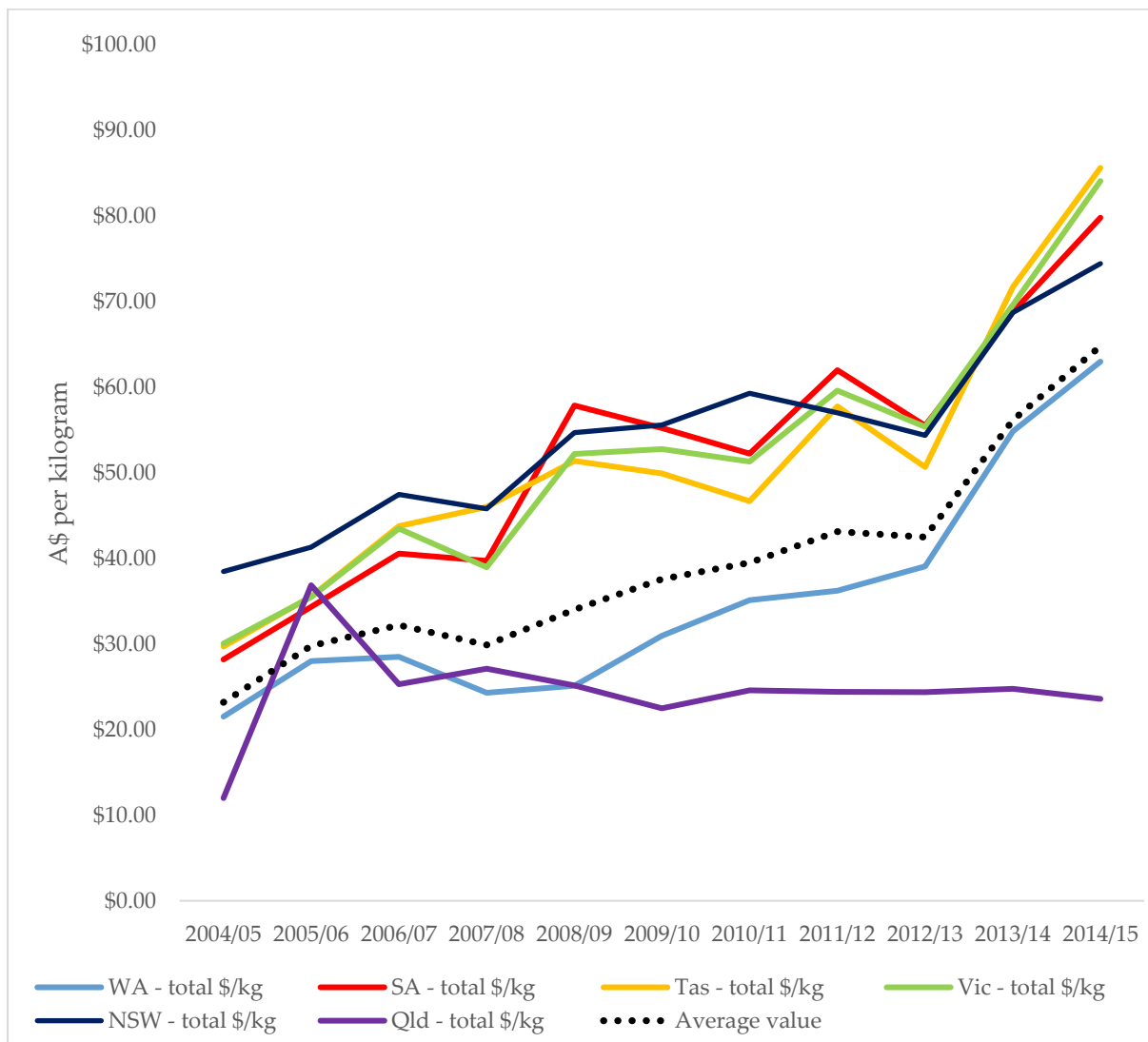


**FIGURE 9 – LOBSTER HARVEST AND EXPORTS BY STATE**

<sup>21</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra

### Price Discrepancy across Australian Production

The average landed price for Australian lobster has increased from approximately A\$20 per kilogram in 2004-05 to just over A\$60 per kilogram in 2014-15. The only State to defy the increasing trend in price is Queensland, whose production is comprised almost exclusively of tropical lobster species, a significant portion of which is not suitable for live export, thus reducing its value. Domestic prices for Southern Rock Lobster and Eastern Rock Lobster production in South Australia, Tasmania, Victoria and New South Wales are highly correlated, with price variance between those States rarely being more than a few dollars per kilogram. However, the Western Rock Lobster in Western Australia consistently trades domestically at A\$10 to A\$15 per kilogram discount to other Australian domestic lobster markets. The trend in domestic landed price of Australian lobster is illustrated in Figure 10<sup>22</sup> below.

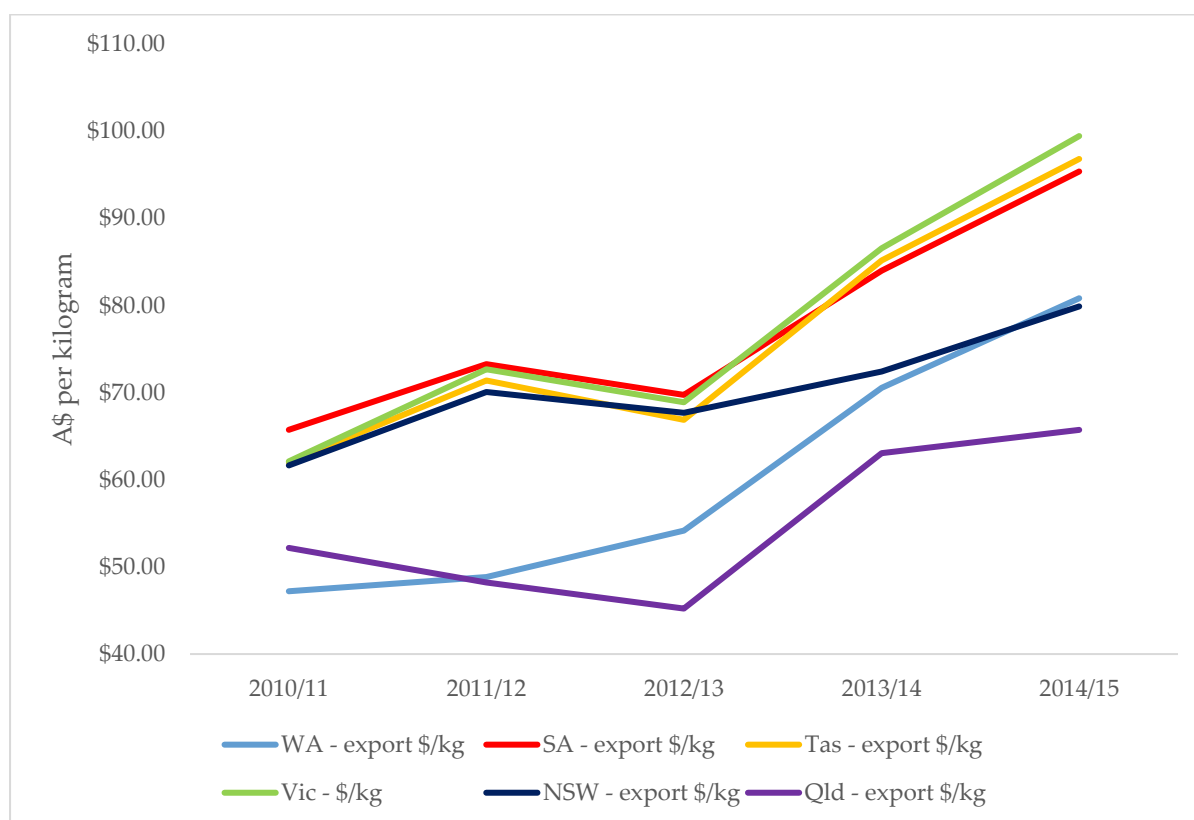


**FIGURE 10 – LANDED PRICE OF AUSTRALIAN LOBSTER PRODUCTION**

The pricing trends, correlations and discrepancies among Australian lobster product are replicated in export pricing, indicating that domestic prices are determined primarily by export market conditions. The main difference between the domestic and export market dynamics

<sup>22</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra

for Australian lobster is that Queensland production, while trading at discount to other Australian lobster product in export markets, follows the general trend of export market pricing for other Australian lobster. Figure 11<sup>23</sup> below illustrates the trend in export market pricing for Australian lobster.



**FIGURE 11 – AUSTRALIAN LOBSTER EXPORT PRICES**

A number of factors are understood to contribute to this price differentiation, including:

- Different levels of engagement with the market;
- The fact that Southern Rock Lobster (as well as New Zealand Southern Rock Lobster) have entered the PRC market earlier than Western Rock Lobster;
- Southern Rock Lobster demonstrates higher survival rates in the live export markets than Western Rock Lobster and attracts a colour premium in PRC markets; and
- Anecdotally, some provincial seafood markets in the PRC exhibit a strong and persistent preference for a particular species.

The strong product similarity between particularly Southern Rock Lobster and Western Rock Lobster indicates that more could be done to achieve higher prices for a larger volume of Australian lobster production, and more can likely be done to expand the domestic market for Australian lobster product.

<sup>23</sup> Australian Bureau of Agriculture and Resource Economics and Science (2016), *Australian Fisheries and Aquaculture Statistics – 2015*, Australian Government, Canberra

## 2.4. Leadership from the Western Australian Lobster Industry

A number of characteristics render the Western Australian lobster industry the leading sector of the national industry and motivates Western Australian lobster industry stakeholders to use this leadership to advance the interests of the Australian lobster industry, namely the Western Rock Lobster industry is:

- A key sector of the Australian seafood industry in its own right;
- A world-leader in fisheries resource management;
- A world-leader in Marine Stewardship Council (MSC) accreditation;
- A global leader in Lobster processing for premium markets;
- An important component of the Western Australian economy;
- A major driver of regional Western Australia;
- An important recreational fishery; and
- A basis for an emerging culinary tourism industry in the State, whereby a concentration of local processing and distribution can drive product differentiation.

### **A key sector of the Australian seafood industry**

As discussed in Section 2.3, the Western Australian lobster industry accounts for the vast majority of Australian lobster production and exports and is therefore a critical component of not only the Australian lobster industry, but by virtue of the lobster sectors predominance in the wider commercial fishing industry, the Australian seafood sector. This translates to the Western Australian lobster industry accounting for the majority of employment, exports, local, state and commonwealth government taxation and other payments and contributions to research and development made by the Australian lobster industry.

### **World Leader in Fishery Resource Management**

The Western Rock Lobster fishery was the first fishery in the world to be certified as ecologically sustainable by the Marine Stewardship Council (MSC), a status that it has maintained since it was certified in 2000. It is widely recognised as one of the most effectively managed fisheries in the world, a capability that is underpinned by science that informs a predictive model of puerulus recruitment ensuring that harvest is maintained at sustainable levels.

Recognition of this leadership in fisheries management not only ensures sustainable harvest, but serves to differentiate Australian lobster product in global seafood markets.

### **An important component of the Western Australian economy**

The Western Rock Lobster industry is an important sector of the Western Australian economy. At a macro-level the industry contributes over A\$500 million to Gross State Product (GSP), directly and indirectly employs more than 2,400 people across the fishery (1,700 people), seafood processing (480 people), boat building (190 people) and tourism (60 people) sectors with an estimated employment multiplier of 1.77.<sup>24</sup> Furthermore, the total capital value of the industry has been estimated at A\$5.2 billion.<sup>25</sup>

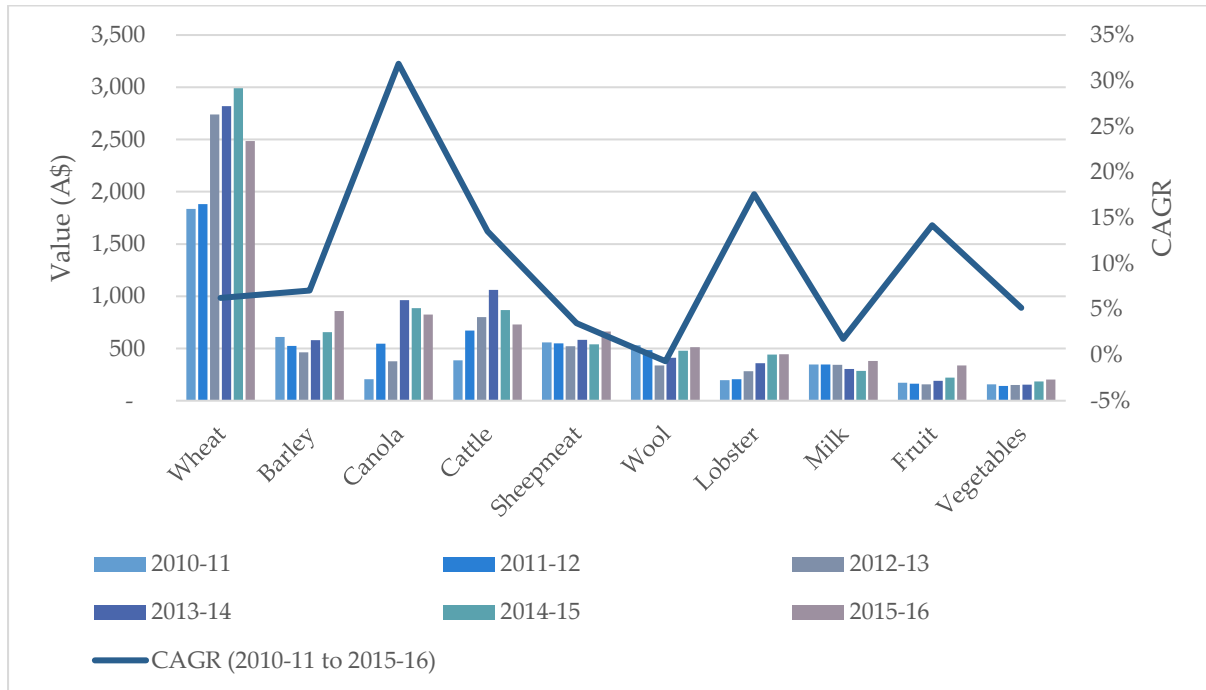
---

<sup>24</sup> Acil Allen Consulting (2017), *Economic Contribution of the Western Rock Lobster Industry*, Western Rock Lobster Council

<sup>25</sup> Reference (Acil Allen/Cooke?)

The industry accounts for approximately 75 percent of the \$29 million of licencing fees that the Western Australian commercial fishing sector pays to the Western Australian Government, the majority of which is allocated to the management of all Western Australian fisheries.

As illustrated in Figure 12<sup>26</sup> below, the Western Rock Lobster industry is Western Australia's 7<sup>th</sup> most valuable primary industry and is equivalent in size to the State's wool and milk production in terms of output. Most importantly, over the past five years the Western Rock Lobster industry has had the second highest growth rate of all major Western Australian primary industries.



**FIGURE 12 – VALUE OF PRODUCTION OF MAJOR WESTERN AUSTRALIAN PRIMARY INDUSTRIES**

**A major driver of regional Western Australia**

As summarised in Table 3<sup>27</sup> below, the Western Rock Lobster industry is a major component of the economic and social fabric of many Western Australian communities and coastal towns between Kalbarri and Busselton.

<sup>26</sup> Department of Agriculture and Food (2016), *Western Australia's Agrifood, Fibre and Forestry Industries Report*, Western Australian Government, Perth and Australian Bureau of Statistics (2017), *Value of Agricultural Commodities Produced*, Cat. 7503.0

<sup>27</sup> Acil Allen Consulting (2017), *Economic Contribution of the Western Rock Lobster Industry*, Western Rock Lobster Council

Location	Activity	Total Gross Value Add (A\$m)	Share of Gross Town Product (%)	Total Local Employment (FTE)
Kalbarri to Horrocks	Fishing fleet	8.7	13	33
Geraldton	Fishing fleet and processing	49.4	24	218
Dongara & Port Denison	Fishing fleet and retail	16.3	14	35
Leeman & Green Head	Fishing fleet	5.7	23	21
Jurien Bay	Fishing fleet	15.4	16	58
Cervantes	Fishing fleet and processing	24.5	75	138
Lancelin, Ledge Point & Two Rocks	Fishing fleet	15.6	32	58
Perth	Fishing fleet and processing	302	n.a.	1,272
Bunbury & Busselton	Fishing fleet	2.3	n.a.	9
TOTAL		439.9		1,842
<b>TOTAL REGIONAL COMMUNITIES</b>		<b>137.9</b>		<b>570</b>

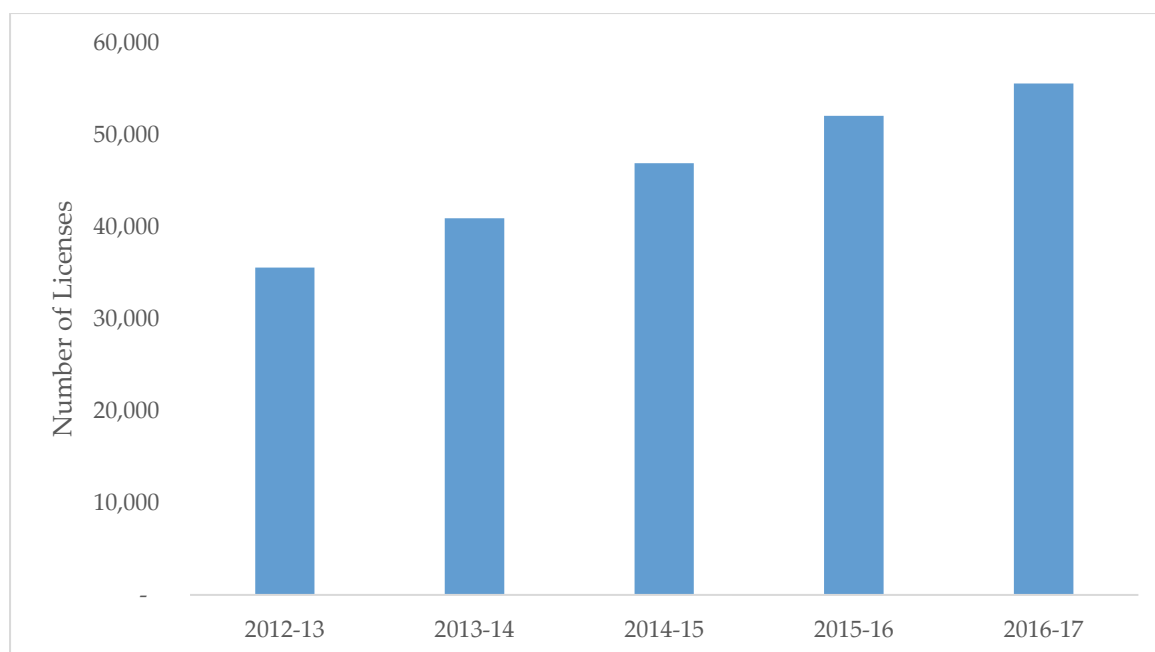
**TABLE 3 – CONTRIBUTION OF THE WESTERN ROCK LOBSTER INDUSTRY TO WESTERN AUSTRALIAN COASTAL COMMUNITIES**

### **An important recreational fishery**

The Western Rock Lobster, and to a lesser extent the Ornate Lobster, are also the focus of a significant recreational fishery in Western Australia, a pastime that is an important component of particularly coastal Western Australian culture. As illustrated in Figure 13<sup>28</sup> below, the number of lobster recreational fishing licenses on issue in Western Australia has increased by more than 50 percent from 2012-13, to approximately 55,500 licenses.

<sup>28</sup> Data provided by Recfish West



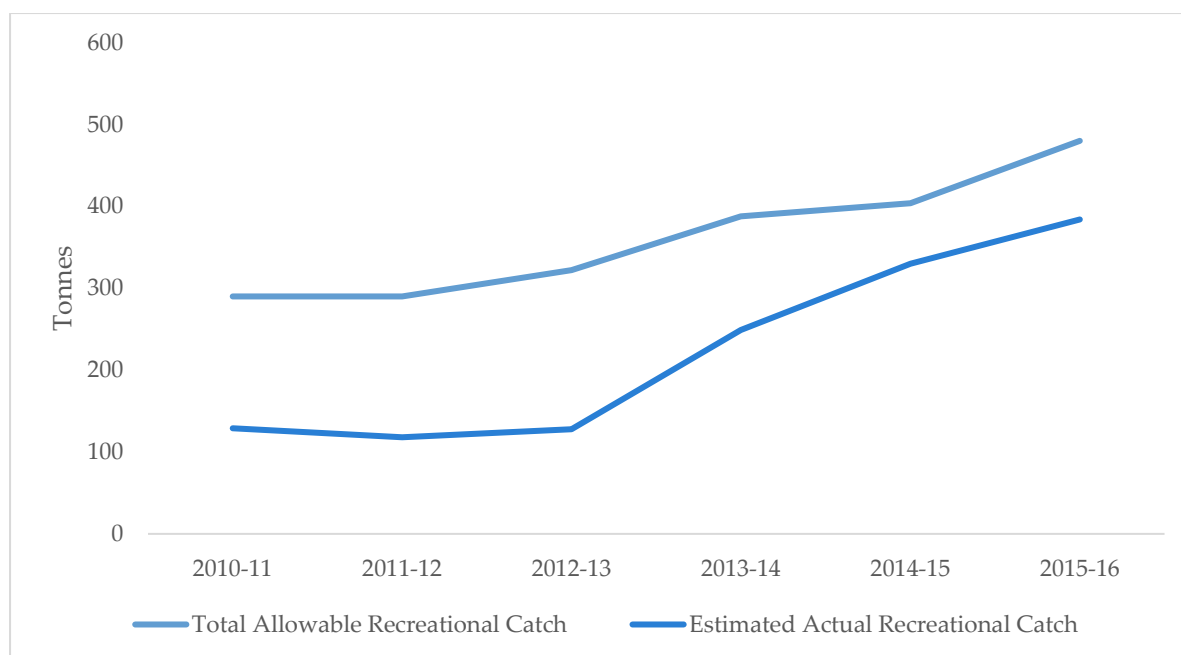


**FIGURE 13 - WESTERN AUSTRALIAN ROCK LOBSTER RECREATIONAL FISHING LICENSES ON ISSUE**

The increase in issued recreational licenses has responded to an increase in the Total Allowable Recreational Catch (TARC) for lobster in Western Australia. As illustrated in Figure 14<sup>29</sup> below, while the estimated<sup>30</sup> actual recreational Lobster catch in Western Australia is below the TARC, the gap has narrowed considerably in recent years from as low as 40 percent in 2012-13 to 80 percent currently. It is also worth noting that the TARC for lobster in Western Australia represents a volume that is equivalent to approximately 74 percent of current domestic market supply from the commercial sector.

<sup>29</sup> Data provided by Recfish West

<sup>30</sup> Recreational catch estimates are based on surveys of recreational license holders.



**FIGURE 14 – TOTAL ALLOWABLE RECREATIONAL LOBSTER CATCH AND ESTIMATED ACTUAL RECREATIONAL LOBSTER CATCH (VOLUME)**

Recreational lobster licensing fees paid to the Western Australian Government currently total approximately A\$1.5 million, representing 20 percent of total recreational fishing licensing fees and 4 percent of total commercial and recreational licensing fees.

### **Basis for Food Provenance and Culinary Tourism**

Even though the domestic market for Western Rock Lobster is relatively small, Western Rock Lobster is becoming a key element of Western Australia's seafood provenance that by virtue of significant participation in the recreational fishery, has some experiential component. Furthermore, as the Western Australian Government continues to pursue its policy designed to promote Western Australia as a tourism destination, Western Rock Lobster will naturally be a key component of any culinary tourism agenda.

## **2.5. Importance of other Sectors of the Australian Lobster Industry**

The discussion in Section 2.4 above articulates the importance of the Western Rock Lobster sector of the Australian lobster industry and while this is justified, it could be argued that by virtue of its origins and the industry's share of national lobster industry output, this Concept Study is currently skewed toward its interests.

The Southern Rock Lobster industry is the second largest contributor to Australian Lobster GVP and exports, and consistently attracts a price premium over Western Rock Lobster in domestic and export markets. Furthermore, it has expanded significantly in recent years, primarily as a result of a coordinated strategic effort by the sector to achieve this growth. There is also opportunity to expand production of tropical lobster species in Australia.

This Concept Study has focused on preliminary identification of new knowledge and technology needs that are likely to be common to all sectors of the Australian Lobster industry. Should it be determined that the Proposed Institute has merit, further effort will be required to optimally integrate the priority issues faced by all sectors of the Australian lobster industry.

## 2.6. Australian Lobster Research Capability is More Distributed

Western Australia hosts significant expertise in some areas of Lobster related research, particularly in the area of fisheries management and stock forecasting. However, considerable other important expertise is more widely distributed across the Nation, and in some cases this capability is fragmented.

For example, the development of technologies and methods for technically and economically viable aquaculture production of Lobster has been a target of considerable private and public research investment for decades. Research programs and expertise focused on tropical lobster species was initially undertaken at the Australian Institute of Marine Science in the mid-1990s, which was subsequently progressed by research organisations in New Zealand, and more recently pursued at the University of Tasmania. Privately funded projects pursuing the same objective with a range of species were undertaken by a private consortium in Western Australia over a similar timeframe.

The research effort at the University of Tasmania has culminated in an ARC and private industry funded effort to commercialise this research. The ARC Research Hub for Commercial Development of Rock Lobster Culture Systems at the University of Tasmania's Institute for Marine and Antarctic Studies is a formal collaboration formed with a A\$5 million grant from the Australian Research Council's (ARC) Industrial Transformation Research Program, as well as support from the Tasmanian Government. The collaboration brings together aquaculture scientists at the University of Tasmania, University of Auckland and University of Sunshine Coast, with an industry partner, Plastic Fabrications Group. The research program is focusing on mass larval rearing, water treatment systems, lobster physiology, broodstock genetics, animal health and nutrition to underpin closed-cycle aquaculture of Ornatus, Eastern Rock Lobster and Southern Rock Lobster, with the focus primarily on Ornatus.

To be optimally effective the Proposed Institute will need to either incorporate such research effort, or at the very least have formal links to such programs.

## 2.7. The Strategic Case for an Australasian Institute of Spiny Lobster Research

The analysis in the previous subsections strongly indicates that a *prima facie* case for investment in an industry needs targeted, coordinated research effort that is designed to facilitate growth of the Australian lobster industry is founded in the following:

- **Lobster is a Nationally important industry with significant opportunity for growth**  
As the highest value sector of Australia's seafood industry, lobster production is an important export-oriented primary industry for the Australian and Western Australian economy, with a significant regional capital and employment footprint. There is also significant scope to increase the sector's contribution to the Australian economy through expanded production, development of new international and domestic markets, new products and as an increasingly important element of culinary and potentially experiential tourism.
- **There are significant threats to the competitiveness of Australian lobster**  
Relatively high prices for Australian lobster exports in recent times have masked the fact that Australian lobster exports have lost market share in important growing international markets to production from other major and emerging producers. For so long as there is significant demand from large growing seafood markets such as the

PRC, this is a trend that is likely to continue. In particular, scale aquaculture production of tropical lobster species in relatively low-cost jurisdictions in South East Asia represents a specific significant threat to the competitiveness of Australian lobster.

- **Opportunities and threats can only be addressed through the development and commercialisation of new knowledge and technologies**

Capitalising on the opportunities and mitigating the risk presented by the threats articulated in this section will require the development of new knowledge and technologies and the commercial application by industry of that new knowledge, technology and products tailored to specific markets.

- **To be effective, there must be a concerted, strategically targeted and coordinated investment in developing that knowledge and those technologies**

Ensuring that research investment is coordinated and acutely targeted at development solutions to commercial opportunity and threats requires strong collaborative leadership from industry, the scientific profession and government.

As discussed in Section 4, the primary mechanism through which Australian lobster industry research is currently coordinated is not optimally addressing this need. The new knowledge and technology needs of the Australian lobster industry has reached a point where a mechanism that optimises this is required.

---

## 3. Contemporary Australian Lobster Industry Knowledge and Technology Needs

---

In order to address the opportunities and challenges discussed in Section 2 above, and thereby progress the Australian lobster industry toward its target of profitable GVP of A\$1.3 billion within 10 years, at the most fundamental level, the following must be achieved:

- The Australian lobster fishery resource must remain viable, and allow for optimal sustainable harvest of the natural resource;
- In order for the industry to remain profitable and for investment to occur, productivity of the fishing effort must continuously improve and the fishing sector's social license to operate must be maintained;
- In order to grow the industry and mitigate against single-market risk, fishers and processors must work together to create new products based on Australian lobster and re-enter or develop new domestic and international markets for those products;
- Systems and technologies that improve the productivity of seafood processing and transport must be developed and implemented
- To be able to supply large volumes of live and fresh product to markets out of harvest season, large-scale wild-harvest value adding mechanisms such as feedlots will likely need to be developed and commercialised;
- Even though it is likely that many Australian lobster fisheries are yet to reach maximum sustainable harvest, in order to substantially increase production volumes in the longer term, technically and economically viable aquaculture production systems are likely to be necessary; and
- The policy framework that governs the entire supply chain (including bilateral and multilateral trade agreements) must achieve the objectives of sustainable natural resource management, promoting public confidence that the fishery is managed sustainably and equitably, ensuring that industry is able to operate as effectively and productively as possible and ensuring that its products are competitive in the marketplace.

At a rudimentary level, it is envisaged that the Proposed Institute will focus on a research priorities agenda that is designed to address specific issues that underpin the achievement of these broader objectives. However, it must be stressed that should the Proposed Institute be deemed desirable and viable, a comprehensive research priorities plan for the Proposed Institute will be developed through a deeper understanding of the 'state-of-the-art' and an exhaustive consultative process involving end-user experts in industry, scientific sector and government.

The following subsections further illuminate the issues associated with the higher-level objectives developed thus far and an Indicative Research Agenda based on these issues is contained in Appendix 2.

### 3.1.1. Maintaining Optimal Sustainable Harvest

Scientific research undertaken by the Western Australian Department of Fisheries and other preeminent fisheries scientists at Western Australian universities, has resulted in the ability to predict Western Rock Lobster stocks with a high degree of accuracy using modelling based on knowledge pertaining to the relationship between puerulus recruitment and future harvestable fish stocks. This capability has underpinned the implementation of a natural resource management framework which is widely regarded as contemporary world-best-

practice. However, there remains potential opportunity to increase sustainable harvest and improve resource allocation decisions. Frameworks for achieving this can only be developed if there is adequately robust scientific knowledge to support the development and implementation of those frameworks. This applies to all lobster fisheries across Australia.

As with all of the world's fishery resources, the nature of the Australian lobster fishery will continually change, and as a result of anticipated changes to its ecology, its future viability be questioned by a range of stakeholders. Changes to water temperature and alkalinity that are the manifestation of global climate change, as well as other anthropogenic pressures such as increased recreational and tourism use of the marine ecology that supports the fishery and the fishery resource itself, coastal urban and industrial development, invasive species and pathogens, and increasing marine noise will all impact the fishery to varying degrees. At best this will alter the ecology that supports the fishery, potentially changing the nature of the sustainable resource and at worst, threaten the fishery's viability.

Effective management of both the fishery and investment by industry in the infrastructure and capability that extracts value from the fishery requires the ability to understand the fishery's likely resilience to these pressures and predict the cumulative impact of these pressures on the fishery. In the absence of scientific knowledge that facilitates this understanding, industry faces the prospect of reduced productivity that will result from potential crude application of the precautionary principle by regulators, a higher risk framework for capital investment decisions, sub-optimal environment for strategic and operational decision-making and/or reduced viability of the fishery.

The research undertaken in this theme is of relevance to industry and regulators and there is a clear link between research undertaken in this theme and the policy theme.

### **3.1.2. Improving Productivity in the Fishing Effort and Maintaining Social License to Operate**

Operators of Australian lobster fishing fleets provide the fundamental feedstock for value creation by the industry, and in the absence of competitive aquaculture and/or feedlot alternatives, are the only source of that feedstock. If the fishing sector of the industry is unduly constrained and/or unable to prosper, the Australian lobster industry cannot grow. Furthermore, it is the levies paid by lobster fishers that is the primary source of funding for current industry-oriented research (see Section 4) and therefore, irrespective of the fundamental importance of the fishing effort, it would be unreasonable for any industry-oriented research program to not have its main focus on the needs of the wild-catch fishing sector.

Economic and commercial research is required to understand what trends in innovation and future necessary investments in capital, in-market development and social license to operate will be necessary to improve productivity and profitability of Australian lobster fishing enterprises, as well as to determine the optimal business models and ownership structures for operating Australian lobster fishing enterprises in the future.

Productivity has implications for profitability (and therefore investment) as well as international competitiveness. Like all primary industry, to remain competitive in global markets, the Australian lobster industry must continually improve its productivity. Improving productivity requires achieving greater outputs from fewer inputs in the contemporary operating environment, which is defined by current regulatory frameworks and community expectations with respect to issues such environmental impact and safety. Furthermore, in a marketplace

(particularly premium seafood markets) that is increasingly values oriented, Occupational Health and Safety (OHS) and environmental credentials are key to ensuring market access and premium pricing. As such, factors such as these that are often considered counter-productive to achieving productivity growth, are in fact fundamental aspects of productivity.

Productivity improvements in the fishing effort will come from investments in new knowledge and technology creation, as well as in adaptation of technology from other industries in the areas of vessel design, improved catch targeting, automated pot and other cargo handling and sensor and digital based on-board information systems that inform fishing decisions and are integrated along the supply-chain and with the regulatory system.

Continuous improvement to OHS through higher levels of automation and best practice processes are important to ensuring access to a high quality workforce, as well as meeting societal and market expectations with respect to a safe and healthy workplace. Additionally, ensuring that fishing systems have increasingly minimal impact on the natural environment is essential to ensuring that social license to operate and market share is maintained.

### **3.1.3. New Australian Lobster Products and Markets**

Like most premium Australian seafood product, Australian lobster tends to attract its highest unit value when it is sold in its purest or close-to-purest form. This is why the vast majority of Australian lobster production is sold live, whole-fresh or fresh-tails to premium international seafood markets.

However, as supply of lobster from aquaculture production and other fisheries increases, and new seafood markets emerge, Australian production will come under increasing pressure to develop new lobster based products and markets. New products may involve value-adding to fresh and frozen product through the development of new cuts such as medallions, as well as packaged meals. It may also involve creating value from lobster parts other than the tail which are currently underutilised like lobster broth, ingredients in recipe dishes or bonded meat from legs and antennae to make lobster patties.

As more developing nations transition, demand for lobster in global markets is likely to increase. The Australian lobster industry is currently critically dependent on PRC seafood markets. In 2019, the Australia-China Free Trade Agreement will come into effect. It is important that the Australian industry is ready to capitalise on any opportunities that this might represent.

Currently, the majority of Australian lobster product is exported. The size and expanding nature of the Western Rock Lobster recreational fishery, as well major Australian retail chain stocking of American Clawed Lobster indicates that there is significant latent demand in the domestic market for lobster product. While it is unlikely that the domestic market will currently present the same value to the industry as export markets, in a future production environment characterised by greater supply competition, a developed domestic market may prove vitally important.

### **3.1.4. Downstream Productivity and Supply Chain Optimisation**

The sector of the Australian lobster industry that purchases catch from fishers, processes product and distributes product to international and domestic markets is critical for value creation. Therefore, it will be imperative that these processors have ownership of and participate in the research agenda that is established to guide the efforts of the Proposed Institute.

In Western Australia, this sector is highly concentrated with four processors competing for supply and distribution of Western Rock Lobster. The largest of these processors is the Geraldton Fisherman's Cooperative (GFC) which processes approximately 60 percent of the total catch, with the balance processed approximately equally between Indian Ocean Rock Lobster (Cervantes), the Kailis Brothers owned National Fisheries and Bluewave Seafood. The Lobster processing sector in the eastern states is characterised by a larger number of smaller processors and a few larger processors.

Research undertaken by the Proposed Institute must provide processors with the knowledge and tools they need to develop new products and access new markets, to meet ever changing customer expectations and to achieve productivity growth that ensures product is competitive and the sector remains profitable. This includes knowledge that can inform market responses to opportunities (and challenges) created by the Australia-China Free Trade Agreement when it comes into effect, as well as other current and future trade agreements to which Australia is a party.

Downstream from the fishing effort, research that supports the seamless integration of information systems along the supply chain, more efficient live export systems, product diversification and new market entry is required. This will be achieved by a research agenda that is deeply integrated with the new products and markets program (see Section 3.1.3) and which includes the development of new knowledge and technology designed to improve the productivity of lobster processing and domestic and international logistics. It will also require a more strategic approach to supply chain management than perhaps currently exists.

### **3.1.5. Profitable Lobster Aquaculture and Feedlots**

The potential escalation of global lobster production through the use of aquaculture and grow-out systems represents both a threat and opportunity for the Australian lobster industry. While, maximum sustainable harvest is yet to be reached in some Australian lobster species and quotas are often managed to optimise price, the capacity to increase supply and have supply flexibility that can respond to future market demand is potentially desirable.

The production of tropical lobster species from the sea-cage grow-out of harvested puerulus in South East Asia has been a driver of increased volumes of smaller tropical spiny lobster species in regional seafood markets in recent years. While this smaller warm-water product does not compete directly with Australia's premium wild-caught Western Rock Lobster, Southern Rock Lobster and Eastern Rock Lobster, it does have some effect on the market for Australian *Panulirus ornatus* production.

There are currently efforts underway to commercialise research at the University of Tasmania that has developed systems for closed lifecycle aquaculture production of *Panulirus ornatus*, and other tropical Lobster species native to Australian waters may also prove suitable for aquaculture production. However, as with most tropical aquaculture, it will likely prove difficult for Australian aquaculture production of tropical lobster species to be price competitive with the much lower cost structure of Asian aquaculture. However, Australia's reputation for high standards of food safety, for example, are potentially a basis for competitive advantage.

Aquaculture production of Southern Rock Lobster and particularly Western Rock Lobster is not likely to be feasible for some time. The protracted larval and grow-out cycles associated with these species render closed lifecycle aquaculture technically challenging and even if



technically achievable, the long production cycle inhibits economic returns and amplifies agricultural risk.

However, the development of effective feedlot systems for these species could potentially add significant value to the wild-harvest. The ability to retain a portion of the normal harvest in grow-out systems would allow:

- Meat yield from smaller lobsters to be optimised (for example, a single moult can increase meat yield by 20 percent);
- Fishers to retain 'whites' (recently moulted lobsters) and hold them until they become a marketable red in colour;
- The industry to guarantee specific customer product specifications with confidence; and
- Quality product to be marketed all-year-round.

The development and commercialisation of lobster feedlots requires new knowledge pertaining to the ability to identify animals optimally suited to grow-out, as well as nutrition and husbandry requirements, systems design, biology of moulting inhibiting hormones and animal health in order to optimise feedlot operations.

The focus of this subprogram is to develop the capability so that industry can use it as a tool to respond to future market conditions if necessary.

The ability to hold Australian commercial lobster species for extended periods in artificial environments will also assist in undertaking other research such as investigating the fishery's resistance to the various pressures identified in Section 3.1.1 above.

### **3.1.6. Policy for Growth**

As discussed previously in this Concept Paper, Australian lobster fisheries are widely regarded as exhibiting world's-best-practice sustainable natural resource management. This reputation bears well for the sustainability of the industry, marketability of its product and maintenance of its social license to operate. However, community expectations and what is considered world's-best-practice are continually evolving and the policy framework must be one that achieves both natural resource sustainability and optimal industry competitiveness. Regulation should not impose unnecessary productivity penalties on industry and its implementation should be cost effective. To this end, new knowledge is required that will allow regulation of the commercial sector to move toward eco-systems and risk based management and co-management of the resource.

Furthermore, as the recreational fishery continues to grow, more robust data on the extent of the recreational catch, extent of any potential non-compliance and intra-fishery issues such as pot theft and black-market for product will need to be established to ensure that recreational fishing remains viable, and allocation of the fishery resource among its users remains acceptable to all stakeholders. The recreational fishery itself is coming under increasing scrutiny from animal welfare groups and as such, it must have access to scientific knowledge to support its social license to operate.

### **3.1.7. International Issues**

While the focus of the Proposed Institute is to grow the Australian lobster industry, spiny lobster and lobster production generally is a global industry. Australian lobster competes with lobster

production from other nations, but also shares areas of mutual interest such as maintaining social license to operate. To ensure that the Australian industry benefits from research undertaken in other jurisdictions that is mutually beneficial to the industry, and that Australian lobster research is able to contribute to the global effort, it is envisaged that the Proposed Institute will seek out international linkages for research that is of mutual interest. A preliminary scope for international reach is yet to be established, but may include projects such as the review of global stocks that has recently been commissioned by the Western Rock Lobster Council

### **3.1.8. Preliminary Research Agenda**

Appendix 2 sets out a preliminary research agenda for the proposed institute. This preliminary research agenda is for indicative purposes only, and a detailed research plan will be developed based on a 'state-of-the-art' assessment, consultative end-user prioritisation process and expert input, should a decision to proceed to full planning for the Proposed Institute be made.

---

## 4. The Current Industry Investment in Research and Development and Implications for the Proposed Institute

---

A key consideration in assessing the case for the Proposed Institute is whether it is able to marshal a greater level of resources to fund and facilitate research and development targeted at developing solutions for the issues identified by the Australian lobster Industry than is currently the case.

The primary vehicle through which the Australian lobster industry currently invests in industry-oriented research and development is the Fisheries Research and Development Corporation (FRDC). The mechanism through which industry funds research via the FRDC is mainly indirect, whereby fishers pay a levy or fee to a State (or Territory) Government (typically administered by a Department of Primary Industry), an agreed portion of which is provided to the FRDC. Depending on specific and unique arrangements between a State and the FRDC, the agenda of a State's specific FRDC Research Advisory Committee (RAC)<sup>31</sup> and specific terms of any Industry Partnership Agreement (IPA)<sup>32</sup> that might exist between the FRDC and a particular sector of the industry, a portion of the industry levy or fee paid to the FRDC by the State is spent on research projects agreed between the FRDC and the industry sector. Through the FRDC, this amount is then matched with Commonwealth funds, providing an approximate 1:1 leverage at a project level.

### 4.1. Fisheries Research and Development Corporation

The Fisheries Research and Development Corporation (FRDC) is one of 15 Rural Research and Development Corporations, the principle mechanism through which the Australian Government and different sectors of primary production in Australia co-invest in research and development for industry and community benefits. Pursuant to Commonwealth legislation, Rural Research and Development Corporations collect levies from primary producers in the industry they represent, which are then matched by the Australian Government (from consolidated revenue) for investment in research and development (and in some cases market promotion) for that industry as determined by the Rural Research and Development Corporation, and within limits set by its legislation and an associated funding agreement with the Australian Government.

The fishing industry differs from the other primary industries that have Rural Research and Development Corporations in that the resource the fishing industry utilises is in a public space (as opposed to a farm environment where there are stronger tenure rights) and the resource

---

<sup>31</sup> A Research Advisory Committee (RAC) is a representative and expert-based committee that makes recommendations to the Board of the FRDC as to research project applications that should be supported. Each State and the Northern Territory has a RAC.

<sup>32</sup> Each major sector of the Australian seafood industry has an Industry Partnership Agreement (IPA) which are unique and specific to that sector. The purpose of the IPAs are to ensure a certain amount of FRDC funds are available to support research in key sectors. Committees of FRDC, industry and experts are formed under each IPA and those committees make recommendations to the Board of the FRDC as to research project applications that should be supported under an IPA.

is shared with other users. Reflecting this, the FRDC levy model is also, arguably necessarily, unique. In the case of other Rural Research and Development Corporations the Australian Government collects a compulsory levy from primary producers on behalf of the Rural Research and Development Corporation that it then matches and provides to the Rural Research and Development Corporation in accordance with specific provisions of the relevant legislation and funding agreement. Whereas, the FRDC is funded through agreements between it and the State or Territory Governments (which are variable between the States and Territories) that regulate a specific fishing industry based on compulsory or voluntary levies that are paid by the fishing industry in those States and Territories.

The Federal Government uniquely funds the FRDC via a two-stage process. Firstly, the FRDC receives the equivalent of 0.5 percent of Australian Fisheries GVP from the Federal Government. It then matches industry contributions up to 0.25 percent of industry GVP. Therefore the FRDC receives 1.0 percent of the GVP of any industry that contributes the maximum 0.25 percent of its GVP that the Federal Government is prepared to match. This is an important aspect of the FRDC model with respect to the Proposed Institute. Given the objective of the Proposed Institute is to grow GVP, under the current arrangements the success of the Proposed Institute in this regard, will result in a concomitant increase in resources for both lobster industry specific and fisheries research more generally.

The FRDC also uses Industry Partnership Agreements (IPA) to ensure that the research needs of the major sectors of the Australian fishing and aquaculture industry are met. An IPA is an agreement between the FRDC and a commercial fishing sector peak body, or in some cases individual companies, to manage a suite of sectoral research projects over a specified timeframe. IPAs exist for the main commercial fisheries in Australia, including the Western Rock Lobster and Southern Rock Lobster fisheries.

Under the IPA, funds allocated to IPA governed research may only fund projects that conform with the FRDC legislation and R&D priorities, and those priorities set out in the R&D plans for the relevant sector body. The FRDC's National Fishing and Aquaculture Research, Development and Extension Strategy<sup>33</sup> identifies the following objectives to be achieved by 2020:

- Fishing and aquaculture will continue to have improved performance in environmental sustainability;
- Fishing and aquaculture will be more resilient to social, environmental and economic change;
- Fishing and aquaculture businesses will be more productive and profitable;
- Recreational fishers will have improved opportunities for better fishing experience and will play a greater role in the stewardship of fisheries resources;
- More Indigenous people will derive benefit from fishing and aquaculture activities and will play a greater role in the stewardship of fisheries resources; and
- Information about the science and management of sustainability of fishing and aquaculture will be more accessible to the consumer and meet consumer's needs.

The amount of FRDC funds allocated under an IPA are firstly determined by the sector's share of national fishing and aquaculture GVP, and then discounted according to a prescribed percentage, with the unallocated amount being retained for general fisheries research and research specific to smaller fisheries that do not have IPAs, as determined by State Research Advisory Committees.

---

<sup>33</sup> Fisheries Research and Development Corporation (2015), *Research Development and Extension Plan*, Australian Government, Canberra

Irrespective of an IPA, a number of principles determine what the FRDC can invest in:

- The FRDC can only invest in research, development and extension (unlike some other Rural Research and Development Corporations it cannot invest in promotion);
- All RD&E investments must be in partnership, with good governance exhibited by all parties to that partnership;
- All RD&E must address an agreed strategic plan;
- FRDC aims to invest nationally where possible and makes sense to do so;
- RD&E investments should compromise a balance of high and low risk projects as well as a 'balanced portfolio' across the areas of environment, industry, communities, people and extension; and
- The FRDC cannot fund an organisation's core business, or advocacy activity.

## 4.2. Western Rock Lobster Industry Investment in Research and Development

Western Rock Lobster fishers pay the Western Australian Government a Resource Access License fee equivalent to 5.75 percent of the sector's GVP on a three year rolling average basis. This fee is charged by the State under powers afforded to it under the *Fish Resources Management Act 1994* (WA).

Last year, the amount paid by the Western Rock Lobster industry under this arrangement was \$22.1 million based on a three year rolling average GVP for the industry of approximately \$384.3 million. This is equivalent to 76.5 percent of the \$28.9 million total Resource Access License fee paid by the Western Australian commercial fishing industry and 60 percent of the total Resource Access License Fee paid by the commercial and recreational fishing sectors. It is worth noting that of the \$7.7 million of licensing fees paid by the recreational sector, Western Rock Lobster recreational licence fees account for 22.7 percent.

Under the current arrangement, the 5.75 percent levy paid to the Western Australian Government is allocated as summarised in Table 4 below.

<b>Recipient/Payee</b>	<b>Percentage of GVP</b>	<b>2016-17 Amount (based on 3-year GVP rolling average of A\$384.3m)</b>	<b>Application of Funds</b>
<b>Western Australian Resource Access License Fee Revenue</b>			
<b>Total receipts from commercial lobster fishers</b>	<b>5.750</b>	<b>\$22.1m</b>	
<b>Application of Western Australian Resource Access License Fee Funds</b>			
Western Australian Government	5.000	\$19.2m	Allocated at the Western Australian Government's discretion across consolidated revenue and DPRID for fisheries management and research.
Western Australian Fishing Industry Council	0.375	\$1.4m	WAFIC is allocated 0.5 percent of the total levy and it subsequently provides the Western Rock Lobster Council with 25 percent of that amount, with the balance used to part fund the operations of WAFIC
Western Rock Lobster Council	0.125	\$0.5m	Used to part fund the operations of the Western Rock Lobster Council
Fisheries Research and Development Corporation	0.250	\$1.0m	Voluntary contribution to the FRDC for research, development and extension.
<b>Total Allocation of Resource Access License Fee</b>	<b>5.750</b>	<b>\$21.1m</b>	

**TABLE 4 – DISTRIBUTION OF ROCK LOBSTER INDUSTRY LEVY**

The contribution made to the FRDC from the Resource Access Licence Fee is paid as one lump-sum, aggregating the collections from all fisheries operating under Western Australian Government's jurisdiction. As such, the approximate A\$1.0 million paid by the Western Rock Lobster industry is not provided to the FRDC specifically for Western Rock Lobster Research, but rather according to an agreement between the State and the FRDC. At its discretion, the FRDC then allocates a gross portion of its total Australian fishing industry contributions to the Western Rock Lobster industry based on Western Rock Lobsters contribution to total fishing industry GVP, but discounts this amount according to discount factors that are prescribed in the IPA between the Western Rock Lobster Council and the FRDC. In the three most recent years this discount has been 50 percent, increasing to 60 percent in 2017-18 and 70 percent in 2018-19, less an 8 percent administration fee that is deducted by the FRDC.

Table 5 below sets out an estimate as how the Western Rock Lobster sector's 0.25 percent of GVP research levy has contributed to funds available for Western Rock Lobster related research over the life of the existing Western Rock Lobster IPA.

	2014-15 (a) \$m	2015-16 (a) (\$m)	2016-17 (a) (\$m)	2017-18 (e) (\$m)	2018-19 (e) (\$m)	TOTAL (\$m)
Estimated Western Australian Fishing Industry GVP (3 year rolling average)	317.43	384.83	383.90	391.55	410.09	1,887.79
<b>Voluntary R&amp;D Levy (0.25 percent of GVP)</b>	<b>0.79</b>	<b>0.96</b>	<b>0.96</b>	<b>0.98</b>	<b>1.03</b>	<b>4.72</b>
WA Fisheries Western Rock Lobster Contribution	0.50	0.61	0.78	0.85	0.90	3.63
IPA Percentage	50%	50%	50%	60%	70%	
<b>Hypothecated IPA contribution</b>	<b>0.25</b>	<b>0.30</b>	<b>0.39</b>	<b>0.51</b>	<b>0.63</b>	<b>2.08</b>
FRDC Matching Funds	0.25	0.30	0.39	0.51	0.63	2.08
Less: FRDC Service Fee (8% of total research funds)	0.04	0.05	0.06	0.08	0.10	0.33
Additional Special Funds (Rock Lobster Post Harvest Subprogram)	0.16	-	-	-	-	-
<b>Total FRDC Western Rock Lobster Research Funds Available</b>	<b>0.62</b>	<b>0.56</b>	<b>0.71</b>	<b>0.94</b>	<b>1.16</b>	<b>3.99</b>

**TABLE 5 – ESTIMATED INDIRECT CONTRIBUTION OF THE WESTERN ROCK LOBSTER R&D LEVY TO FRDC FUNDS THAT ARE AVAILABLE FOR INVESTMENT UNDER THE WESTERN ROCK LOBSTER IPA**

Since 2014-15, the Western Rock Lobster industry has made a voluntary R&D contribution totalling \$3.6 million. Since 2010-11, projects funded under the Western Rock Lobster industry's IPA have had total FRDC expenditure of approximately \$1.2 million (see Section 4.4) and projects that have been initiated by the Western Rock Lobster Industry either by itself or in collaboration with the Western Australian Government (see Section 4.4) have had total FRDC expenditure of \$2.3 million. This would suggest that the Western Rock Lobster industry is not receiving an equitable return on the voluntary contribution made indirectly to the FRDC, and that a significant portion of the Western Rock Lobster industry's contribution is directed to other Australian fishing sector interests.

It is also worth noting that recent funding applications for the projects listed in Table 6 below, which are generally aligned with the high-level research themes discussed in Section 3 were not supported by the FRDC, despite being recommended by the Western Rock Lobster IPA management committee and approved by the Western Rock Lobster Council Board.

Program Application	Amount (A\$)
Communications	\$500,000
Understanding the Market for Western Rock Lobster	\$400,000
Digitising the Western Rock Lobster Industry	\$550,000
<b>TOTAL</b>	<b>\$1,450,000</b>

**TABLE 6 – RECENT WESTERN ROCK LOBSTER PROJECT FUNDING APPLICATIONS REJECTED BY THE FRDC**

### 4.3. Southern Rock Lobster Industry Investment in Research and Development

The Southern Rock Lobster industry operates in the fisheries management jurisdictions of South Australia, Tasmania and Victoria. Established in 2006, Southern Rock Lobster Ltd (a company limited by guarantee) is the national body responsible for industry research, development and extension for the Southern Rock Lobster fishing industry. In November 2010, Southern Rock Lobster Limited, Primary Industries and Resources South Australian (PIRSA), Department of Primary Industries Victoria (DPI-Vic) and Department of Primary Industries, Parks, Water and Environment Tasmania (DPIPWE) reached in-principle agreement to establish an IPA with the FRDC covering the national Southern Rock Lobster industry.

Even though specific detail of the Southern Rock Lobster FRDC IPA is not publicly available, it is clear from this analysis summarised in Section 4.4 that, despite the Southern Rock Lobster industry producing less GVP than the Western Rock Lobster industry, it has marshalled a much larger research budget and focused that on a more comprehensive research program that is more acutely aligned with its industry identified needs.

It is understood that Southern Rock Lobster has achieved this additional leverage through a number of mechanisms including a significant separate contribution by the Tasmanian Government to the FRDC (some of which was allocated to the Southern Rock Lobster IPA), the use of the former Seafood CRC to leverage investment and a more favourable IPA that sees 100 percent of the FRDC funds attributable to Southern Rock Lobster according to its share of national fishing and aquaculture industry GVP hypothecated to research governed under the Southern Rock Lobster IPA.

### 4.4. FRDC Investment in Australian Lobster Industry Research and Development

The key purpose of this section of the Concept Study is to provide a basis for assessing how effective the Proposed Institute model might be in marshalling resources for investment in research and development targeted at developing solutions for issues identified by the Australian lobster industry as opposed to the current primary mechanism. To achieve this an analysis of research projects deemed to be relevant<sup>34</sup> to the Australian Lobster industry that have been commenced with funding from the FRDC during the Period 2010-11 to 2017-18<sup>35</sup> has been undertaken.

This analysis is based on data provided to this study by the FRDC. In order to focus on the total amount committed and for ease of analysis, the modelling identifies new projects at their designated start date and assigns the full project value to that start date (in reality most projects are undertaken over multiple years with total expenditure apportioned over the project's life).

The analysis is contained in Appendix 3 and has been undertaken at two levels. In the first instance, Appendix 3 discusses FRDC investment in research that the FRDC has deemed relevant to the Australian lobster industry according to the various FRDC funding mechanisms, namely IPAs, RACs, Seafood CRC Program, and specific FRDC programs such as Tactical

---

<sup>34</sup> FRDC projects have been deemed to be relevant to the Australian Lobster Industry if a keyword search of the FRDC project database identifies the project.

<sup>35</sup> The data pertaining to the 2017-18 financial years is up to 31 January 2018



Research Fund, FRDC National Program, Incentive Fund, Response Research Fund, National Priorities Program and Climate Change Program. In the second instance, Appendix 3 discusses FRDC investment in research the FRDC has deemed relevant to the Australian lobster industry according to the Australian lobster industry stakeholder that initiated the research project. Stakeholder categories that have been used for this purpose are:

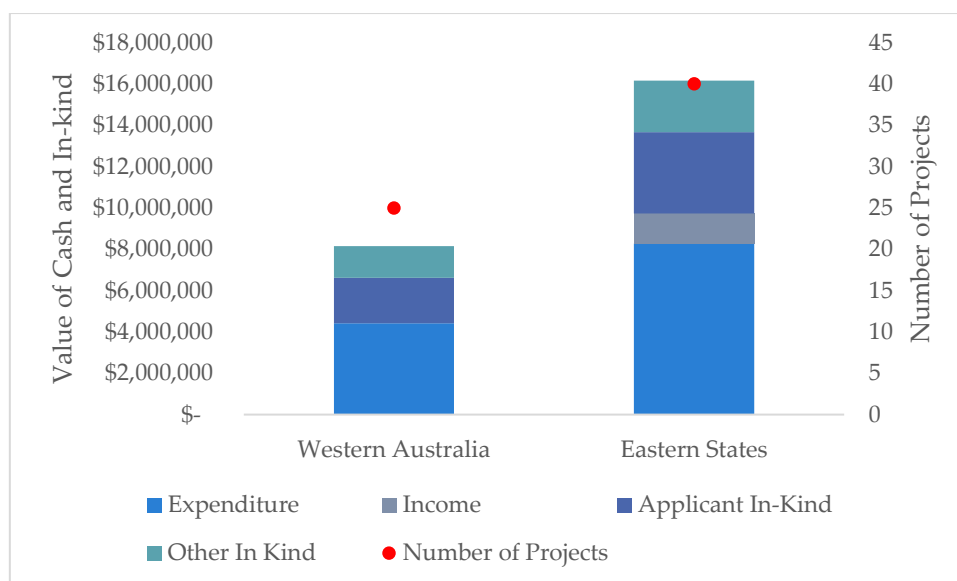
- The Australian lobster industry or recreational sector acting alone or in collaboration with another sector(s) of the Australian seafood industry;
- Other Australian seafood industry acting in the absence of explicit co-initiation with the Australian lobster industry or recreational sector;
- State Governments co-initiating with the Australian lobster industry or recreational sector;
- State Governments initiating without the explicit co-initiation of the Australian lobster industry or recreational sector; and
- Research organisations initiating without the explicit co-initiation of the Australian lobster industry or recreational sector.

It can be reasonably assumed that where the Australian lobster industry has been party to the initiation of a project, that project is in fact immediately relevant to the Australian lobster industry. Whereas in cases where the industry has not been party to the initiation of a project, that project's direct relevance is perhaps more questionable.

The analysis in Appendix 3 highlights that during the period 2010-11 to 2017-18:

- The FRDC invested, through its various mechanisms, a total of approximately A\$12.7 million across 65 research projects it deemed to be relevant to the Australian Lobster industry.
- While the in-kind leverage achieved from FRDC expenditure has been broadly equivalent across Western Australian and eastern states initiated Lobster research, eastern states initiated research has achieved total cash leverage of 17 percent, whereas Western Australian initiated research has not achieved any cash leverage from the FRDC expenditure.

The allocation of FRDC expenditure and the leverage achieved from that expenditure for Western Australian and eastern states initiated projects deemed by the FRDC to be relevant to the Australian lobster industry for the period 2010-11 to 2017-18 is summarised in Figure 15 below.



**FIGURE 15 – FRDC INVESTMENT AND LEVERAGE ATTAINED FOR PROJECTS DEEMED RELEVANT TO THE AUSTRALIAN LOBSTER INDUSTRY BY THE FRDC FOR THE PERIOD 2010-11 TO 2017-18**

#### 4.4.1. Key Observations – Funding According to FRDC Funding Mechanism

The analysis in Appendix 3 highlights that during the period 2010-11 to 2017-18:

- The FRDC funded a total of 34 projects with a total FRDC expenditure of approximately A\$7.0 million through the Southern Rock Lobster, Abalone Council of Australia and Western Rock Lobster IPAs. Projects initiated by eastern states interests (SRL and ACA) accounted for 71 percent of the projects and 82 percent of the FRDC expenditure on those projects. The eastern states industry achieved superior leverage from FRDC expenditure through their RAC.
- Through the Western Australian, Tasmanian, New South Wales and Victorian RACs and a RAC-like arrangement with the Torres Strait Regional Authority, the FRDC funded 15 research projects deemed relevant to the Australian lobster industry for a total FRDC expenditure of approximately \$3.2 million. Over half of these projects and almost 70 percent of the associated FRDC expenditure under these RACs is attributable to the Western Australian RAC.
- FRDC funded a total of 5 projects for a total expenditure of \$791,000 through the Seafood CRC mechanism. Three of these projects accounting for 80 percent of the total FRDC expenditure through this mechanism were initiated by the Southern Rock Lobster industry
- 11 projects with a total FRDC expenditure of approximately \$1.7 million were supported through other FRDC programs. Of these, 55 percent of the projects accounting for 59 percent of the FRDC expenditure were initiated from Western Australian lobster sector interests, with the balance from eastern states lobster sector interests.

#### 4.4.2. Key Observations – Funding According to Project Initiator

The analysis in Appendix 3 highlights that during the period 2010-11 to 2017-18:

- The vast majority (77 percent) of FRDC funds that have been committed to research projects deemed by the FRDC to be relevant to the Australian lobster industry, are by

virtue of the Australian Lobster industry being party to their initiation, indeed relevant to the Australian lobster industry.

- Where, almost 90 percent of the total FRDC expenditure associated with projects initiated from eastern states lobster interests were initiated by the industry either acting alone or in collaboration with another sector of the Australian seafood industry or a state government, only 54 percent of the funding associated with projects initiated by Western Australian lobster interest had been initiated by the lobster industry, and half of those were in collaboration with the Western Australian government.
- Only the Western Australian industry has had FRDC funded projects deemed relevant to the lobster industry initiated by other sectors of the industry without express collaboration from the lobster industry.
- Of the projects that were deemed relevant to the Australian lobster industry and initiated by government without express collaboration from the Australian lobster industry, approximately 56 percent of the projects associated with 61 percent of the total FRDC funding in this category were initiated by the Western Australian Government.

Section 4.2 highlights that the Western Rock Lobster industry makes a significant indirect contribution to the FRDC, the vast majority of which is directed to fund research for other Australian fishing sector interests. This is primarily a function of relatively lower hypothecation factors in the Western Rock Lobster IPA, a lower level of project proposals presented to the FRDC by the Western Rock Lobster industry and a significant number of the proposals that have been presented being deemed by the FRDC decision-making framework as either not viable for FRDC funding or not competitive.

#### **4.4.3. Implications for the Proposed Institute**

As discussed in the following subsections, the circumstances summarised in Sections 4.4.1 and 4.4.2 above present both a challenge and opportunity to the Proposed Institute.

##### **To be optimally effective, the Proposed Institute will likely need to be financially compelling to other stakeholders**

The eastern states lobster industry has been very effective in accessing FRDC resources for its identified research projects and substantially leveraging the FRDC expenditure from other cash and in-kind sources under the current arrangements. As such, it is probable that it would resist any alternative that reduced its access to these resources, unless a compelling alternative can be demonstrated.

To address this, the Proposed Institute would need to add value by firstly increasing the total amount of research resources available to the entire Australian lobster industry and secondly, by investing those resources more efficiently across industry identified research projects that are shared priorities across the sectors of the Australian lobster industry, as well as projects that are specific to each sector.

Further, the Western Australian Government has used its RAC and other FRDC programs to support substantial Lobster industry related research for its purposes. It is likely that unless the Western Australian Government's lobster and other fisheries research activities can be maintained or enhanced through the Proposed Institute, it will also likely resist any change that reduces its access to these resources.

## **There is an opportunity to marshal greater resources**

The Proposed Institute presents three opportunities to marshal greater research resources for the Australian lobster industry.

Firstly, full hypothecation under the Western Rock Lobster IPA would result in a greater base resource that could be shared across identified priority projects in which the wider Australian lobster industry has a common interest under the Proposed Institute model. For example, a 100 percent hypothecation factor in 2016-17 under the Western Rock Lobster IPA would have resulted in an additional \$0.4 million.

Secondly, if the Proposed Institute facilitates the ability of all sectors of Australian lobster interests to achieve industry best practice (or even average practice) with respect to leveraging FRDC funds additional resources could be realised. For example, Table 7 below summarises the additional resources that would have been marshalled over the period 2010-11 to 2017-18 under IPAs and RACs if those sectors that did not achieve best practice leverage had, and if those sectors that did not achieve at least average leverage had. According to this analysis an additional resource of between \$1.1 million (at minimum average leverage) and \$3.7 million at best practice leverage would have been realised. This analysis does not include other FRDC funding mechanisms.

FRDC Mechanism	FRDC Expenditure	Total Resources at Actual Leverage	Total Resources at Best Practice Leverage	Total Resources at a Minimum of Average Leverage
Industry Partnership Agreements				
Western Rock Lobster	\$1.2	\$2.1	\$2.5	\$2.3
Southern Rock Lobster	\$5.2	\$10.5	\$10.5	\$10.5
Australian Abalone Council	\$0.6	\$0.6	\$1.2	\$1.1
Subtotal	\$7.0	\$13.2	\$14.2	\$13.9
Regional Advisory Committees				
Western Australia	\$2.2	\$4.1	\$6.3	\$4.5
New South Wales	\$0.1	\$0.3	\$0.4	\$0.3
Victoria	\$0.3	\$0.6	\$0.8	\$0.6
Tasmania	\$0.4	\$1.3	\$1.3	\$1.3
Torres Strait Regional Authority	\$0.2	\$0.3	\$0.6	\$0.4
Subtotal	\$3.2	\$6.6	\$9.3	\$7.0
<b>TOTAL</b>	<b>\$10.8</b>	<b>\$19.8</b>	<b>\$23.5</b>	<b>\$20.9</b>

**TABLE 7 – ADDITIONAL RESOURCES AVAILABLE AT BEST PRACTICE AND AVERAGE LEVERAGE FROM FRDC INVESTMENT (2010-11 TO 2017-18)**

Finally, the Proposed Institute is intended to seek out much wider sources of potential leverage than that which is typical under the current FRDC mechanism (see Section 6.3).

While additional modelling that is beyond the scope of this Concept Study is required to validate the notion, it is likely that the Proposed Institute will garner greater research resources for the Australian Lobster industry than is currently the case.

---

## 5. Structural Considerations for the Proposed Institute

---

### 5.1. Case Precedence

Multi-sector, multidisciplinary, mission-oriented formal research collaborations such as that being proposed are common-place in most developed nations (including Australia) and in primary industries generally. Appendix 4 summarises a number of such institutions that operate in various commercial seafood industries globally.

Nationally, the Cooperative Research Centres program was developed specifically to give effect to such programs and some ARC Centres of Excellence operate as multi-sector collaborations. In Western Australia, collaborations have been established outside of these Commonwealth frameworks with financial support from the State in key sectors including:

- Western Australian Energy Research Alliance;
- Minerals Research Institute of Western Australia;
- Western Australian Biodiversity Science Institute; and
- Western Australian Marine Science Institution.

### 5.2. Type of Institution

Multi-sector, multidisciplinary, mission-oriented formal research can adopt a number of structural forms. At one end of the spectrum there are institutions that are entirely virtual, comprised typically of a governance structure that allocates resources to research providers on a competitive basis pursuant to specific project research agreements that tightly align research projects, their management and outputs to a very specific institute research plan. At the other end of the spectrum, there are research institutes that are entirely self-contained, owning their own research infrastructure and directly employing the scientific expertise that is managed to deliver against the research institutes research plan.

Most multi-sector, multi-disciplinary, mission-oriented formal research collaborations adopt a form that is a hybrid of these extremes. The Proposed Institute will also likely be a hybrid structure. Because Lobster research capability in Australia is distributed across a number of institutions, it is likely that a primary function of the Proposed Institute will be to coordinate the Lobster research activity of those institutions to achieve common goals articulated by an agreed strategic research plan. However, there is also a desire to have dedicated physical research infrastructure to support programs such as feedlot and aquaculture research, as well as to integrate the activities of the Proposed Institute into local tourism and cuisine, helping to enhance Lobster's role in establishing Australian seafood provenance.

The precise nature of the Proposed Institution cannot be established until a research agenda has been finalised and the necessary Lobster research capability identified and engaged.

### 5.3. Potential Participants and Stakeholders in the Proposed Institute

The structure that the Proposed Institute adopts will in part be determined by the number and nature of entities that participate in the Proposed Institute, as well as how they participate. As

identified in Table 8 below participants and key stakeholders in the Proposed Institute can be broadly classified as:

- End users of the research outputs of the proposed institute
- Scientific research providers
- Fisheries and other research funders
- Other stakeholders

Stakeholder	Description
<b>End Users of Research Outputs</b>	
Australian Lobster Fishers	Owners and operators of wild-catch fishing vessels in the Western Rock Lobster, Southern Rock Lobster, Eastern Rock Lobster and Tropical Rock Lobster sectors of the Australian Lobster industry.
Australian Lobster Processors	Seafood processing businesses located in Western Australia, South Australia, Victoria, Tasmania, New South Wales and Queensland that acquire raw product from Lobster fishers, value-add to that product and/or distribute to domestic and international markets.
Australian Fishery Regulators	Departments of Primary Industry with jurisdiction over state fisheries in Western Australia, South Australia, Victoria, Tasmania, New South Wales and Queensland, as well as the Australian Fisheries Management Authority.
Lobster Industry Advocates	Western Rock Lobster Council and Southern Rock Lobster Limited
Recreational Lobster Sector Advocates	Recfish West, Recfish SA, VRFish and Tasmanian Association for Recreational Fishing
<b>Scientific Research Providers</b>	
Universities	Australian universities with Lobster related research interests such as Curtin University, Murdoch University, University of Western Australia, University of Tasmania and James Cook University
Australian Institute of Marine Science	Tropical marine aquaculture and fisheries research capability.
CSIRO	Marine aquaculture and fisheries research capability.
SARDI	Marine aquaculture and fisheries research capability.
<b>Research Funders</b>	
Fisheries Research and Development Corporation	Rural Research Development Corporation with principal responsibility for managing Commonwealth investment in industry-oriented fisheries and aquaculture research (see Section 4.1)
Commonwealth Department of Agriculture and Water Resources	Commonwealth agency responsible for regulation and development of primary industries and administrator of several agribusiness research and development grants programs (see Section 6.3)
State Departments of Primary Industry	State agencies responsible for regulation and development of fisheries and aquaculture within state jurisdiction, with some states offering grant programs.

Stakeholder	Description
<b>Other Stakeholders</b>	
International Seafood Distributors and Retailers	International seafood distributors and retailers form key components of the Australian Lobster supply chain and as such will have interests in any aspects of research undertaken by the Proposed Institute that potentially impacts that supply chain.
International Lobster Research Programs	The Proposed Institute will seek to collaborate with the global Lobster industry and international Lobster research providers on global issues of mutual interest.
Community	The community has a stake in the Proposed Institute to ensure that it provides a scientific basis that underpins the protection of the community's interest in the industry and the fishery.

**TABLE 8 – POTENTIAL PARTICIPANTS AND STAKEHOLDERS IN THE PROPOSED INSTITUTE**

It should also be noted that the Western Australian Marine Science Institute (WAMSI) currently has a proposal with the Western Australian Government, that if funded would see it become an overarching coordination mechanism for research that is undertaken in the State's interest pursuant to the priorities identified in the Western Australian Blueprint for Marine Science 2050<sup>36</sup>. Subject to the outcomes of WAMSI's proposal and finalisation of the research agenda, funding arrangements and structure of the Proposed Institute, potential benefits and drawbacks associated with different potential relationships between the Proposed Institute and WAMSI should be explored.

## 5.4. Western Australian Infrastructure Options

Should the Proposed Institute be 'headquartered' in Western Australia, it is likely that it will incorporate office infrastructure and some aquaculture oriented research infrastructure. While much of it is dated, there is currently significant excess capacity of aquaculture oriented research infrastructure in Western Australia.<sup>37</sup> This capacity is summarised in the following subsections, and is distributed across the Perth metropolitan area, and some regional locations. The Proposed Institute could potentially operate a 'node-style' program across multiple facilities including in Geraldton.

### 5.4.1. Australian Centre for Applied Aquaculture Research

Formerly known as the Aquaculture Development Unit, the Australian Centre for Applied Aquaculture Research (ACAAR) was established in 1993 with a charter to assist in the development of the marine aquaculture industry in Western Australia. ACAAR is viewed as a critically important piece of industry infrastructure by the Western Australian aquaculture industry and proponents of restocking of recreational species, is highly regarded and used (to a limited extent) by national aquaculture operators, and is held in high esteem by the national and international aquaculture research sector. Since 1994, ACAAR has undertaken exclusively,

<sup>36</sup> Australian Venture Consultants (2016), *Blueprint for Marine Science 2050*, Western Australian Marine Science Institution.

<sup>37</sup> Australian Venture Consultants (2016), *State Aquaculture Research, Training and Service Delivery Capabilities: A Review of Research, Training and Service Delivery Capacity Operated by TAFE Colleges and Department of Fisheries*, Department of Training and Workforce Development and Department of Fisheries, Western Australian Government, Perth



or participated in, over 100 aquaculture and aquaculture related advisory, applied research and fish stock supply projects for industry and government clients. The total value of these projects is approximately A\$7.25 million.<sup>38</sup>

Table 9 below summarise aquaculture systems at ACAAR.

Item	Quantity
2,000 square metres of enclosed area reticulated with air and water	
Saltwater bores supplying seawater at 25L/sec	2
Hatchery laboratories, aquaria and live food culture rooms	?
Controlled environment (photo-therm) rooms	3
8 X 5 tonne larviculture arrays with heating capacity	2
10 tonne tank research array	14
200 litre tank research array	20
1 tonne live fish transport system with computer monitoring and life support	6
High density rotifer RAS within a dedicated controlled environment room	1
42 tonne broodstock tank facilities	2
30 tonne broodstock tank facilities	3
Dedicated broodstock transport trailer	1

**TABLE 9 - ESTIMATED CAPITAL INVESTMENT IN ACAAR**

The facilities listed in Table 9 above are housed in 80 year old buildings constructed from timber and corrugated iron that are listed on the Western Australian State Heritage Register. While this does not impact on the operations of ACAAR, it presents a significant ongoing maintenance challenge and presents challenges to any substantial modification.

Generally speaking, the life expectancy of most aquaculture systems is approximately 30 years. Many of the aquaculture systems at ACAAR have been operating for approximately 20 years and as such, maintenance and biosecurity issues are becoming more frequent and problematic.

In light of ACAAR's importance to the aquaculture industry and its degrading systems, the State Government is preparing to relocate ACAAR to a new, purpose built facility. This would leave the existing facility as an option for the Proposed Institute. However, the investment needed to bring systems up to an acceptable standard, and potential water quality issues associated with the absence of an ocean-intake would need to be the subject of a detailed

<sup>38</sup> Australian Venture Consultants (2016), *State Aquaculture Research, Training and Service Delivery Capabilities: A Review of Research, Training and Service Delivery Capacity Operated by TAFE Colleges and Department of Fisheries*, Department of Training and Workforce Development and Department of Fisheries, Western Australian Government, Perth

economic and technical feasibility study once an investable case for the Proposed Institute has been established.

#### **5.4.2. Batavia Coast Marine Institute**

The Batavia Coast Marine Institute (BCMI) is a marine research and training facility that was constructed in the mid-2000s on coastal land in Geraldton and is operated by Centre Regional TAFE. The BCMI facility hosts a number of research assets that may prove useful to the Proposed Institute, including laboratories, larvae culturing systems, broodstock holding systems, hatchery and grow-out systems all of which are supported by a seawater intake and seawater pumping facility.<sup>39</sup> Much of this infrastructure had been relatively underutilised in recent years, but is now being used by the Mid West Yellowtail Kingfish aquaculture project.

The BCMI is potentially attractive from the perspective of being in close proximity to a major concentration of the Lobster fishing and processing sectors. However, locating capacity in regional centres, always faces the challenge of higher cost structure and attracting critical mass of talented staff.

#### **5.4.3. Waterman's Fishery Research Centre**

The Indian Ocean Marine Research Centre (IOMRC) involves the co-location of four of the largest providers of marine science in Western Australia (Australian Institute of Marine Science, CSIRO, Fisheries WA and University of Western Australia) in purpose built facilities at the University of Western Australia Crawley Campus and the Western Australian Government marine laboratories at Waterman's Bay.

The aquaculture oriented facilities at Waterman's Bay (including the ocean intake) have been recently refurbished and there is currently excess capacity.

#### **5.4.4. Fisheries WA Hillary's Research Centre**

The Western Australian Department of Primary Industries and Regional Development's Hillary's Fisheries Research facility is a 400 square metre workspace with seawater provided directly by an ocean intake system. The facility is currently configured as a mollusc hatchery facility supporting investigations into a saucer scallop restocking research project. Table 10<sup>40</sup> below summarises the aquaculture related research facilities operated by the Department of Fisheries at its main research centre located in Hillary's, Western Australia.

---

<sup>39</sup> Australian Venture Consultants (2016), *State Aquaculture Research, Training and Service Delivery Capabilities: A Review of Research, Training and Service Delivery Capacity Operated by TAFE Colleges and Department of Fisheries*, Department of Training and Workforce Development and Department of Fisheries, Western Australian Government, Perth

<sup>40</sup> Australian Venture Consultants (2016), *State Aquaculture Research, Training and Service Delivery Capabilities: A Review of Research, Training and Service Delivery Capacity Operated by TAFE Colleges and Department of Fisheries*, Department of Training and Workforce Development and Department of Fisheries, Western Australian Government, Perth

Equipment	Description
Seawater intake system	Ocean intake system with capacity of 70,000L/hr
Mollusc broodstock tanks	10 X 400lt, 2 X 5,000lt, 24 X 200lt, 3 X 2,000lt and 1 X 20,000lt
Larval rearing tanks	24 X 270lt, 12 X 1,000lt, 8 X 200lt
Micro-algal production	Two algae laboratories, stock culture and upscale room
Supporting laboratories	Cold storage, feed preparation laboratory, AQIS approved quarantine facility

**TABLE 10 – DEPARTMENT OF FISHERIES RESEARCH DIVISION – AQUACULTURE RESEARCH FACILITIES**

Subject to current and planned usage, this facility could also potentially be leased to provide aquaculture oriented infrastructure for the Proposed Institute.

## 5.5. Operating Budget and Legal Structure

### 5.5.1. Operating Budget

Until the precise scope of research activity that will be undertaken by the Proposed Institute, the structure that it will adopt and the nature of its participants has been established, it is not possible to determine an operating budget with any degree of precision. This activity will be the subject of a business case, should the Proposed Institute be progressed further.

However, case precedence suggests that any formalised research collaboration that is based on an institute model tends to incur an annual administrative expense of between \$500,000 and A\$1.0 million, at a minimum. Administrative costs would be expected to escalate considerably under a structure whereby the Proposed Institute is operating infrastructure and directly employing research expertise.

### 5.5.2. Legal Structure

There are various legal structure options that the Proposed Institute could adopt including incorporated or unincorporated joint venture. If incorporated, the benefits and drawbacks of a private or public company or company limited by guarantee structure will need to be considered. Again, the preferred legal structure will not be evident until other structural aspects of the Proposed Institute have been determined.

---

## 6. Resourcing Options for the Proposed Institute

---

There are a number of options that can be considered with respect to resourcing the Proposed Institute, including:

- Making a compelling case to the FRDC to optimise leverage of FRDC matching funds from industry contributions;
- Implementation of an additional levy on industry;
- Accessing other Commonwealth programs for additional leverage;
- Reallocating or redirecting existing Western Australian Government lobster research funding;
- Potential allocation of a portion of the 5.0 percent levy that is paid to the Western Australian Government by the industry; and
- Ensuring projects supported by the Proposed Institute optimise in-kind contributions from industry and research provider partners.

The likely accessibility and effectiveness of these different resourcing options will depend on the nature of the research agenda and structure of the Proposed Institute that is ultimately adopted.

### 6.1. Improved Leverage from Existing Contributions

As discussed in Sections 4.4.1 and 4.4.2, while the Southern Rock Lobster industry manages to considerably leverage its FRDC investment, the FRDC investment from the Western Rock Lobster industry is considerably under-leveraged. As discussed in Section 4.4.3 the Proposed Institute will seek to substantially increase overall industry leverage from FRDC resources.

It should also be noted that if the Proposed Institute is successful, any levy based on industry GVP will see the contribution to research increase. A future decision will need to be made as to whether increases should accrue to research, or contributions should be capped.

### 6.2. Additional Levy

Another option for resourcing the Proposed Institute is to charge a separate levy on the industry. This might be additional to the industries existing contribution to research, or in State's where the research contribution is voluntary it might replace the existing levy. Given the cross-supply chain focus of the Proposed Institute, consideration should be given to if and how any such levy might apply to businesses downstream to the fishing effort.

Commercial Western Rock Lobster fishers currently pay a fee of \$300 per licence that is additional to the Resource Access Licence fee discussed in Section 4.2. This additional fee raises an amount of approximately A\$180,000 that is allocated to the Western Rock Lobster Council to support its operations. While this sets a precedent for such additional charges, resistance to an additional charge for research may be encountered on the basis that a contribution is already being made through the Resource Access Licence fee.

### 6.3. Other Sources of Leverage

There are a number of other Commonwealth Government grant and funding programs that could potentially be accessed by the Proposed Institute at an institute, program or project level in order to leverage the industry investment and other external funding sources. These programs are summarised in Table 11 below.

Program	Description
Rural Research and Development for Profit	Rural Research and Development for Profit is A\$180.5 million program operating over eight years until 2022. Its objective is to generate knowledge, technology, products and processes that benefit primary producers, strengthen pathways to extend the results of research and establishing and fostering industry and research collaborations. Applications must be led by a Rural Research and Development Corporation such as the FRDC in collaboration with researchers, funding agencies, universities, producer groups and private sector. This program is administered by the Commonwealth Department of Agriculture and Water Resources.
Innovation Grants	Innovation Grants are grants ranging from A\$250,000 to A\$1.5 million that are available to farmers, fishers, groups and businesses to develop and implement tools that lead to sustainable practices, reduce costs and build productivity. This program is administered by the Commonwealth Department of Agriculture and Water Resources.
Regional Food Producers Innovation and Productivity Program	Regional Food Producers Innovation and Productivity Program is a four year, A\$35 million program, with A\$10 million quarantined specifically for the seafood industry. Under the program, matched-funding grants are available for food and seafood businesses to under projects based on the design and implementation of new technologies, production or processing techniques, adoption of food production or processing technologies developed overseas or innovative redesign of existing production and processing lines to improve efficiencies and productivity. This program is administered by the Commonwealth Department of Agriculture and Water Resources.
Food Innovation Australia Ltd	Food Innovation Australia Ltd (FIAL) was established by the Federal Government to help the food and agribusiness industry grow. FIAL acts as a knowledge hub for the industry and agribusiness and food markets, assists organisations in the sector to build capabilities and facilitates inter-industry and market networks.
AUSTRADE	A successful application by the Proposed Institute to AUSTRADE resulting in the Proposed Institute becoming a AUSTRADE Approve Body would allow the Proposed Institute access to AUSTRADE Export Market Development Grants that could potentially be used to fund market related research.
Departments of Primary Industry	<p>In the event that the Proposed Institute performs some of the fisheries research that is currently undertaken by Departments of Primary Industry, a portion of levies and fees paid to the Departments of Primary Industry by the commercial and recreational Lobster sectors could be invested in the Proposed Institute.</p> <p>Additionally, if part of the Proposed Institute's activities are undertaken in regional Western Australia, Royalties for Regions and its related programs may also be viable sources of funding.</p>
Australian Research Council Centre of Excellence	ARC Centres of Excellence are prestigious foci of expertise through which high-quality researchers maintain and develop Australia's international standing in research areas of national priority. These are significant multi-sector collaborations between research organisations, government and industry.
Australian Research Council Linkage Projects	The Linkage Projects scheme promotes national, and international, collaboration and research partnerships between key stakeholders in research and innovation including higher education institutions, government, business, industry and end-users. Projects must be

Program	Description
Australian Research Council Industrial Transformation Research Program	<p>undertaken to acquire new knowledge and involve risk or innovation. The Linkage Projects scheme provides project funding of \$50,000 to \$300,000 per year for two to five years on a matched-funding basis. This program is administered by the Australian Research Council.</p> <p>The Industrial Transformation Research Program seeks to engage Australia's best researchers in issues facing the new industrial economies and training the future workforce. Food and agribusiness is one of the current industrial transformation priorities and the program provides funding of A\$500,000 to A\$1.0 million per annum for three to five years to support the activities of collaborations designed to achieve this objective. This program is administered by the Australian Research Council.</p>
Cooperative Research Centre Program	<p>The Cooperative Research Centres (CRC) Program supports industry-led collaborations between industry, researchers and the community. The program aims to improve the competitiveness, productivity and sustainability of Australian industries, foster high quality research to solve industry identified problems and encourage and facilitate SME participation in collaborative research. Funding is provided on a matching basis for programs of up to 10 years in duration. This program is administered by the Commonwealth Department of Industry, Innovation and Science.</p>
Cooperative Research Centres Projects Grants	<p>This program (sometimes referred to as CRC-lite provides grant funds on a matching basis for smaller, project oriented collaborations between industry, research and community sectors to develop new technologies, products and services. Successful collaboration applicants must have at least two Australian industry organisations (including at least one SME) and one Australian research organisation. This program is administered by the Commonwealth Department of Industry, Innovation and Science.</p>

**TABLE 11 – OTHER POTENTIAL SOURCES OF LOBSTER RESEARCH INVESTMENT LEVERAGE**

## 6.4. Optimisation of In-kind Support

Any cash investment that has been marshalled to support the Proposed Institute or its research agenda can also be substantially leveraged by accessing in-kind resources from participants and partners in the form of infrastructure and human resources.

## 6.5. Optimising Utilisation of Research Students

At a research project level optimising the use of PhD and other research students in research activities can prove a very cost effective way of producing research outcomes.

---

## 7. Governance Considerations for the Proposed Institute

---

As with structural considerations, a governance charter for the Proposed Institute cannot be established until research priorities planning, operating model, participation and resourcing is adequately identified and articulated. However, there is increasing evidence that strong and effective governance systems are one of, if not the most important factor in the success of a mission-oriented collaborative research institute. This notion is further reinforced by the fact that demonstrable good governance of research programs is typically a condition precedent for attracting external research funding from government programs and industry sources alike.

This section 7 discusses key governance concepts and principles that should be considered in the development of a governance charter for the Proposed Institute.

### 7.1. Governance and Research Organisations

Governance refers to the rules, practices, structures and processes through which an organisation is directed and controlled, or in other words, the systems and processes that guide the collective decision-making of the organisation.<sup>41</sup> The design of any governance framework should seek to:

- Optimise the performance of the organisation;
- Provide members of and stakeholders in the organisation with an assurance as to the integrity and effectiveness of the organisation;
- Enhance the organisation's reputation through the accountability of its governing committee(s) and the transparency of its decision-making processes;
- Understand and manage the organisation's risks; and
- Evaluate the effectiveness of the organisation's performance against its objectives.

In an incorporated entity all company directors have a duty under the *Corporations Act 2001* (Cth) and common law to ensure good governance is maintained. In any unincorporated organisation, those who have been entrusted with the responsibility to make decisions have a similar obligation by virtue of the fiduciary duty they owe various stakeholders in that organisation under common law.

To be optimally affective in achieving these objectives, a governance framework must be tailored for the specific governance context facing the organisation for which that framework is designed. The following Figure 16 below summarises key factors that determine an organisation's governance context.

---

<sup>41</sup> Stoker, G. (2004), 'Designing Institutions for Governance in Complex Environments: Normative Rational Choice and Cultural Institutional Theories Explored and Contrasted', *Economic and Social Research Council Fellowship*, Paper No 1

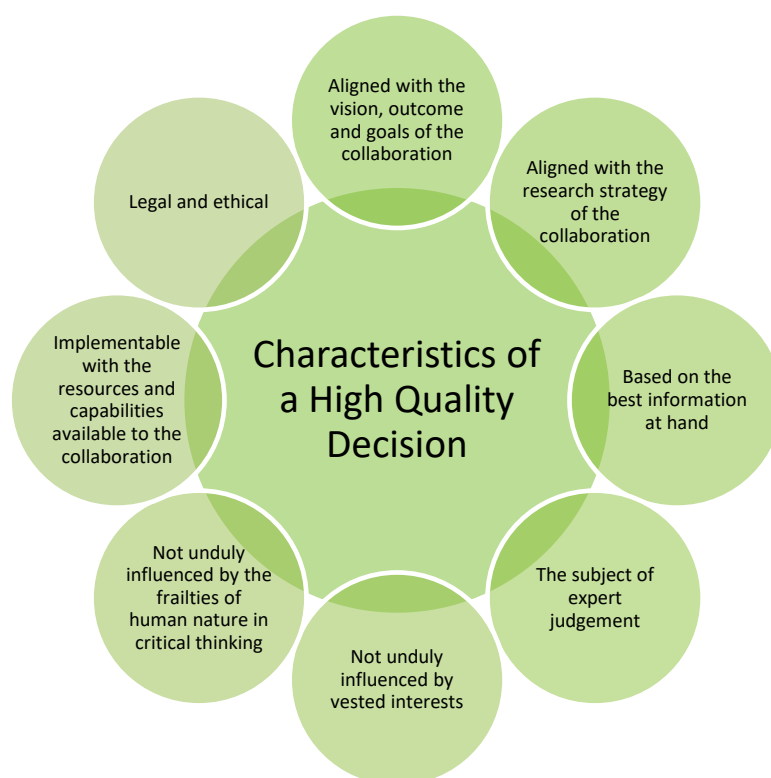


**FIGURE 16 – KEY FACTORS DEFINING THE GOVERNANCE CONTEXT OF AN ORGANISATION**

Good governance structures encourage organisations to create value and provide accountability and control systems commensurate with the risks involved.<sup>42</sup> Essentially, good governance should ensure that decisions that are made by decision-making bodies in the organisation are decisions of high quality and would be judged by an informed reasonable person to be a high quality decision, both now and upon reflection in the future. Figure 17 below summarises the key characteristics of a high-quality decision in the context of a multi-sector, multi-disciplinary, mission-oriented collaborative research institute.

<sup>42</sup> ASX Corporate Governance Council (2003), Principles of Good Corporate Governance and Best Practice Recommendations, Australian Stock Exchange, Sydney





**FIGURE 17 – CHARACTERISTICS OF A HIGH QUALITY DECISION**

## 7.2. The Cooperative Research Centre Experience

*'Good governance adds significant strategic value to the CRC and enables it to maximise its opportunities and accomplish its objectives, delivering benefits to its participants and to Australia. Making good governance a priority from the outset helps ensure that, through entrepreneurialism, innovation, development and exploration, CRCs create value in their organisation and provide accountability and control systems commensurate with the risks involved.'*

CRC Governance Guide

Largely as a result of the Australian Government's Cooperative Research Centre (CRC) Program, the Australian research sector has now had considerable experience with establishing governance frameworks for mission-oriented research organisations. Particularly in the case of institutions that involve collaborations, the system of governance pertaining to the collaboration is often attributed to

playing a major part in the success or otherwise of a collaboration. The reality is that all such structures have governance challenges, and it is the detail of the governance relationships where the problems typically arise and the ability of those charged with governance to navigate these problems that determines success.

The CRC Association recommends an approach to establishing governance frameworks for CRCs that is founded in the Australian Stock Exchange (ASX) principles for best practice governance, and adapted for the purposes of providing a basis of design for a governance framework for a CRC.<sup>43</sup> These principles are as follows:

<sup>43</sup> Anderson, K. and Sciascia, R. (2008), *Cooperative Research Centre Governance Guide*, Hynes Legal

- Lay solid foundations for management and oversight;
- Structure the board to add-value;
- Promote ethical and responsible decision-making;
- Safeguard integrity in financial reporting;
- Make timely and balanced disclosure;
- Respect the rights of shareholders or participants;
- Recognise and manage risk; and
- Remunerate fairly and responsibly.

The framework works by proposing a series of subordinate considerations under each of the principles. Consistent with the notion that a governance system must be tailored to its governance context, the approach to using the framework is that if the answer to a subordinate consideration is not 'Yes', then there should be a credible explanation as to why, in the organisations specific governance context, it is not. The key principles and the subordinate considerations are detailed in Appendix 3.

### 7.3. Preliminary Governance Context of the Proposed Institute

While key aspects of the Proposed Institute that will determine the governance context are as yet to be established, it is possible to identify some basic elements of the likely context. Table 12 below, summarises some basic strategic settings that are likely to frame the governance context of the Proposed Institute.

Strategic Parameter	Preliminary Setting
Vision	To facilitate investment in and execution of high quality end-user scientific research that is designed to provide the Australian Lobster industry with the tools and knowledge it needs to achieve a profitable GVP of A\$1.0 billion by 2028.
Purpose	<p>Determine the knowledge and technology priorities of Australian Lobster fishers, processors, regulators and recreational sector that must be addressed to increase the value of profitable production from the industry.</p> <p>Deliver optimal research project value and outcomes by coordinating multi-disciplinary, cross institutional research projects that optimise capability and whose intended outcomes are acutely aligned with the end-users of those outcomes.</p> <p>Optimise the quantum of research funds that can be invested in this projects by leveraging industry investment against a range of other relevant funding sources.</p> <p>Ensure that the outcomes of managed research are in a form that are easily accessible and usable by those end users.</p>
Principles	<ol style="list-style-type: none"> <li>1. Strategically directed research</li> <li>2. End-user outcome focused</li> <li>3. First class science</li> <li>4. Light administration</li> </ol>
Success Measures	<p>It is likely that the proposed institute will be deemed successful when:</p> <ul style="list-style-type: none"> <li>▪ The industry is making tangible and measurable progress toward the target of increasing profitable GVP to \$1.3 billion by 2028 and by 2028 has achieved this objective;</li> <li>▪ Industry is able to measure and articulate the impact of research coordinated by the institute on its operations; and</li> <li>▪ Industry, regulators and community are satisfied that the resulting increase in productivity is not reducing the sustainability of the fishery, infringing on lifestyle and cultural expectations and as a result the industry's social license to operate is maintained.</li> </ul>

**TABLE 12 – PRELIMINARY STRATEGIC SETTINGS FOR THE PROPOSED INSTITUTE**

Table 8 in Section 5 summarises potential participants in the Proposed Institute. While these participants share a common interest in participating in Lobster related research, the fiduciary obligations under which they participate, their strategic motivations for participation and their specific desired research outcomes will often be different and sometimes in conflict. Ensuring that these discrepancies and conflicts do not undermine the success of the Proposed Institute a robust governance framework will be required, some of the likely elements of which are summarised in Table 13 below.

Key Element of the Governance Framework	Summary
Separation of 'ownership', governance and management	The Proposed Institute should be structured such that there is decision-making separation between participants with 'equity' in the Proposed Institute, the peak strategic and operational decision-making body and the executive responsible for day-to-day management of the Proposed Institute. While decision-making responsibility should be clearly demarcated between these functions, transparency and good communications should be facilitated through formal reporting structures.
Strategic research plan that determines areas of research in which the Proposed Institute may invest	A detailed research priorities plan will be established that identifies through a consultative process, specific knowledge and technology needs of end users in the Australian Lobster industry and regulators of that industry, as well as an assessment of the current state-of-the-art in identified areas. To ensure contemporary relevance, the research priorities plan will be periodically reviewed and to ensure that the Proposed Institute is responsive to unexpected issues, the peak strategic and operational decision body will have the capacity to instigate a review at any time outside of the routine review cycle. The peak strategic and operational decision-making body will only be permitted to support project proposal that are aligned with the research priorities plan.
End-user and independent oriented membership of the peak strategic and operational decision-making body	In order to ensure the strategic direction of the Proposed Institute and the research projects that it supports remain focused on developing solutions that address the specific needs of industry and government end users and produce solutions that are readily adoptable by those end users, different end-users should be represented on the peak strategic and operational decision-making body (typically a board of directors). There should also be adequate independent expertise represented on the peak strategic and operational decision-making body to ensure quality decisions are made.
Multi-stage research investment decision-making process that ensures technical and end-user credibility	Any research project proposals supported by the Proposed Institute should be assessed for technical merit by a committee comprised primarily of independent technical experts. This committee should make investment recommendations to the peak strategic and operational decision-making body which makes the final investment decision based on the recommendation of the technical committee, and its assessment of end-user relevance and alignment with the Strategic Research Plan. These project investment decision-making bodies should also ensure that investment has been optimally and sensibly leveraged.
Decision-making accountability	The peak decision-making body should regularly provide formal reports to the entities with 'equity' in the proposed Institute on research project support decisions that have been made and the progress of the Proposed Institute toward achieving its objectives. The management should prepare an annual business plan for the operations of the Proposed Institute that is approved by the peak strategic and operational decision-making body, and the peak strategic and operational decision-making body should monitor management's progress toward the implementation of that business plan. Research project managers should provide regular prescribed reports to the Proposed Institute executive that allow the executive to monitor project performance, understanding the industry risk and developing both a strategic and operating risk framework.

**TABLE 13 – KEY LIKELY ELEMENTS OF A GOVERNANCE FRAMEWORK FOR THE PROPOSED INSTITUTE**

---

## 8. Moving Forward

---

### 8.1. Preliminary Recommendations

This Concept Paper makes a *prima facie* strategic, research needs and funding case for the Proposed Institute. However, there is considerable work that is required to be undertaken to:

- Ensure that there is adequate national industry support for the concept;
- Ensure that the ultimate design of the Proposed Institute meets the research output, governance framework and funding requirements of key stakeholders; and
- Establish a definitive research priorities plan, resourcing plan, governance framework and business plan such that the Proposed Institute can be established with adequate confidence that it will be successful.

### 8.2. Next steps

#### 8.2.1. Wider Consultation

The immediate priority in any process going forward is to use this Concept Paper as a basis for wider consultation. Unless the Proposed Institute has in-principle support from the national Lobster industry (fishers and processors) and a critical mass of the innovation ecosystem that will be necessary to deliver on the Proposed Institute, its success will be limited to its impact on the Western Rock Lobster sector only.

The purpose of this consultation should be to reject, validate and refine the analysis and observations made in this Concept Paper and to identify support or otherwise for the defined model from key stakeholders. It is proposed that this Concept Paper be provided to key stakeholders in this group in order to seek that input.

#### 8.2.2. Research Priorities Plan

Should adequate in-principle support for the Proposed Institute be identified, the first step in establishing the Proposed Institute is to develop the Research Priorities Plan that will determine the nature of research investments that will be made by the Proposed Institute in its first five years of operation. It is this document that fundamentally underpins the purpose and credibility of the Proposed Institute.

The Research Priorities Plan will identify, in detail, specific knowledge and technology needs of industry and government end-users through a consultative process. Based on a review of technical literature and interviews with experts, it will then establish the current state-of-the-art in the priority areas identified through the consultative process. From this analysis a list of research priorities that will be the focus the Proposed Institute will be established.

It is likely that the consultative process that determine end user needs will be facilitated via a series of workshops with fishers, processors, seafood distributors, cold-chain logistics service providers, recreational sector representative and regulators across the main sectors of the Australian Lobster industry.

#### 8.2.3. Capability Assessment and Gaps Analysis

A detailed assessment of research capability that is relevant to the needs identified by the Research Priorities Plan will be undertaken to identify important research partners in Australia

and overseas. Strategies will be developed to address any immediately identifiable gaps in required research capability.

#### **8.2.4. Business Plan**

A detailed and 'bankable' business planning exercise will be undertaken to determine the optimal organisational and legal structure of the Proposed Institute, any infrastructure or human resource requirements, management structure, operating plan, operating budget and resourcing options.

#### **8.2.5. Governance Framework and Charter**

A detailed governance framework that will guide decision-making at the Proposed Institute will be developed and produced as a Governance Charter. Based on a clearly defined governance context, this will articulate issues such as Board function, composition and operations; executive functions and responsibilities; research investment decision-cycle; research project management cycle and other important aspects of organisational decision-making.

#### **8.2.6. Structural Agreements**

Finally, term sheets for any contractual arrangements that are required to give effect to the Proposed Institute will be developed.

## Appendix 1: Interviewees

Person	Position	Organisation
Kim Colero	President	Western Rock Lobster Council
Matt Taylor	Chief Executive Officer	Western Rock Lobster Council
Clare Robinson	Communications & Research Officer	Western Rock Lobster Council
Peter Cooke	Director	Western Rock Lobster Council
Alex Kailis	Managing Director	MG Kailis
Nick Caputi	Supervising Scientist – Invertebrates	Department of Primary Industries and Regional Development, Fisheries
Simon de Lestang	Principal Research Scientist	Department of Primary Industries and Regional Development, Fisheries
Mathew Kenway	Seawater Processing and Life Support	Australian Institute of Marine Science
Erika Techera	Director	University of Western Australia Oceans Institute
Greg Jenkins	Director	Australian Centre for Applied Aquaculture Research
Peter Davies	Pro Vice Chancellor - Research	University of Western Australia
Janet Howieson	Post-doctoral Scientist	Curtin University Centre for Excellence for Science, Seafood and Health
Bruce Philips	Adjunct Professor	Curtin University, School of Environmental Biology and Aquatic Science Research Unit
Roy Melville-Smith	Adjunct Professor	Curtin University, Faculty of Science and Engineering
Peter Klinken	Chief Scientist	Western Australian Government, Office of Science
Fiona Roche	Director	Western Australian Government, Office of Science

<b>Person</b>	<b>Position</b>	<b>Organisation</b>
Peter Rogers	Former Director General	Western Australian Government Department of Fisheries
Andrew Rolland	Chief Executive Officer	Recfish West
Richard Stevens	Principal	Private fisheries industry consultant and former director of the Fisheries Research and Development Corporation
Crispian Ashby	Programs Manager	Fisheries Research and Development Corporation
Patrick Hone	Chief Executive Officer	Fisheries Research and Development Corporation
Gary Morgan	Former Chair	Southern Rock Lobster Limited



---

## Appendix 2: Preliminary Research Agenda

---

This Appendix contains a preliminary research agenda for the Proposed Institute. It has been based on very limited consultation and is indicative only. Its purpose is to inform further analysis and consultation with a view to developing a comprehensive, stakeholder owned research priorities plan for the Proposed Institute, should a decision be made to proceed with the proposal.

<b>PROGRAM 1</b>	<b>Maintaining Optimal Sustainable Harvest</b>
<p><b>DESCRIPTION</b></p> <p>Program 1 focuses on the development of new knowledge and technologies that are used by industry and regulators to accurately assess stock and stock structure of Australian Lobster fisheries and usage of the resource, therefore providing an increasingly robust scientific basis for a framework of optimal sustainable harvest. Program 1 is also focused on generating the scientific knowledge that underpins industry and regulator understanding of pressures on the fishery, the cumulative impact of those pressures with respect to the nature of the fishery and its viability. The resulting knowledge and technologies are intended to inform both regulatory and industry responses to the changing fishery.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
Improving the accuracy of stock assessment	This subprogram will focus on continuously improving the statistical robustness and inputs to current stock prediction models that are based on puerulus recruitment. It will also seek to develop new, more efficient and accurate stock assessment methods such as those based on mainstream and emerging genetic science technologies. The intended application of the outcomes of this program are tools for regulators that ensure Total Allowable Catch are set at optimal sustainable harvest and that resource allocation decisions are sound, as well as to inform strategic, investment and operational decision-making by industry.
Impact of Climate Change on the fishery	This subprogram will focus on understanding the impact of increasing water temperature, ocean alkalinity and reduced coastal freshwater ingress that is the result of Global Climate Change on the Australian Lobster fishery. It will endeavour to understand the current and future impact of these changes on the larval cycle of Australian Lobster species, important habitats and food sources within the geographical boundaries of the fisheries (e.g. replacement of kelp with tropical seagrasses in northern parts of fisheries) and the biological viability of various potential pathogens within the fishery, as well as the resilience of the fishery to these changes.
Impact of marine noise on the fishery	The impact of marine noise, particularly that generated from offshore petroleum exploration programs using seismic survey tools, has been recently controversial and for so long as the Australian Lobster industry shares the marine resource with the petroleum industry and the impact of this and other sources of marine noise (i.e. increased commercial and recreational vessel traffic) on the lifecycle of various commercial Lobster species is not well understood, it will likely remain controversial. This research subprogram will focus on understanding the impact of the various sources of marine noise on the lifecycle of commercial Australian Lobster species, as well as the

	<p>fisheries resilience to these impacts. It will focus on generating scientific knowledge that can be used to effectively manage sharing of the marine resource with the offshore petroleum industry (such as identifying low-impact windows for seismic operations) and if necessary and appropriate, accurately inform any justified compensation decisions.</p>
<p>Impact of recreational and tourism use of the marine environment on the fishery</p>	<p>In addition to recreational Lobster fishing, generally increased use of the marine environment for recreational and tourism purposes will naturally lead to a larger anthropogenic footprint on the ecosystems that support the Australian Lobster fishery and the ecosystems connected to those ecosystems. This subprogram will focus on developing scientific knowledge that enhances understanding of these trends, their likely impact on the Australian Lobster fishery and the resilience of the fishery to these pressures as a basis for developing resource sharing frameworks.</p>
<p>Impact of increased coastal urban and industrial development on the fishery</p>	<p>The vast majority of the Australian population and industry is coastally oriented. This is a paradigm that is unlikely to change and as a result, as Australia and its economy continues to expand so will the pressures on the coastal marine environment that result such as hinterland and coastal waterway diversion, urban and industrial run-off, increased risk of vessel-borne pathogens and other anthropogenic pressures that are associated with population and industrial concentration. The life-cycle of all Australian Lobster fisheries has a coastal intersection in areas where urban and industrial development is progressing. This subprogram will focus on predicting Australian urban and coastal development, its likely externalities with respect to impact on the lifecycle of commercial Australian Lobster species and the resilience of those species to these pressures.</p>
<p>Risk assessment of invasive species and pathogens</p>	<p>Increased marine tourism and international shipping in waters that comprise or are in proximity to those that define the Australian Lobster fishery increases the risk of invasive species and pathogens being introduced that may affect the productivity or viability of the fishery. Furthermore, a marine environment that is altered by global climate change means that the biological viability of various pathogens and invasive species in the Australian Lobster fishery will also change. This subprogram will focus on developing a scientific framework for understanding current and future pathogen and invasive species risk to the Australian Lobster industry, and developing monitoring and response technologies and frameworks for mitigating that risk.</p>
<p>Cumulative Impact Modelling</p>	<p>Each of the pressures on the Australian Lobster industry that have been identified above will occur, to varying degrees, at the same time. As such, an understanding of the cumulative impact of these pressures on the productivity and viability of the fishery in different geographical areas and on different species, as well as the</p>

	<p>resilience of different species in different geographical areas to the cumulative impact of these pressures is critical to ensuring an optimal regulatory and strategic, investment and operational investment decision-making environment. This subprogram will focus on aggregating the scientific knowledge from the other subprograms and generating additional knowledge that better informs predictive modelling of the cumulative impact of these pressures on the productivity and viability of different sectors of the Australian Lobster fishery.</p>
--	---

<b>PROGRAM 2</b>	<b>Improving Productivity of the Fishing Effort and Maintaining Social License to Operate</b>
<p><b>DESCRIPTION</b></p> <p>Program 2 focuses on the development of new knowledge and technologies, as well as the adaption of technology from other industries, and its implementation to ensure that the Australian Lobster industry achieves rates of productivity growth that are necessary for the industry to remain competitive in international markets and levels of profitability that are necessary to attract necessary investment, as well as to ensure that its Occupational Health and Safety (OHS) and environmental credentials continue to meet societal and market expectations.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
Economics of Australian Lobster Fishing Enterprises	This subprogram will focus on commercial and economic research designed to better understand key innovation, economic and social trends will impact on future productivity and profitability for Australian Lobster fishing operations. This will be used to help operators in the industry to undertake strategic and investment decisions.
Efficient vessel design	This subprogram will likely focus primarily on adapting vessel designs, construction materials, powertrain technologies and operational systems layouts from other marine industries to produce more efficient Lobster fishing vessels. The objective will be to develop and deploy vessels that use less fuel (including hybrid and electric technologies), are faster, more manoeuvrable and optimally suited to the Lobster fishing task.
Efficient pot handling systems	The main operational task on a Lobster fishing vessel is the retrieval of pots, removal of pot catch and sorting of pot catch whereby by-catch and prohibited catch is released and harvestable catch stored on the vessel. While winches are used to retrieve pots, the remainder of the process is largely a manual operation. This subprogram will focus on the adaption of existing technology in other industries that optimally automates this process, minimising damage to by-catch or prohibited catch and reducing OHS risk.
Crew health and welfare	This subprogram will focus on all aspects of OHS associated with the fishing vessel, including on board operating systems that safeguard against injury and crew mental health.

<p>On-board digital systems</p>	<p>Digital systems that integrate real-time information that is normally produced from the vessels operation (such as fuel consumption, GPS location, metocean conditions etc.), as well as that from new sensor technology that can produce catch and biological data can inform information and decision support systems resulting in improved strategic and operational decision-making in the fishing operation and if integrated with downstream information systems, along the supply chain. This information can also be used to support product traceability that is an increasingly common requirement of premium food markets and to ensure that compliance with regulatory requirements is efficient. This subprogram will focus on adapting existing technologies in other industries for this purpose.</p>
<p>Improved catch targeting</p>	<p>The ability to rapidly locate and target optimal volumes of catch with a high degree of accuracy reduces vessel usage and time at sea, thus improving the productivity of the fishing operation. This subprogram program will be highly integrated with stock assessment research undertaken in Program 1 and seek to generate new knowledge that can be used to develop predictive models for effective and reliable catch targeting.</p>
<p>Bait alternatives</p>	<p>The standard practice of baiting pots with fish is coming under increasing scrutiny. Whilst effective, baits attract other untargeted species that are either not trapped or released back into the natural environment, potentially altering the natural food-chain and are also a potential vector for invasive pathogens. This subprogram will focus on the development of Lobster attraction technologies as an alternative to baits.</p>
<p>Wildlife protection systems</p>	<p>Considerable development designed to reduce the impact of pots on wildlife has already been undertaken, resulting in pot design that has minimal impact on wildlife. However, as societal expectations change, continuous improvement in this area will be required. This subprogram will seek to progress pot systems design toward a goal of zero wildlife impact.</p>

<b>PROGRAM 3</b>	<b>New Australian Lobster Products and Markets</b>
<p><b>DESCRIPTION</b></p> <p>Program 4 focuses on identifying, describing and quantifying new markets for Australian Lobster production and opportunities to develop new products based on Australian Lobster production.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
Capitalising on the Australia-China Free Trade Agreement and other Trade Agreements	The New Zealand Lobster industry provides a very good precedence for how a Trade Agreement with the PRC can be utilised to significantly enhance the penetration of premium seafood product in PRC markets. This subprogram will seek to understand opportunities presented to the Australian Lobster industry that stem from the Australia-China Free Trade Agreement so that the industry is ready to capitalise on those opportunities when the agreement comes into effect in 2019.
Australian Lobster product diversification	As a premium seafood product the majority of Australian Lobster production is currently marketed in its purest or close-to-purest form. As global supply increases and markets expand diversification of Australian Lobster product may be required. This subprogram will explore opportunities for different Lobster cuts, new products that can be developed from processing waste and value-adding through avenues such as pre-packaged meals.
Development of new export markets	The transition of developing economies will create new export markets for Australian Lobster product. This subprogram will focus on understanding when and how these markets will emerge, as well as how to effectively engage with these markets. This knowledge will be critical to the Australian Lobster industry penetrating these emerging markets early and developing a competitive position on which market share can be established and maintained.
Domestic market development	The size and growing nature of the recreational fishery, indicates that there is significant latent domestic demand for Australian Lobster product. Furthermore, the ability to deliver adequate supplies of affordable product to the

	<p>domestic market may increasingly impact on the industry's social license to operate. This subprogram will focus on understanding the dynamics and trends in the domestic market for Australian Lobster product and developing strategies for the industry to optimally capitalise on any identified latent demand.</p>
--	---



<b>PROGRAM 4</b>	<b>Downstream Productivity and Supply Chain Optimisation</b>
<p><b>DESCRIPTION</b></p> <p>Program 5 focuses on generating the new knowledge and technology, as well as adapting technology from other industries, that is required to ensure that the Australian Lobster supply chain between fishers and end customers in the domestic and international markets is competitive and effective with respect to meeting the expectations of those customers.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
<p>Digital integration for product traceability and supply chain management</p>	<p>The application of sensor technology, digitisation of processing and logistics operations and the integration of that downstream capability with fishing vessel systems will become increasingly important with respect to providing an increasingly discerning premium seafood market with verifiable product traceability information and to effectively manage the supply chain (for example, understanding issues such as live product mortality). This subprogram will focus on generating new knowledge and technology, as well as the adaptation of technology from other industries that facilitates an optimal supply chain information system for the Australian Lobster industry.</p>
<p>Processing plant automation</p>	<p>The reduction of OHS risk and improved productivity in the Australian Lobster processing sector will require optimal automation of processing tasks. This subprogram will focus on generating new knowledge and technology, as well as the adaptation of technology from other industries that facilitates high levels of automation of the Australian Lobster processing function.</p>
<p>Improving live product survival rates</p>	<p>The survival rate of Australian Lobster product through live export channels is variable across species and markets, potentially resulting in the Australian Lobster industry being less competitive in international markets and not extracting optimal value from those markets. This subprogram will focus on understanding causes of mortality in different commercial Australian species of Lobster (e.g. stressors such as temperature, density etc.), developing technologies and methods for mitigating mortality risk and the cost-benefit associated with using those methods.</p>
<p>Packaging for optimal product quality</p>	<p>Outside of the live product market, ensuring that fresh and frozen product is delivered to the customer at the highest possible quality is important for maintaining premium pricing. Post the processing plant, quality of non-live product is determined largely by the conditions under which it is transported. This Subprogram will focus on</p>

	<p>understanding optimal transport conditions for fresh and frozen Australian Lobster product such as atmosphere and packaging (styrene, woodchips, chiller packs, etc.) and the cost benefit of various options.</p>
<p>Australian Lobster supply chain economics</p>	<p>The structure of the Australian Lobster processing industry is relatively complex. It is comprised of a range of organisation structures (cooperatives, family companies, private equity back companies and public companies); at a local level competition is concentrated in oligopolistic industry structures; and there seems to be limited relationship between the sectors on the west and eastern side of the Nation. This subprogram will seek to better understand the structure of the downstream sector of the Australian Lobster industry, its relationships should with Lobster sources and the distribution channels and networks it uses to distribute product, with an objective of assisting the industry to optimise its overall competitiveness in domestic and international markets.</p>
<p>Governance, leadership and people development</p>	<p>This subprogram will focus on ensuring that Australian Lobster industry governance and advocacy is based on world-best-practice at that there are effective sector-wide professional development programs that are designed to ensure strong industry leadership succession.</p>

<b>PROGRAM 5</b>	<b>Profitable Lobster Aquaculture and Feedlots</b>
<p><b>DESCRIPTION</b></p> <p>Program 3 focuses on identifying species that are suitable for aquaculture in Australia and developing aquaculture systems for those species. It also focuses on developing and commercialising the knowledge and technology that is required to develop commercial scale feedlot operations for key wild-harvest species of Western, Southern and Eastern Rock Lobster.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
Aquaculture production of Australian tropical Lobster species	The development of the ability to economically produce <i>P. ornatus</i> and potentially other Australian tropical lobster species may be necessary to defend market share by being able to produce marketable volumes of 'clean-and-green' aquaculture product to complement Australian wild-caught <i>P. ornatus</i> . A domestic market for <i>P. ornatus</i> could also be established. This subprogram will support established Australian Lobster aquaculture programs, as well as identify other Australian species of tropical Lobster that could be the subject of commercial aquaculture production.
Feedlot systems design and husbandry practice	The development of specifications for and design of ocean-based, semi-closed or closed holding systems that can minimise agricultural risk and maximise grow-out economics in terms of meat yield per unit of cost and meat yield per unit of time, while producing commercial volumes of value-added product will be key to the success of this program. This subprogram will focus on the systems development required to achieve this.
Nutrition for effective feedlot production of Australian Lobster	The economics of any feedlot operation is also a function of achieving the correct balance of feed cost and feeds that optimise Food Conversion Ratio (FCR). This subprogram will explore a range of feed options including wild-caught or aquaculture produced natural feeds such as mussels, as well as formulated manufactured feeds with a view to identifying optimal feed options.
Australian Lobster moulting biology	Effective feedlot operations require the fishers to be able to identify animals within their catch that are optimally suited to feedlot production. These animals will achieve maximum increase in meat yield in the shortest period of time and at the lowest feed (and potentially preventative treatment) costs. This will need to be informed by a greater

	<p>understanding of the animal biology that drives FCR and moulting in each of the key species. This subprogram will focus on understanding aspects of the biology of Western Rock Lobster, Southern Rock Lobster and Eastern Rock Lobster that determine moulting such as molting inhibiting hormones.</p>
<p>Managing animal health in Australian Lobster feedlot and aquaculture operations</p>	<p>The largest agricultural risk to most commercial aquaculture and grow-out systems is maintaining animal health. Intensive production of Australian Lobster species either through aquaculture or feedlots is likely to have the same challenges and as a result of very limited experience with intensive production of Lobster, knowledge pertaining to fish health in such an environment is very limited. This subprogram will focus on understanding pathogens and disease that can occur in an intensive production environment for Lobster and the preventative and curative actions that can be undertaken to minimise disease risk.</p>

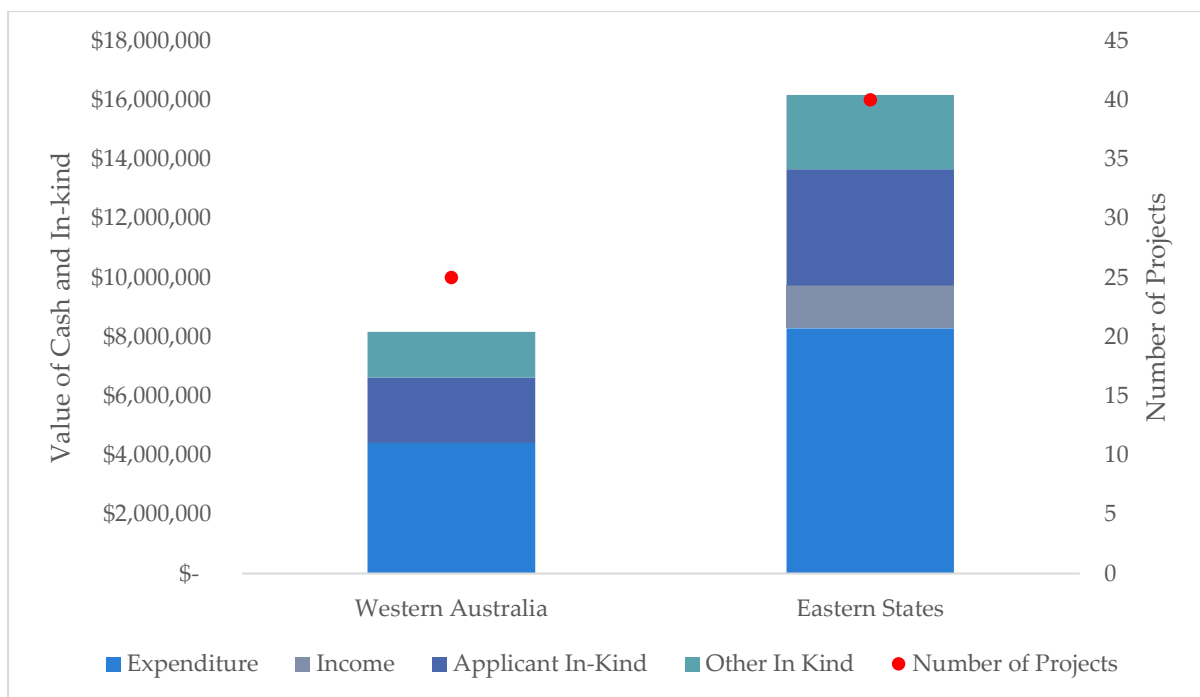
<b>PROGRAM 6</b>	<b>Policy for Growth</b>
<p><b>DESCRIPTION</b></p> <p>Program 6 focuses on generating new knowledge that is the basis for ensuring that the policy and regulatory framework for the Australian Lobster industry remains world-best-practice and ensuring sustainable fisheries management and optimal competitiveness of Australian Lobster product.</p>	
<b>SUBPROGRAMS</b>	<b>DESCRIPTION</b>
Risk and Ecosystems Based Fisheries Management	<p>Ecosystems Based Fisheries Management (EBFM) involves the assessment and management of all impacts and outcomes related to any commercial, recreational, charter, customary or 'no-take' sector operating within a bioregion. It deals with the cumulative impacts on the environment (including fish stocks, habits and ecosystems) from all the fisheries –related activities operating in a region and includes the consideration of the overall social and economic outcomes generated by these activities. EBFM is increasingly being recognised as the 'gold-standard' in fisheries management. Ensuring that EBFM optimises sustainable production from Spiny Lobster fisheries is in the interests of both industry and regulators and this subprogram has a natural link to Program 1. This subprogram will integrate new knowledge generated under Program 1 into a EBFM based fisheries management framework so that its potential impact on industry competitiveness can be accurately assessed. It will also work toward developing social science knowledge as the basis to progress toward a full risk-based fisheries management model.</p>
Best practice co-management	<p>There is a significant trend globally toward the co-management of natural resources. Such a practice provides industry with greater influence on the regulatory framework and reduces external regulatory costs. This subprogram will focus on understanding how best practice co-management can be applied to the Australian Lobster industry to satisfy both regulator and industry needs.</p>
Best practice taxation of industry	<p>Many Spiny Lobster industries, like many other primary industries, pay a range of levies that are designed to fund not only regulation of the industry, but also other activities such as research and market development. Ensuring that these systems are efficient and produce optimal outcomes for the industry is of significant importance. This subprogram will seek to develop a best-practice system of taxation and levies for the industry that satisfies</p>

	government revenue requirements and longer term industry needs such as ongoing research and development and market development.
Best practice regulation of the recreational sector	The recreational sector of particularly the Western Australian Lobster fishery is significant and growing. While it is regulated, like most recreational fishing sectors data pertaining to the extent of compliance is limited and compliance itself is largely dependent on an 'honour system'. Furthermore, increasing concern over the extent of 'pot-theft' and a 'black market' that is supplied by recreational licences is not in the interests of the commercial or recreational sector and undermines the efficacy of fishery resource allocation policy. It is in the interest of the overall fishery management, the commercial and recreational sector that systems designed to manage the recreational fishery are efficacious. This subprogram will focus on developing new knowledge and technologies that deliver a more evidence-based approach to managing the Australian recreational Lobster fishery.

## Appendix 3: FRDC Investment in Australian Lobster Fishery Research and Development

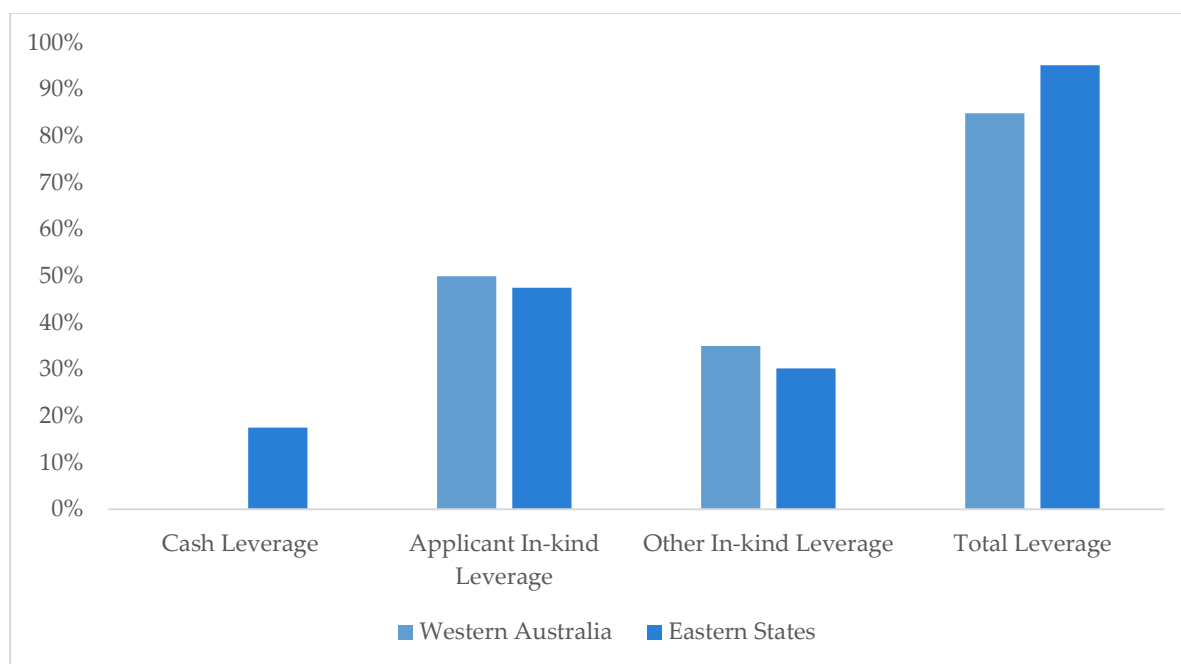
### Recent FRDC Investment in Australian Lobster Research by FRDC Investment Mechanism

During the period 2010-11 to 2017-18, the FRDC has invested, through its various mechanisms, a total of approximately A\$12.7 million across 65 research projects deemed to be relevant to the Australian lobster industry. As illustrated in Figure 18 below, the majority of the identified projects (65 percent) and total FRDC expenditure associated with those projects (62 percent) have been initiated by Eastern States lobster sector interests.



**FIGURE 18 – TOTAL FRDC FUNDED LOBSTER RELATED RESEARCH (2010-11 TO 2017-18)**

While the in-kind leverage achieved from FRDC expenditure has been broadly equivalent across Western Australian and Eastern States initiated lobster research, Eastern States initiated research has achieved total cash leverage of 17 percent, whereas Western Australian initiated research has not achieved any cash leverage from the FRDC expenditure. This is illustrated in Figure 19 below.

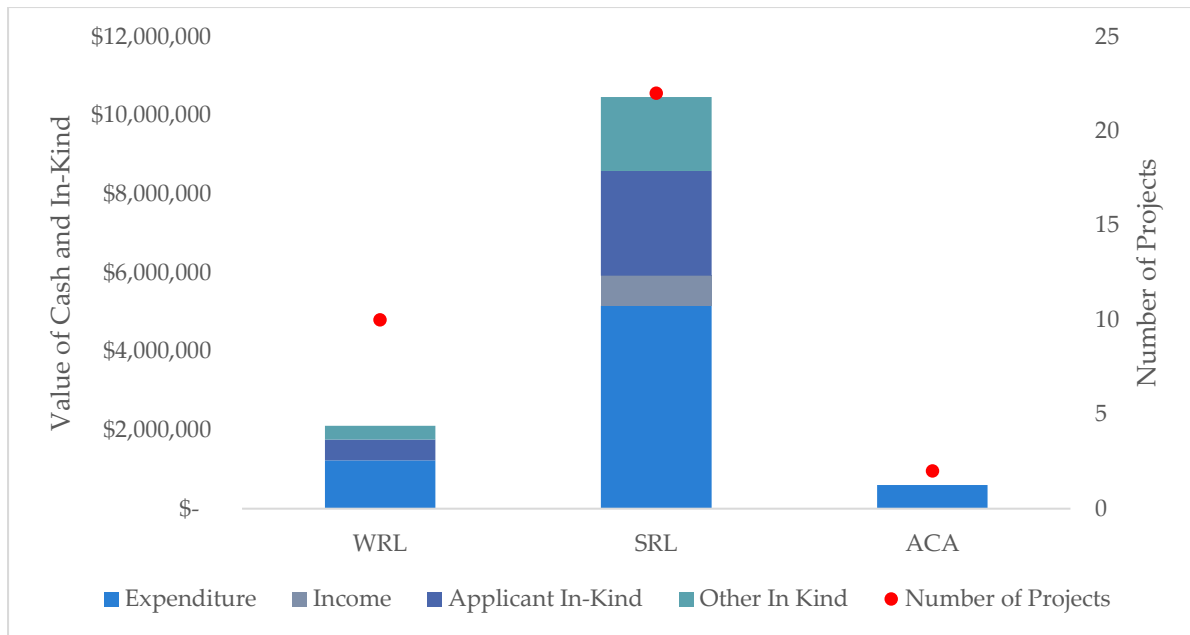


**FIGURE 19 – LEVERAGE ACHIEVED AGAINST FRDC FUNDED LOBSTER RESEARCH PROJECTS (2010-11 TO 2017-18)**

#### Industry Partnership Agreement Projects

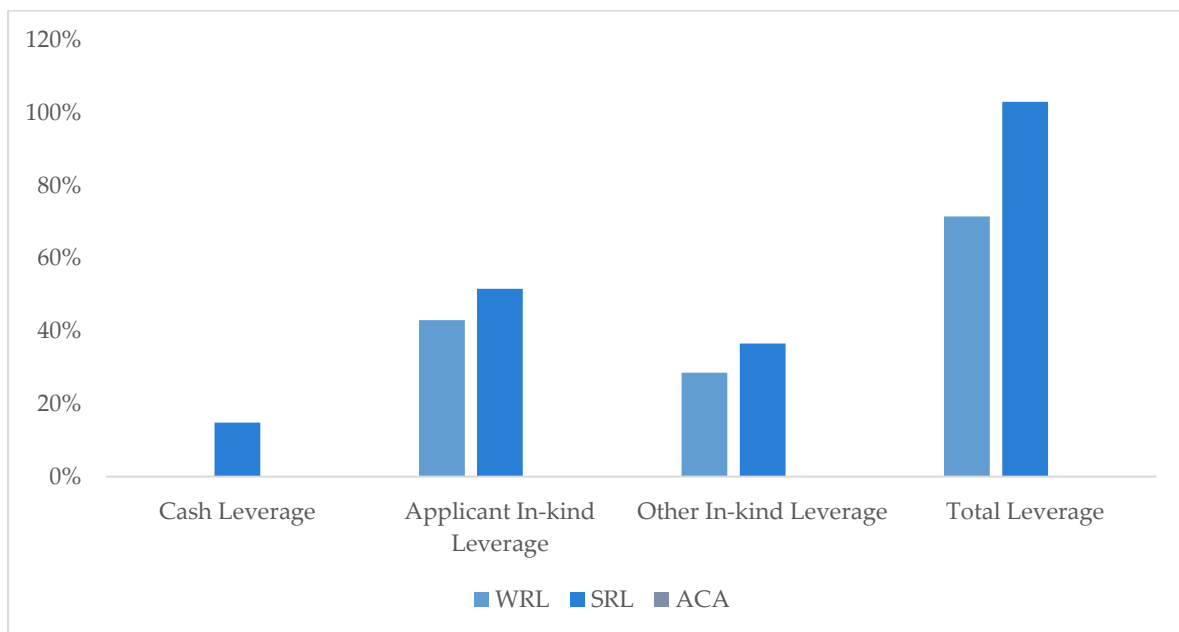
During the period 2010-11 to 2017-18, research projects deemed relevant to the Australian lobster industry were supported by the FRDC through the Western Rock Lobster Industry IPA (WRL), Southern Rock Lobster Industry IPA (SRL) and in collaboration with the Australian Abalone industry, through the Abalone Council of Australia IPA (ACA). The FRDC funded a total of 34 projects with a total FRDC expenditure of approximately A\$7.0 million through these mechanisms over the period. Projects initiated by Eastern States interests (SRL and ACA) accounted for 71 percent of the projects and 82 percent of the FRDC expenditure on those projects, with WRL accounting for the balance. This is illustrated in Figure 20 below.





**FIGURE 20 – FRDC LOBSTER RELEVANT PROJECTS FUNDED UNDER THE WESTERN ROCK LOBSTER (WRL), SOUTHERN ROCK LOBSTER (SRL) AND AUSTRALIAN ABALONE COUNCIL (ACA) FRDC INDUSTRY PARTNERSHIP AGREEMENTS (2010-11 TO 2017-18)**

While projects funded through the ACA IPA did not attain any additional leverage against the FRDC expenditure, projects executed through the SRL IPA attained considerably greater cash and in-kind resource leverage from the FRDC expenditure than was the case for projects executed through the WRL IPA. This is illustrated in Figure 21 below.

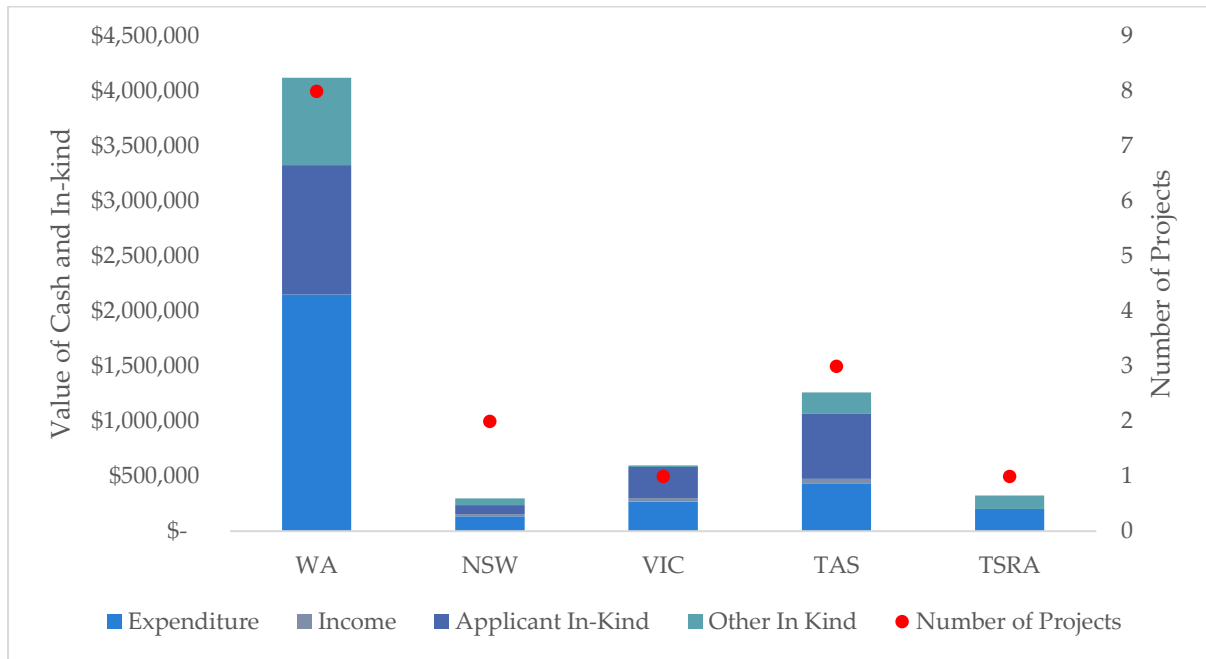


**FIGURE 21 – LEVERAGE ACHIEVED AGAINST FRDC EXPENDITURE FOR LOBSTER RELEVANT PROJECTS FUNDED UNDER THE WESTERN ROCK LOBSTER (WRL), SOUTHERN ROCK LOBSTER (SRL) AND AUSTRALIAN ABALONE COUNCIL (ACA) FRDC INDUSTRY PARTNERSHIP AGREEMENTS (2010-11 TO 2017-18)**

### Regional Advisory Councils

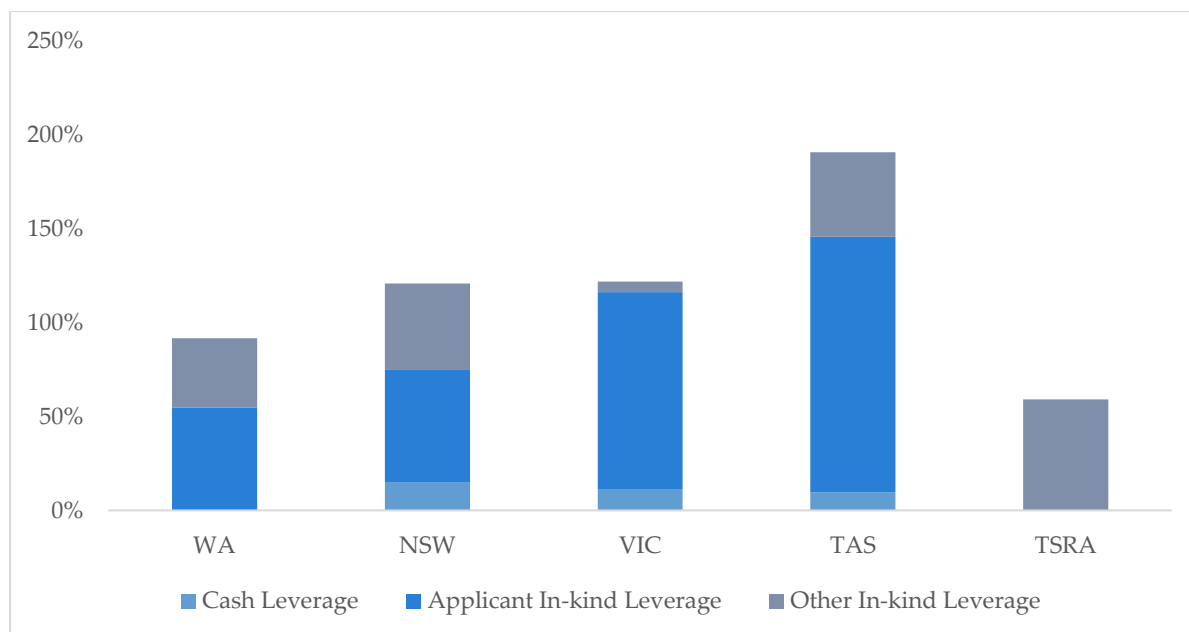
During the period 2010-11 to 2017-18, the FRDC funded research projects deemed relevant to the Australian lobster industry through the Western Australian, New South Wales, Victorian and

Tasmanian RACs, as well as a through a similar mechanism pertaining to the Torres Strait Regional Authority (TSRA). Through these RAC and RAC-like frameworks, the FRDC funded 15 research projects deemed relevant to the Australian lobster industry for a total FRDC expenditure of approximately \$3.2 million. Over half of these projects and almost 70 percent of the associated FRDC expenditure under these RACs is attributable to the Western Australian RAC, with the Tasmanian RAC accounting for 20 percent of the projects and 14 percent of the FRDC expenditure, the New South Wales RAC 13 percent of projects and 4 percent of the FRDC expenditure, Victoria 7 percent of the projects and 8 percent of FRDC expenditure and TSRA, 7 percent of the projects and 6 percent of the FRDC expenditure. This is illustrated in Figure 22 below.



**FIGURE 22 – LOBSTER RELATED PROJECTS FUNDED BY THE FRDC THROUGH THE WESTERN AUSTRALIAN, NEW SOUTH WALES, VICTORIAN AND TASMANIAN RACs AND THE RAC-LIKE ARRANGEMENT WITH THE TORRES STRAIT REGIONAL AUTHORITY (2010-11 TO 2017-18)**

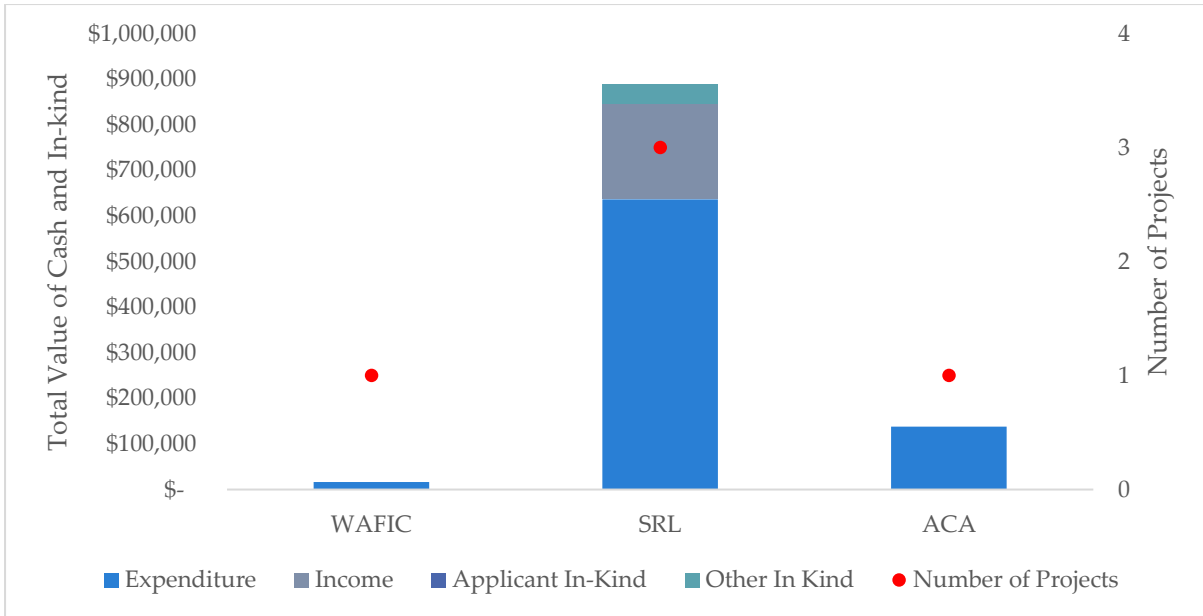
While projects executed through the Western Australian RAC have achieved higher levels of absolute leverage, this leverage has only been in the form of in-kind resources and is proportionately lower than that achieved through all other RACs. This is illustrated in Figure 23 below.



**FIGURE 23 – LEVERAGE ACHIEVED AGAINST FRDC EXPENDITURE FOR LOBSTER RELEVANT PROJECTS FUNDED UNDER THE WESTERN AUSTRALIAN, NEW SOUTH WALES, VICTORIAN, TASMANIAN RACs AND THE FRDC RAC- LIKE ARRANGEMENT WITH THE TORRES STRAIT REGIONAL AUTHORITY**

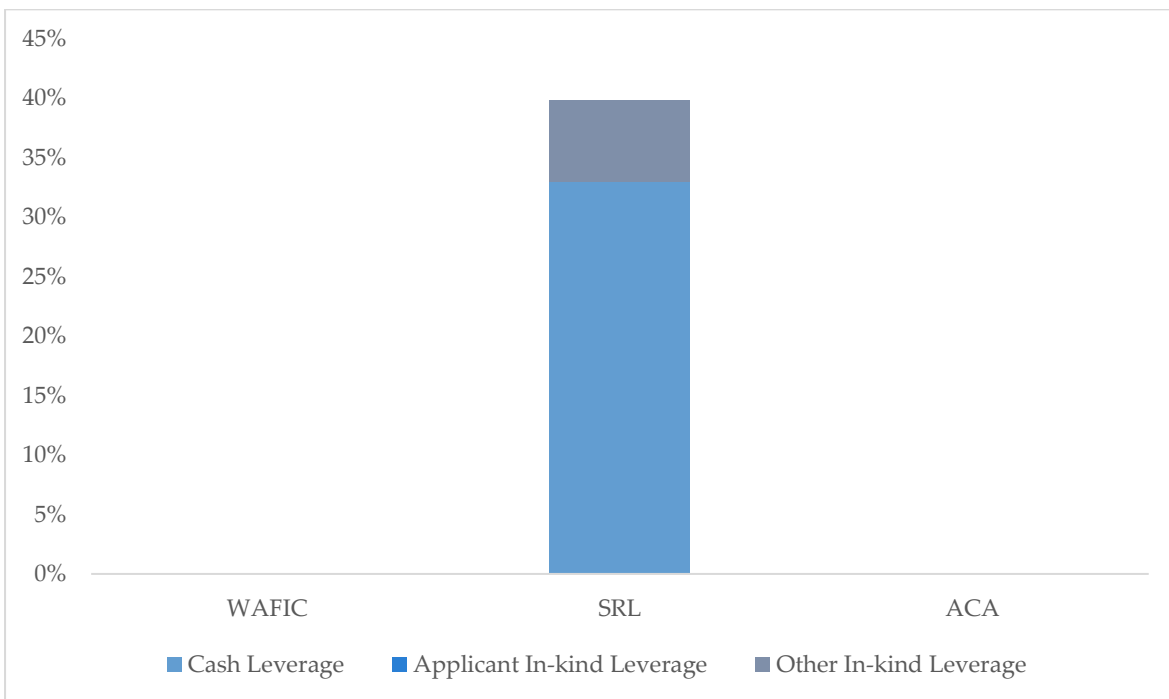
#### Seafood CRC

Through participation in the Australian Seafood Cooperative Research Centre (Seafood CRC), the Western Australian Fishing Industry Council (WAFIC), Southern Rock Lobster (SRL) and Abalone Council of Australia (ACA) (among others) were able to access additional research funds through the FRDC. During the period 2010-11, the FRDC funded a total of 5 projects for a total expenditure of \$791,000. Three of these projects accounting for 80 percent of the total FRDC expenditure through this mechanism were initiated by SRL. A single project initiated by the ACA accounted for an additional 20 percent of the FRDC expenditure through this mechanism, with a WAFIC initiated project accounting for the balance. This is illustrated in Figure 24 below.



**FIGURE 24 - LOBSTER RELATED PROJECTS FUNDED BY THE FRDC THROUGH THE SEAFOOD CRC MECHANISM**

As illustrated in Figure 25 below, SRL was the only entity able to further leverage the FRDC investment through the Seafood CRC mechanism.

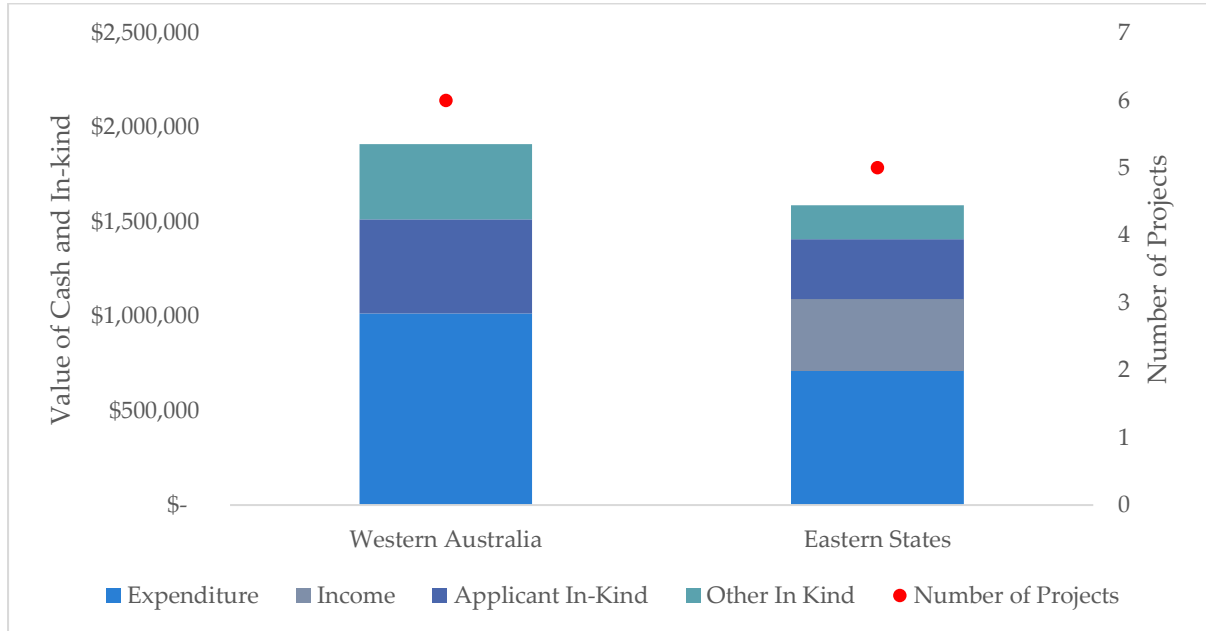


**FIGURE 25 - LEVERAGE ACHIEVED AGAINST FRDC EXPENDITURE FOR LOBSTER RELEVANT PROJECTS FUNDED UNDER THE SEAFOOD CRC MECHANISM**

**Other FRDC Programs**

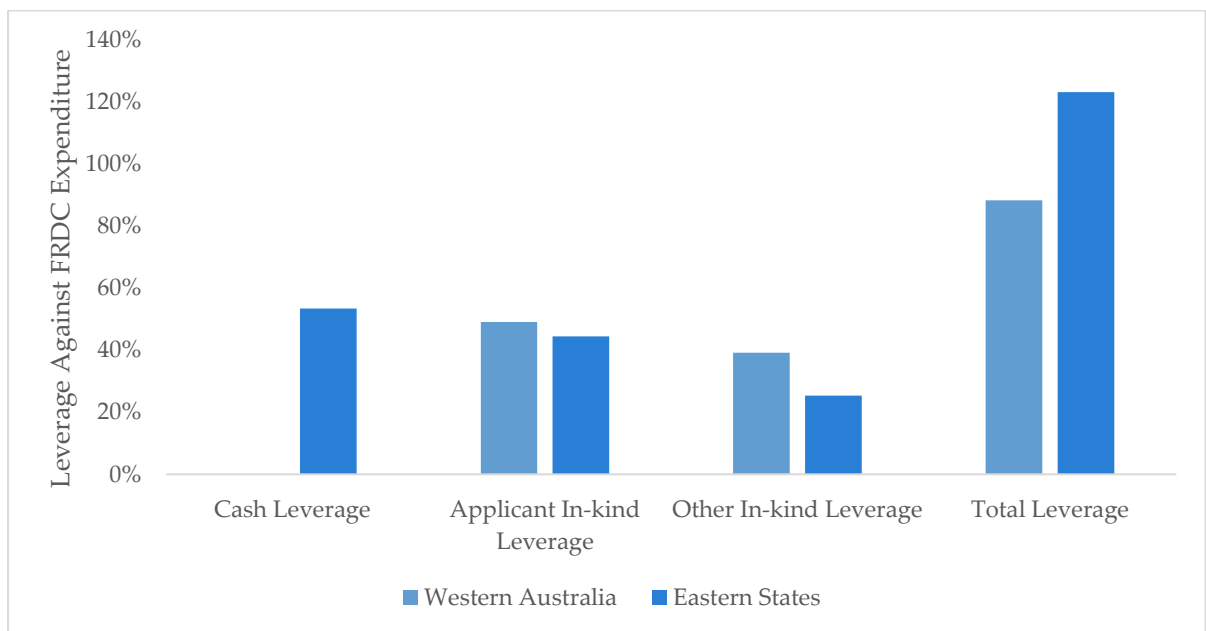
During the period 2010-11 to 2017-18, research projects deemed relevant to the Australian lobster industry have been supported by the FRDC through a number of other FRDC programs namely, Tactical Research Fund, Incentive Fund, Response Research Fund, National Priority Program, Human Dimensions Sub Program and Climate Change DCCEE. During the period, 11 projects with a total FRDC expenditure of approximately A\$1.7 million were supported through

these other FRDC programs. Of these, 55 percent of the projects accounting for 59 percent of the FRDC expenditure were initiated from Western Australian lobster sector interests, with the balance from Eastern States Lobster sector interests. This is illustrated in Figure 26 below.



**FIGURE 26 - LOBSTER RELATED PROJECTS FUNDED BY THE FRDC THROUGH OTHER FRDC PROGRAMS**

Despite accounting for the majority of FRDC expenditure across these other FRDC programs, projects initiated by Western Australian lobster sector interests have again not attained the same level of leverage against the FRDC expenditure as that of projects initiated by Eastern States lobster sector interests. This is illustrated in Figure 27 below.



**FIGURE 27 - LEVERAGE ACHIEVED AGAINST FRDC EXPENDITURE FOR LOBSTER RELEVANT PROJECTS FUNDED UNDER OTHER FRDC PROGRAMS**

## FRDC Funding by Project Initiator

The discussion in the previous section provides an indication as to the extent to which the various funding mechanisms used by the FRDC have funded research projects deemed relevant to the Australian lobster industry and through a geographical dissection, the Western and Eastern sectors of the industry. However, other than by comparing funding through IPAs with other mechanisms (which is a relatively blunt analysis), this does not provide an indication as to the extent that funding is addressing knowledge needs espoused specifically by the Australian lobster industry.

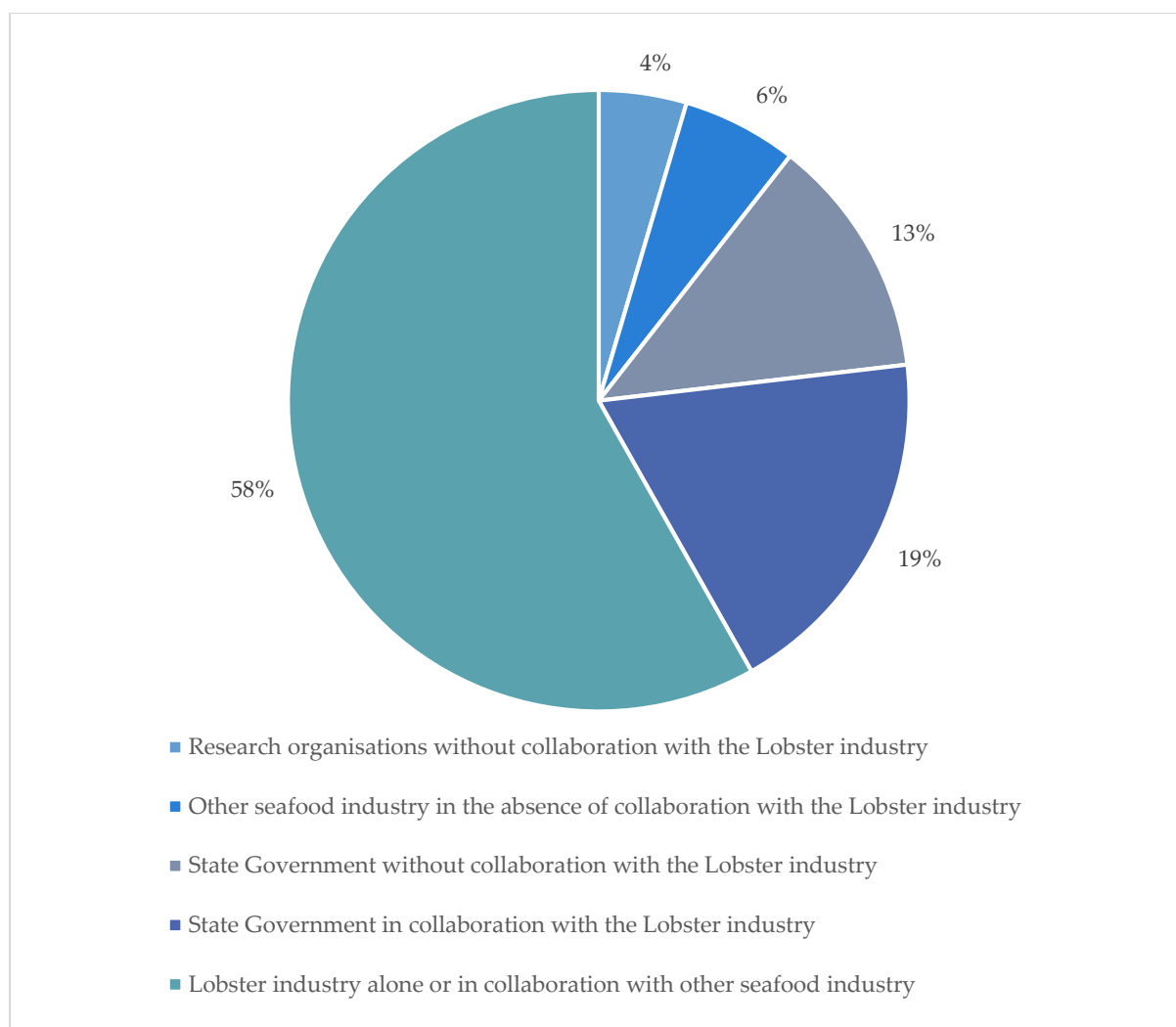
In order to provide higher resolution on these issues, this Section 0 analyses the database of FRDC projects deemed to be relevant to the Australian lobster industry according to the nature of the entity that initiated the specific project. For this purpose, the following categories of project initiator have been used:

- The Australian lobster industry or recreational sector<sup>44</sup> initiating alone or in co-initiating with another sector of the Australian seafood industry;
- Other Australian seafood industry initiating in the absence of explicit co-initiation with the Australian lobster industry or recreational sector;
- State Governments initiating with co-initiation from the Australian Lobster industry or recreational sector;
- State Governments initiating without the explicit co-initiation of the Australian lobster industry or recreational sector; and
- Research organisations initiating without the explicit co-initiation of the Australian Lobster industry or recreational sector.

As illustrated in Figure 28 below, 58 percent of the FRDC expenditure on research projects deemed relevant to the Australian lobster industry during the period 2010-11 to 2017-18 has been on projects that the Australian lobster industry or recreational sector have either exclusively initiated or have initiated in collaboration with another sectors of the Australian seafood industry. Furthermore, projects that have been initiated by a state government in collaboration with the Australian lobster industry account for an additional 19 percent of total FRDC expenditure in research projects deemed to be relevant to the Australian lobster industry. In other words, the vast majority (77 percent) of FRDC funds that have been committed to research projects deemed to be relevant to the Australian lobster industry, are by virtue of the Australian lobster industry being party to their initiation, indeed directly relevant to the Australian lobster industry.

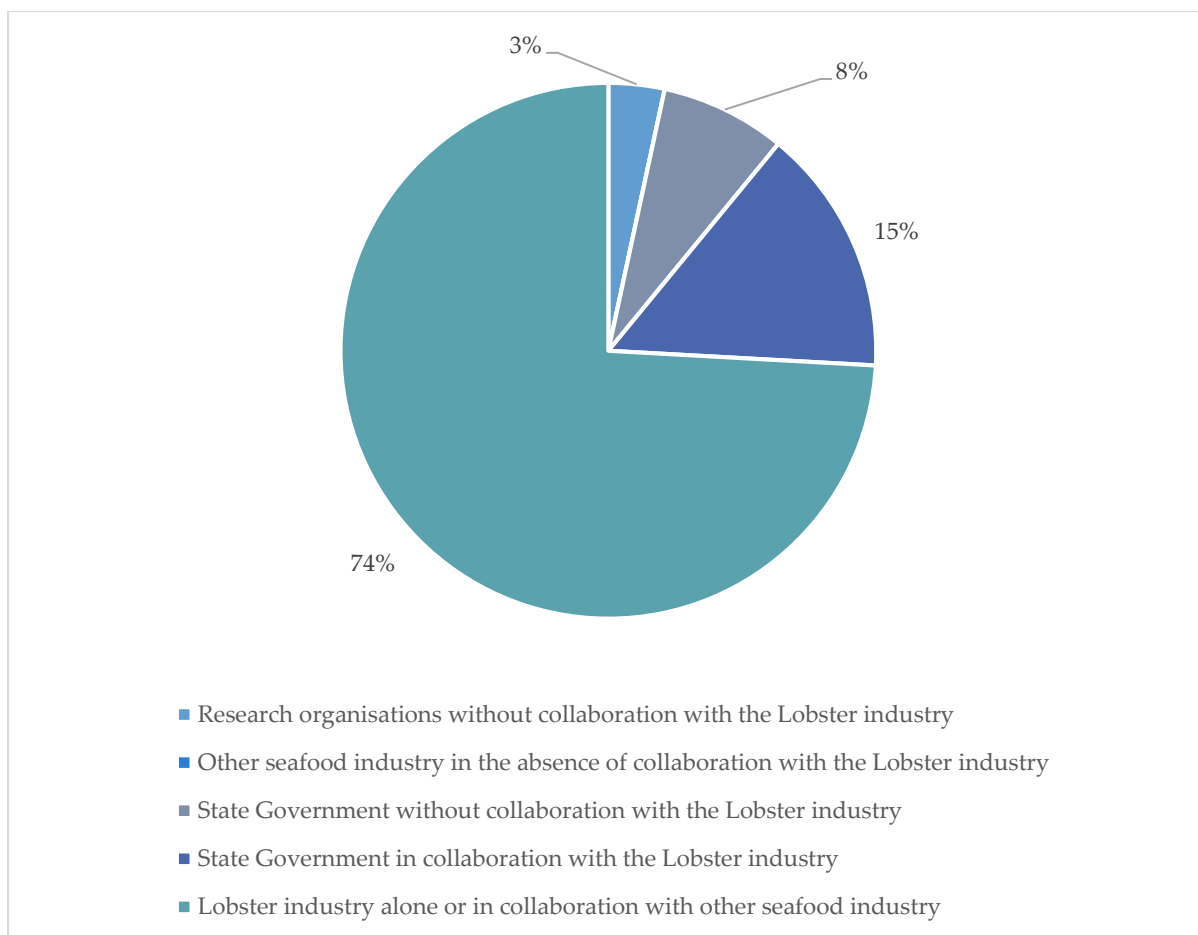
---

<sup>44</sup> During the period the Western Rock Lobster recreational sector was the only recreational interest to initiate a project.



**FIGURE 28 – PORTION OF FRDC LOBSTER RELATED RESEARCH EXPENDITURE BY INITIATOR TYPE (2010-11 TO 2017-18).**

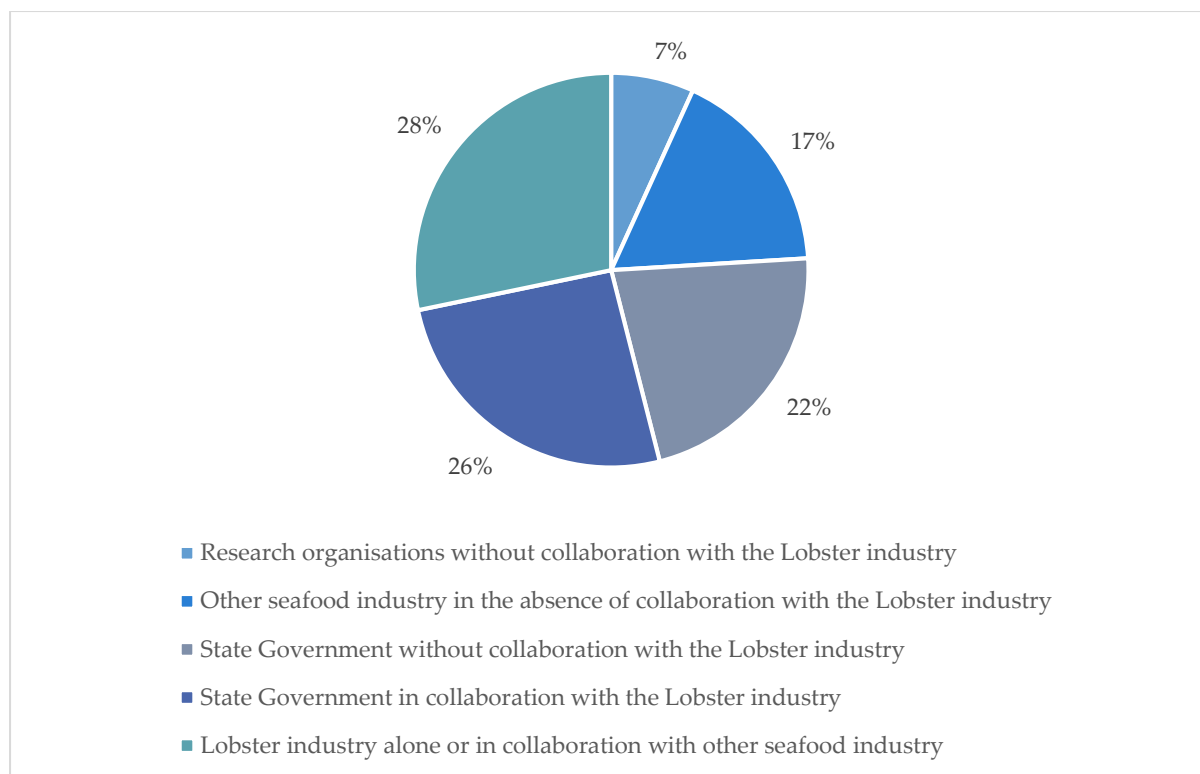
However, when initiating entities are compared on a sectoral basis, the distribution is much different. As illustrated in Figure 29 below, in the case of eastern states lobster interests, projects representing almost 90 percent of the total FRDC expenditure associated with projects initiated from eastern states lobster interests were initiated by the industry either acting alone or in collaboration with another sector of the Australian seafood industry or a state government.



**FIGURE 29 - PORTION OF FRDC LOBSTER RELATED RESEARCH EXPENDITURE BY INITIATOR TYPE – EASTERN STATES LOBSTER INTERESTS (2010-11 TO 2017-18).**

In the case of Western Australian lobster interests, only 54 percent of the funding associated with projects initiated by Western Australian lobster interest had been initiated by the lobster industry, and half of those were in collaboration with the Western Australian government. This suggests that only around a quarter of FRDC funding in Western Australia has been focused on research issues of a commercial nature. This is illustrated in Figure 30 below.

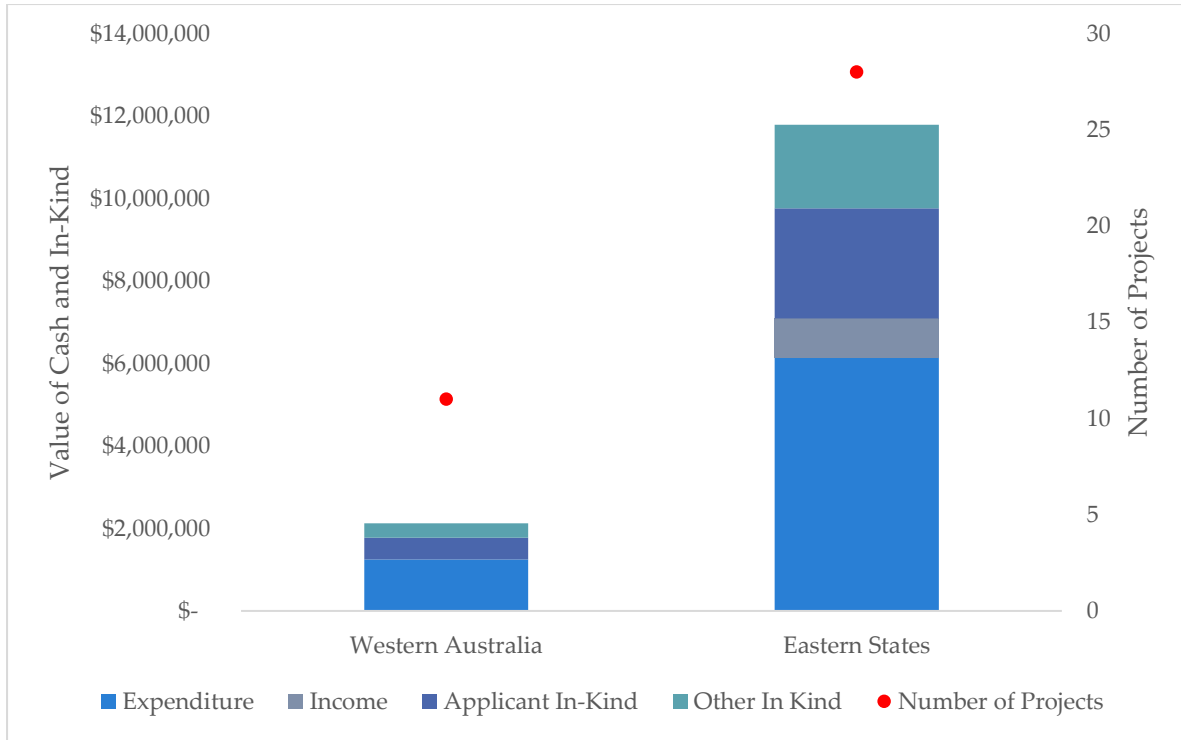




**FIGURE 30 - PORTION OF FRDC LOBSTER RELATED RESEARCH EXPENDITURE BY INITIATOR TYPE – WESTERN AUSTRALIAN LOBSTER INTERESTS (2010-11 TO 2017-18).**

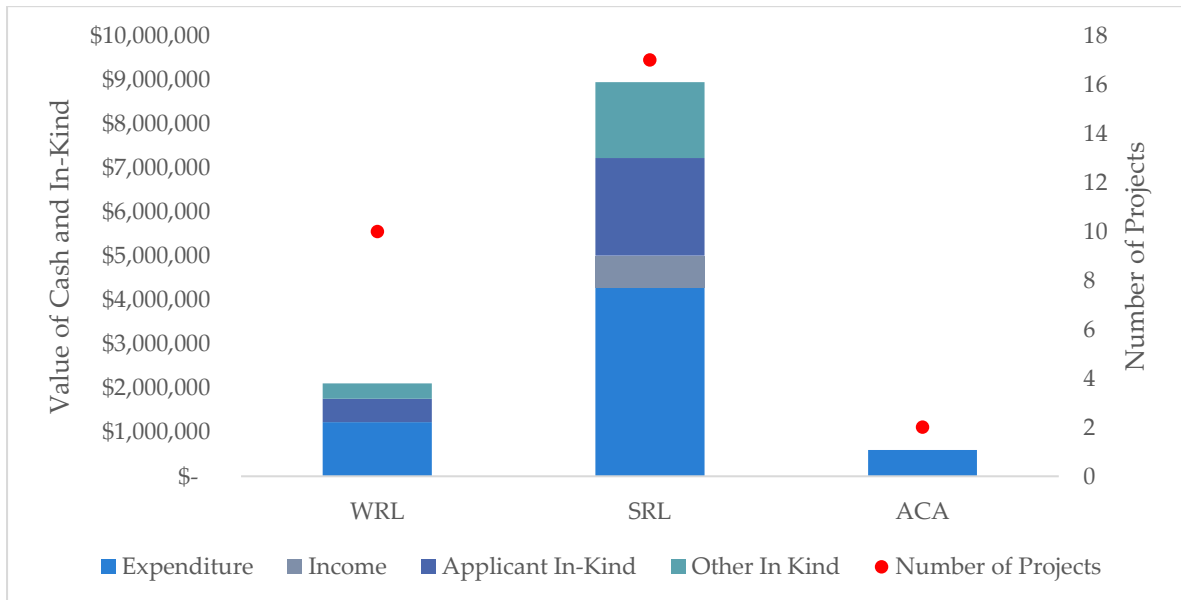
**Projects Initiated by the Australian Lobster Industry or Recreational Sector Alone or in Collaboration with other Sectors of the Australian Seafood Industry**

During the period 2010-11 to 2017-18 a total of 39 projects with an associated FRDC expenditure of approximately \$7.4 million were initiated by the lobster industry or recreational sector acting alone or in collaboration with another sector of the Australian seafood industry. Approximately 28 percent of these projects accounting for 17 percent of the associated FRDC expenditure were initiated by the Western Australian industry, whereas 72 percent of the projects accounting for 83 percent of the expenditure were initiated by the eastern states industry. This is illustrated in Figure 31 below.



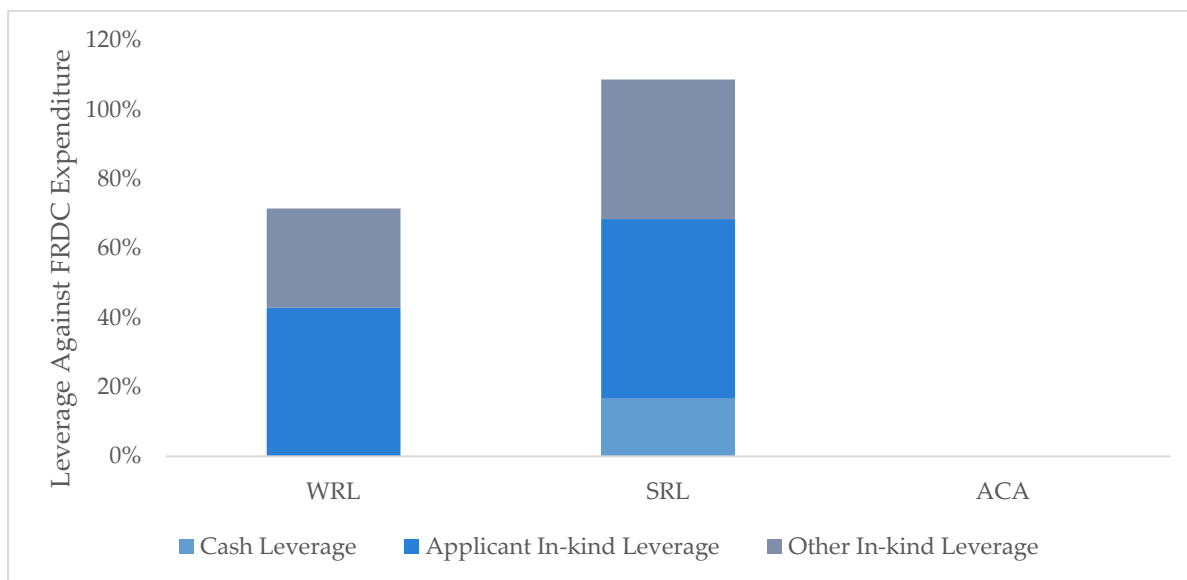
**FIGURE 31 – PROJECTS INITIATED BY THE AUSTRALIAN LOBSTER INDUSTRY OR RECREATIONAL SECTOR ACTING ALONE OR IN COLLABORATION WITH ANOTHER SECTOR OF THE AUSTRALIAN SEAFOOD INDUSTRY**

Not surprisingly the vast majority (75 percent of projects and 82 percent of FRDC expenditure) of projects in this category were undertaken through the IPAs. The distribution of projects and project resources across the IPA projects that were initiated by the lobster industry or the recreational sector acting alone or in collaboration with another sector of the Australian seafood industry is illustrated in Figure 32 below.



**FIGURE 32 – PROJECTS INITIATED BY THE AUSTRALIAN LOBSTER INDUSTRY OR RECREATIONAL SECTOR ACTING ALONE OR IN COLLABORATION WITH ANOTHER SECTOR OF THE AUSTRALIAN SEAFOOD INDUSTRY FUNDED THROUGH IPAS**

As illustrated in Figure 33 below, the Southern Rock Lobster industry achieved almost twice the leverage from projects funded through its IPA than the Western Rock Lobster industry.



**FIGURE 33 -LEVERAGE ACHIEVED AGAINST LOBSTER RELATED RESEARCH INITIATED BY INDUSTRY OR THE RECREATIONAL SECTOR ALONE OR ACTING IN COLLABORATION WITH ANOTHER SECTOR OF THE AUSTRALIAN SEAFOOD INDUSTRY AND FUNDED THROUGH AN IPA**

Research funding leveraged against the Seafood CRC was the next highest contributor (11 percent of total expenditure). This was dominated by the eastern state's industry, which accounted for 98 percent of expenditure associated with the Seafood CRC and in the case of the Southern Rock Lobster industry it leveraged additional cash and in-kind resources equivalent to 40 percent of the FRDC expenditure.

Funding through the RAC mechanism accounted for approximately 7 percent of FRDC expenditure that was initiated by the industry or recreational sector acting alone or in collaboration with another sector of the Australian seafood industry, with approximately one third of that initiated under the New South Wales RAC and two-thirds under the Tasmanian RAC. The Tasmanian RAC investment was characterised by significant in-kind leverage representing 180 percent of the FRDC expenditure, and the NSW RAC by cash and in-kind leverage representing 121 percent of the expenditure.

Projects funded under the FRDC Tactical Research Fund and Incentive Fund represented 0.5 percent of the funding of projects initiated by the lobster industry or recreational sector acting alone or in collaboration with another sector of the Australian seafood industry.

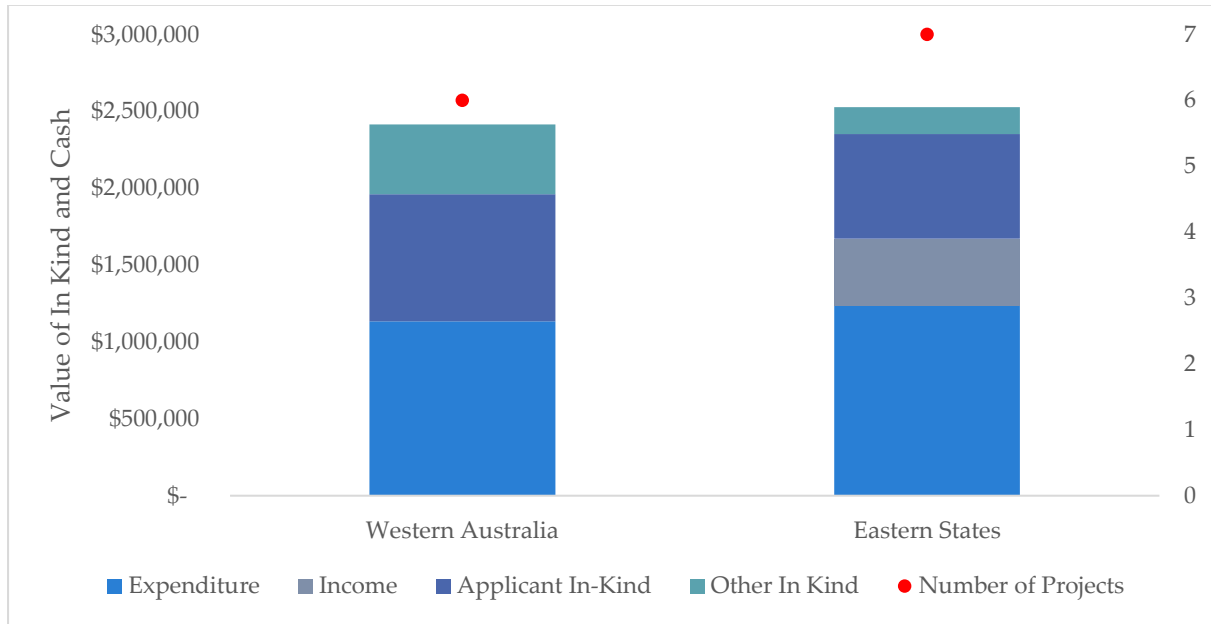
**Projects Initiated by other Sectors of the Australian Seafood Industry not in Collaboration with the Australian Lobster Industry**

During the period 2010-11 to 2017-18, two projects with a total FRDC expenditure of \$761,000 and in-kind leverage of 102 percent were initiated by other seafood industry interests out of Western Australia. The larger project representing 90 percent of the FRDC expenditure in this category was funded under the Western Australian RAC, achieving in-kind leverage of 108 percent. The other project was funded out of the FRDC Tactical Research Fund and achieved total in-kind leverage of 48 percent.

No eastern states projects were initiated by other sectors of the Australian seafood industry unless in collaboration with the Australian lobster industry.

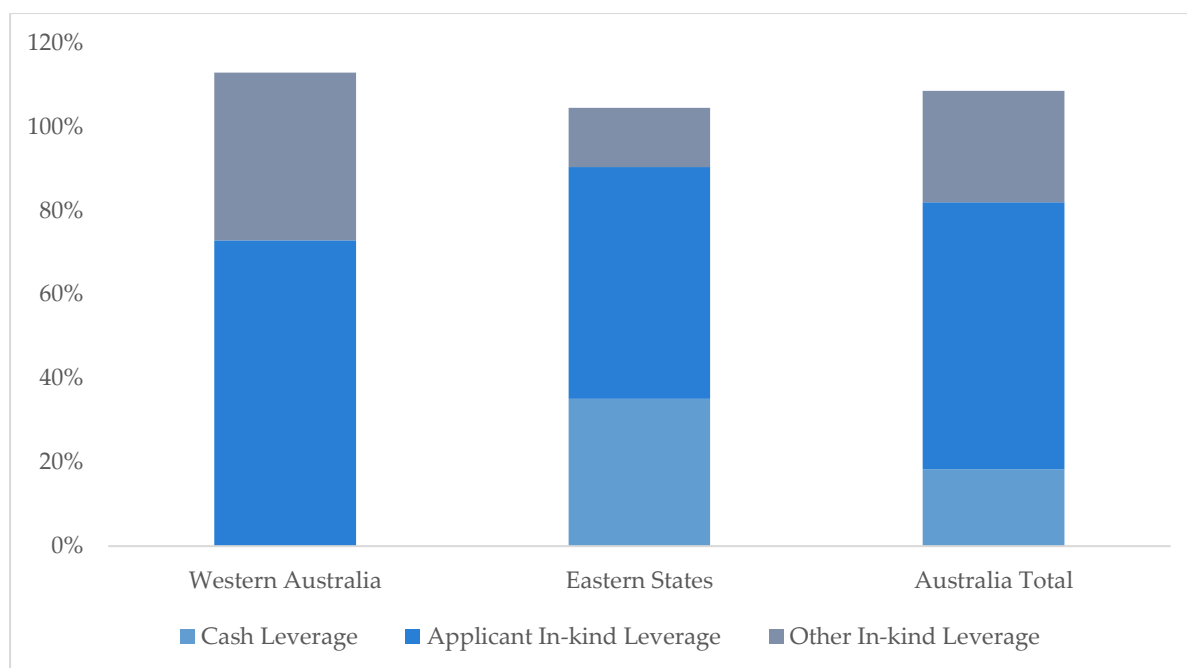
**State Government and Lobster Industry**

A total of 13 projects with a total FRDC expenditure of approximately A\$2.4 million were initiated by State Government's in collaboration with the Australian lobster industry. As illustrated in Figure 34 below, these were spread relatively equally across Western Australian and eastern states initiated projects.



**FIGURE 34 - PROJECTS INITIATED BY THE AUSTRALIAN LOBSTER INDUSTRY IN COLLABORATION WITH GOVERNMENT**

While Western Australian initiated projects in this category did not attain any cash leverage against the FRDC expenditure, overall leverage was relatively equivalent between Western Australian and eastern states initiated projects. This is illustrated in Figure 35 below.



**FIGURE 35 - LEVERAGE ACHIEVED AGAINST LOBSTER RELATED RESEARCH INITIATED BY AUSTRALIAN LOBSTER INDUSTRY AND STATE GOVERNMENT**

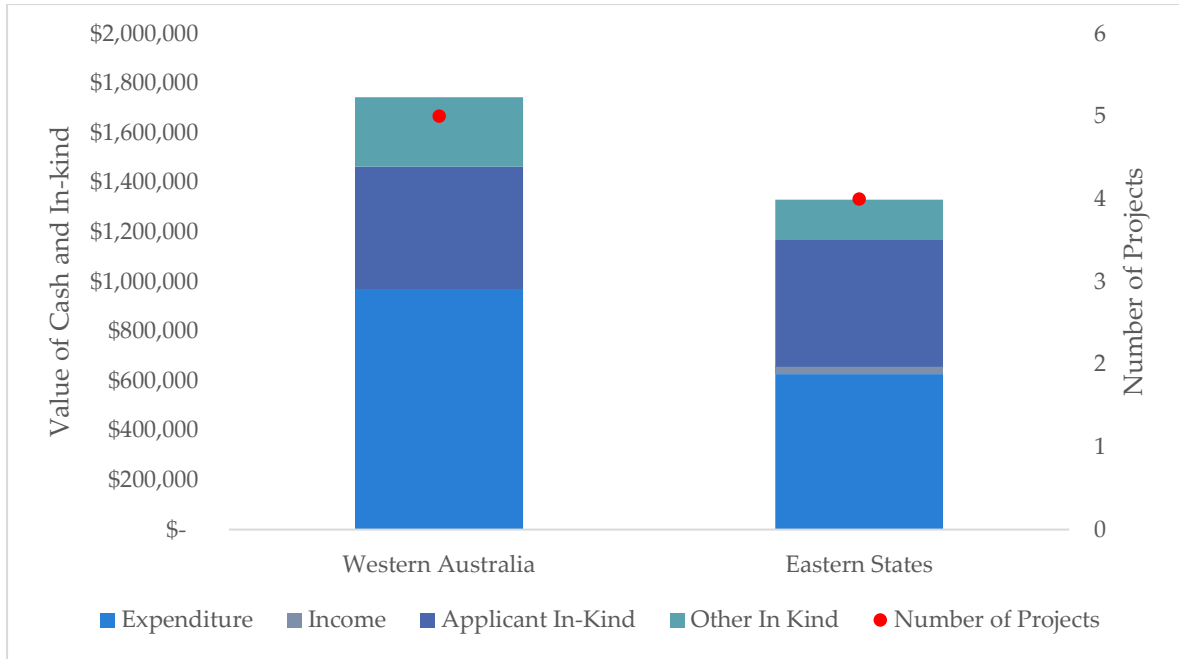
Six projects in this category accounting for just over half of the total FRDC expenditure associated with projects in this category were funded under the Western Australian and Tasmanian RACs, with the Western Australian RAC accounting for five of the projects and over 90 percent of the FRDC expenditure in the category. These projects achieved just over 100 percent in-kind leverage.

Five projects under this category representing approximately 37 percent of the total FRDC expenditure in this category were funded under the Southern Rock Lobster IPA. These projects achieved total cash and in-kind leverage equivalent to approximately 75 percent of the total FRDC expenditure associated with projects in this category.

An eastern states initiated project funded under the National Priorities Program accounted for the balance of FRDC expenditure in this category and achieved cash and in-kind leverage of almost 200 percent.

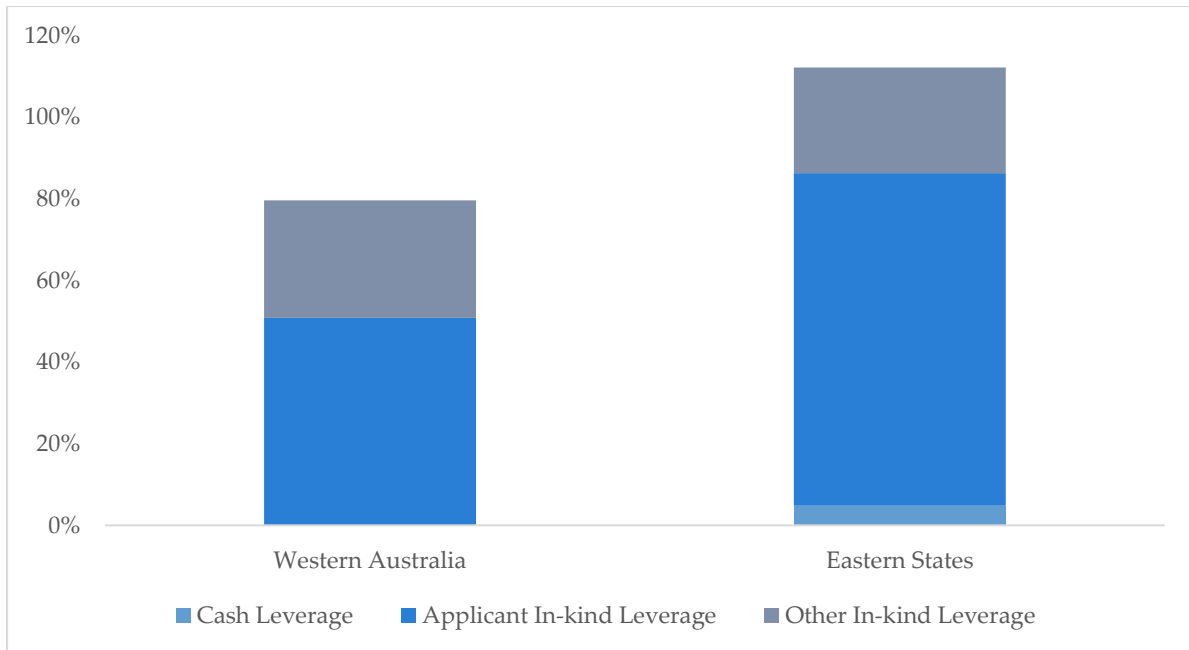
#### State Government Acting without Collaboration from the Australian Lobster Industry

During the period 2010-11 to 2017-18, a total of 9 projects representing total FRDC expenditure of approximately \$1.6 million were initiated in this category. Approximately 56 percent of the projects associated with 61 percent of the total FRDC funding were initiated by the Western Australian Government. This is illustrated in Figure 36 below.



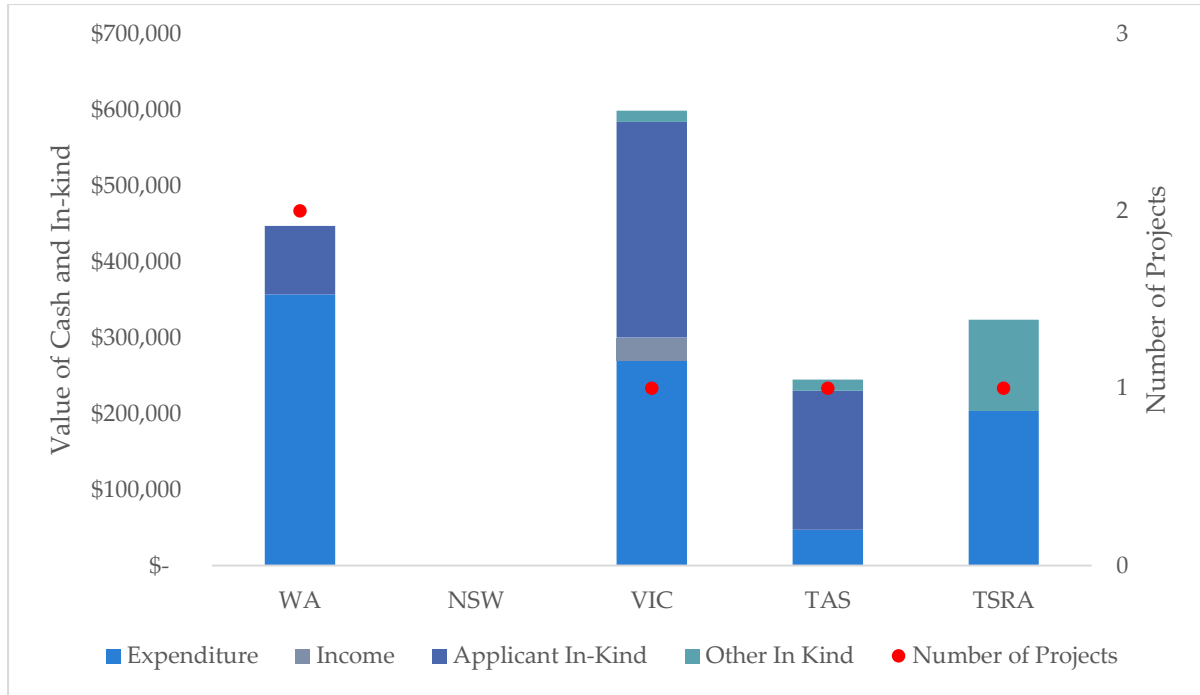
**FIGURE 36 - PROJECTS INITIATED BY A STATE GOVERNMENT NOT IN COLLABORATION WITH THE AUSTRALIAN LOBSTER INDUSTRY**

As illustrated in Figure 37 below, eastern states governments were more effective at leveraging the FRDC expenditure associated with projects in this category.



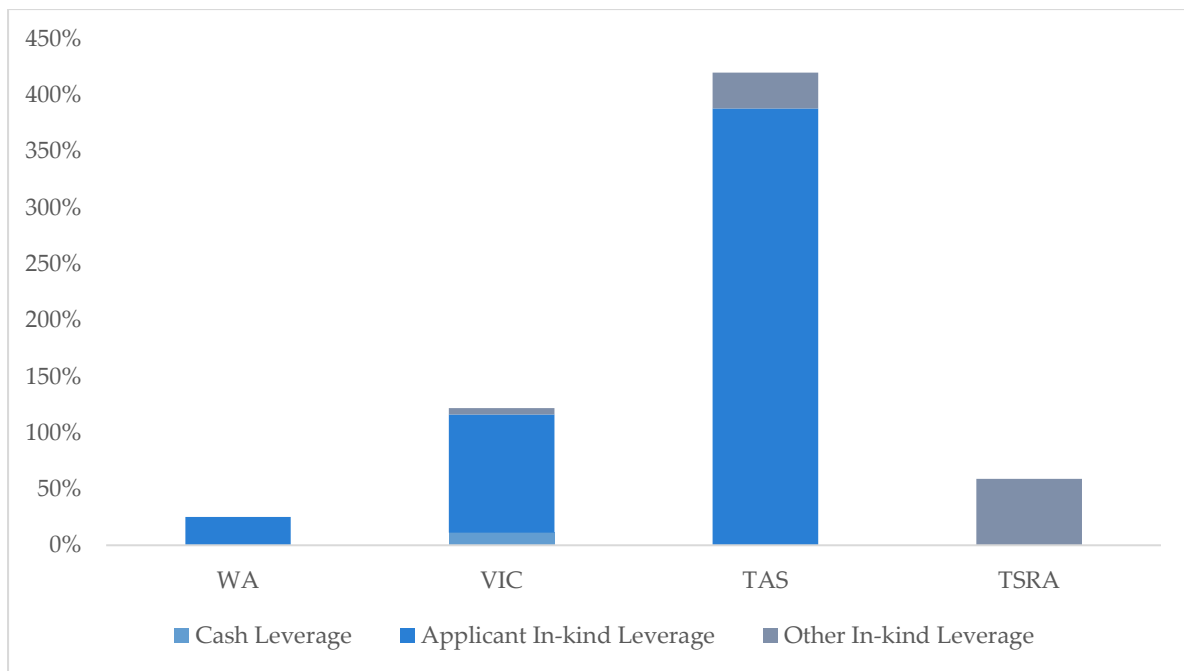
**FIGURE 37 - LEVERAGE ACHIEVED AGAINST LOBSTER RELATED RESEARCH INITIATED BY A STATE GOVERNMENT NOT IN COLLABORATION WITH THE AUSTRALIAN LOBSTER INDUSTRY**

Approximately 55 percent of the FRDC funding associated with projects in this category were executed under a RAC. This is illustrated in Figure 38 below.



**FIGURE 38 - PROJECTS INITIATED BY A STATE GOVERNMENT NOT IN COLLABORATION WITH THE AUSTRALIAN LOBSTER INDUSTRY AND FUNDED THROUGH A RAC**

Again, as illustrated in Figure 39 below, the eastern state's government projects were more effective at leveraging the FRDC expenditure.



**FIGURE 39 - LEVERAGE ACHIEVED AGAINST LOBSTER RELATED RESEARCH INITIATED BY A STATE GOVERNMENT NOT IN COLLABORATION WITH THE AUSTRALIAN LOBSTER INDUSTRY AND FUNDED THROUGH A RAC**

The remaining projects accounting for approximately 45 percent of the FRDC expenditure in this category were funded through other FRDC programs namely the Climate Change DCCEE Program, Incentive Fund and Human Dimensions Sub Program. Projects initiated by the Western Australian Government accounted for three out of the four projects and 85 percent

of the FRDC expenditure associated with projects in this category funded under other FRDC projects. The Western Australian Government attained in-kind leverage equivalent to approximately 110 percent of the FRDC expenditure.

#### Research Organisations Acting without Collaboration from the Australian Lobster Industry

During the period 2010-11 to 2017-18 a total of two projects representing FRDC expenditure of approximately \$300,000 each were funded directly with research institutions without the explicit support of the Australian lobster industry. The Western Australian initiated project achieved in-kind leverage of approximately 12 percent of the FRDC expenditure and the eastern states project, cash and in-kind leverage of approximately 85 percent of the FRDC expenditure. The Western Australian initiated project was funded under the Climate Change DCCEE program and the eastern states initiated project under the FRDC Response Research Fund.



---

## Appendix 4: Other Seafood Industry Research Collaborations and Institutes

---

### **PFG/ARC Research Hub for Rock Lobster Culture spinoff entity**

<b>Aspect</b>	<b>Details</b>
Type	Public/private – new entity to be formed as partnership between University of Tasmania Institute for Marine and Antarctic Studies ARC Research Hub for Rock Lobster Culture and PFG Group P/L
Mission (summary)	Establish world-first closed cycle rock lobster aquaculture production system, see Tasmania become global leader in rock lobster research.
Focus	Commercial scale aquaculture production of rock lobsters, particularly tropical rock lobster, but ongoing work on southern and western rock lobster.
Funding	Mixed – private capital from PFG Group to form basis of spinoff entity to market and licence new production system, earlier research funded by public grants and CRC funding.
Nexus	Tasmanian focus, Southern Rock Lobster species-specific – but little public information about new production technique.

While still nascent, in late 2017 the University of Tasmania and PFG Group announced that they would be forming a spinoff entity to market and licence a new closed-cycle aquaculture technique at commercial scale for farming tropical rock lobsters. This would be the first fully closed-loop system at scale globally. PFG has committed to build the first hatchery, while ongoing production optimisation research continues and is estimated to conclude by 2019 with full production by 2021. While the entity has a strong aquaculture focus, the parallels to the proposed WRLC Centre for Excellence are obvious, and the University is seeking commercial partners to trial expanding the process to western rock lobster species<sup>45</sup> and aims to position Tasmania as an Australian leader in rock lobster husbandry and lifecycle research<sup>46</sup>.

---

<sup>45</sup> *World-Leading Aquaculture Breakthrough to Transform Lobster Production* (2016), media release, published University of Tasmania 8 October 2016

<sup>46</sup> *Tasmanian manufacturer orders serve of world-leading lobster research* (2017), media release, published University of Tasmania 13 September 2017

## Maine Lobster Institute

Aspect	Details
Type	Public/private – research partnership between University of Maine and several industry bodies (fishers, exporters/processors, community reps).
Mission (summary)	Sustaining American lobster ( <i>Homarus americanus</i> ) resource and fishery through research, outreach, education and communication.
Focus	Specific and targeted research programmes towards conservation and sustainability of lobster resource. Coordination and united front advocacy to government, communities re industry operation. Facilitation of communication and dissemination of info to and between wider industry, business and research community.
Funding	Mixed – little public domain information, but majority of funds appear to be provided by industry members, some specific funding grants to University of Maine.
Nexus	USA and Canada – species focus on American lobster means little interest to producers and consumers in other regions targeting other species.

The Maine Lobster Institute is perhaps the closest parallel to the proposed Centre as described to AVC. Initially developed as a partnership between specific industry bodies – Maine Lobstermen’s Association, Massachusetts Lobstermen’s Association, Maine Pound (quota) Owners Association, Maine Import/Export Dealer’s Association – and the University of Maine, the Institute has operated since 1987 and has made significant contributions to the viability of the lobster fishery in North America. Specific areas of research and focus include not only pure research, but also science communication, advocacy and supply-chain innovation. The impetus for its formation appears to have been a desire on the part of peak industry bodies to ensure the continued sustainability of their resource and to increase industry profitability, which has strong parallels to the WRLC’s current aims.

## International Atlantic Salmon Research Board (SALSEA) – North Atlantic Salmon Conservation Organisation

Aspect	Details
Type	Public international – established by international treaty (Convention for the Conservation of Salmon in the North Atlantic Ocean <sup>47</sup> )
Mission (summary)	Conserve, restore and rationally manage international Atlantic salmon stocks.
Focus	Stock management and genetic diversity research to assist regulatory reform, management frameworks and habitat protection.
Funding	Entirely public – contributions from States Parties to Convention.
Nexus	North Atlantic ocean – signatory States Parties include Canada, Denmark, European Union, Norway, Russian Federation, USA.

---

<sup>47</sup> 1338 UNTS 33

As the 'pure research' arm of NASCO, the Research Board has implemented the 'Salmon at Sea' (SALSEA) programme to identify genetic diversity, growth history and profiles, mortality causes and other population metrics, as well as pursuing innovation in large-scale sampling and tagging. This species-specific management-centric approach has parallels to some of the aims of the proposed Centre. In addition, the expertise and focus on cross-jurisdictional linkages and international cooperation seem to be aligned with broader Centre goals.

### Greenfins Aquaculture Tuna Center of Excellence<sup>48</sup>

Aspect	Details
Type	Public/private – research partnership between University of Rhode Island and private capital to create joint Greenfins entity
Mission (summary)	Create viable closed-loop aquaculture of tuna in mainland USA.
Focus	Research and development of aquaculture systems in tuna, predominantly yellowfin, life cycle science and mortality causes of tuna species.
Funding	Little public data – appears to be funded by private capital partner.
Nexus	Species-centric – significant cooperation and data-sharing with other international institutions in advancing aquaculture techniques and life-cycle science.

A public-private partnership in which private capital has enabled a specific research programme at the University of Rhode Island, the GATCE aims to commercialise tuna aquaculture in the USA to meet growing consumer demand. While there is an element of public science to the programme, with data-sharing between other international entities and institutions and a number of graduate and undergraduate students hosted at the GATCE, the main objective appears to be commercialisation of as-yet proven techniques. Parallels for a proposed WRLC Centre of Excellence include a single-species focus, industry-led marine science for high-value species and a focus on collaboration with other institutions.

---

<sup>48</sup> [sic]

## Tuna Research and Conservation Center<sup>49</sup>

Aspect	Details
Type	Public/private – research partnership between private research entity and public funded aquarium.
Mission (summary)	Promote basic biological research on tuna species and captive husbandry.
Focus	Research and development of husbandry of fast-moving migratory fish, primarily tuna, with view towards conservation, basic biological research on captive population, and data collection techniques.
Funding	Little public data – appears to be funded by combination of donations, grants, private funds and research collaborations.
Nexus	Species-centric – significant cooperation and data-sharing with other international institutions in advancing husbandry and biological science.

An unusual public-private partnership in which the private entity is a research organisation (Stanford University), the TRCC has operated since 1994 to perform basic biological research on captive tuna and other migratory fish species. While not explicitly commercially focused, the ongoing work on tuna husbandry has been of interest to industry and other institutions, and a range of collaborations have been undertaken. Similarly to the proposed Centre, the TRCC is primarily focused on basic biological and biomechanical research aimed at better understanding a species of high commercial value.

## The National Lobster Hatchery

Aspect	Details
Type	Not-for-profit – charitable foundation for conservation and research
Mission (summary)	Stock enhancement programme to stabilise UK populations of US/EU lobster.
Focus	Captive husbandry, breeding and wild release of hatchery-bred lobster juveniles, research into lobster husbandry and breeding.
Funding	Publicly funded through grants and donations.
Nexus	UK

A charitable foundation based in Cornwall, UK, the National Lobster Hatchery aims to rebuild local populations of the US/EU lobster along the UK coast, thus supporting fisheries sustainability and the livelihoods of coastal communities. The majority of their efforts focus on a breeding programme, followed by wild release of juvenile lobsters into targeted locations. Operating as a charity, the Hatchery has no particular commercial nexus, but is broadly supported by the UK lobster fishing industry to ensure the continued viability of the UK fishery.

---

<sup>49</sup> [sic]

## The AVC Lobster Science Centre

Aspect	Details
Type	Public/private – research undertaken at Atlantic Veterinary College of University of Prince Edward Island at behest of Canadian lobster industry and part funded by industry contributions
Mission (summary)	Apply principles of veterinary medicine to lobster health research and industry needs.
Focus	Lobster husbandry, pathogen research, growth cycles and health research
Funding	Little public data on exact split, but some public funding and grants paired with industry contributions through grants and levies
Nexus	Strong focus on Canada-specific issues and therefore US/EU lobster

Established in 2000 at the request of Canadian lobster industry, the LSC is entirely focused on fundamental research into animal health and husbandry specific to the Canadian lobster industry, and is somewhat unique in that it appears to be the only lobster research body attached to a veterinary school. Like the Maine Lobster Institute, research areas include not only pure science, but also downstream processing, supply-chain, product flow and market dynamics. With a specific mandate to respond to the needs of the local industry, parallels to the proposed WRLC Centre of Excellence are easily drawn.

## Experimental Aquaculture Facility

Aspect	Details
Type	Public/private – research partnership between University of Tasmania, Huon Aquaculture, Skretting, and State and Federal government
Mission (summary)	Advance Tasmanian aquaculture through directed, commercially relevant research.
Focus	Specialist research facilities and new science into salmonid species, attract regional and national seafood research expertise, address husbandry and environmental concerns.
Funding	Joint funding from industry partners Huon and Skretting, grants and other contributions from State and Federal government.
Nexus	Primarily focused on Tasmanian industry needs, particularly surrounding salmon aquaculture, but also Pacific oysters.

Opened in late 2015, the EAF is one of the largest aquaculture research facilities in the southern hemisphere. Designed specifically to allow research at scale and on larger individuals, while allowing for a full range of temperature and climate controls, the EAF is a significant investment by both industry partners and government which it is hoped will underpin further productivity gains in the Tasmanian aquaculture industry. The governance and funding model may be relevant to the proposed Centre of Excellence, as well as being an example of Australian (predominantly) single-species research.

## Fish Health Centre of Excellence

Aspect	Details
Type	Public/private – Tasmanian State Department of Primary Industries research institute part funded by industry funds, FRDC funding and Commonwealth grants
Mission (summary)	Hatch to harvest diagnostic, research and preventative medicine programmes for aquaculture.
Focus	Diagnostic expertise, development of vaccines suitable for usage in aquaculture systems, particularly salmon production.
Funding	Funded through State and Federal government grants, FRDC CRC funding, and levies raised through the Tasmanian Salmon Growers Association
Nexus	Primarily focused on Tasmanian industry needs, particularly surrounding salmon aquaculture, but aims to build global reputation in vaccine development and fish health diagnostics.

Opened in late 2015, the Fish Health Centre operates from the Tasmanian Department of Primary Industries' Animal Health Laboratories biosecure facilities in Mount Pleasant to undertake broad-based research into predominantly finfish health, particularly salmonids. The early focus of the centre has been on vaccines suitable for use in Australian aquaculture production systems. Part-funded by industry levies and focused on industry needs, the FHC may help inform the priorities and design of the proposed WRLC Centre.

## Norwegian Institute of Food, Fisheries and Aquaculture (NOFIMA)

Aspect	Details
Type	Public research institute
Mission (summary)	Increase competitive advantage along the complete production chain.
Focus	Broad-based research agenda for primary production, including in aquaculture, wild-catch seafood and land-based production.
Funding	Publicly funded through government expenditure. Some income from matched contributions, EU funding and industry sponsors.
Nexus	Broad research agenda. Aquaculture and seafood divisions focused mainly on fish health, genetics, production and farming systems, nutrition and marine biotech.

As one of the largest primary-production and food research institutes globally, NOFIMA undertakes a range of research programmes. Based in Norway, NOFIMA is strongly focused on applied research to benefit broad industry, although with no specific mandate it is not focused on single-species or -industry research. Highly regarded internationally, NOFIMA is also involved with a number of collaborative research programmes and data-sharing arrangements that may be relevant to the proposed Centre for Excellence.

## Skretting Aquaculture Research Centre

Aspect	Details
Type	Private – commercial laboratory.
Mission (summary)	Ensure continual profitability of Skretting company.
Focus	Research and development of aquaculture feed, ancillary research into captive husbandry of various commercial marine species.
Funding	Privately funded. Some co-research with partner institutions and entities or work on fee-for-service basis.
Nexus	Broad base for operations across most commercially farmed species.

A fully private research entity, the Skretting ARC is predominantly focused on developing specialise aquaculture feed for commercial supply. With a strong commercial focus, and a history of public/private partnerships, the ARC has amassed considerable expertise in its specialist areas of research.

## Appendix 5: Principles of Good Governance Framework

Principle	Subordinate Considerations
Lay solid foundations for management and oversight	<p>Are the Chair and CEO two different people?</p> <p>Are the respective roles of the Chair and CEO clearly defined?</p> <p>Is the time commitment of the Chair sufficient to enable him/her to fulfil their responsibilities?</p> <p>Are the roles of the board and the management team clearly defined?</p> <p>Is the process for board appointments and dismissals clear, transparent and agreed by all participants?</p> <p>Does the director receive formal letters of appointment outlining expectations, rights, responsibilities, terms and conditions?</p> <p>Are induction procedures in place to assist directors to quickly integrate and participate fully in board decision-making?</p> <p>Does the board meet regularly enough to be effective?</p> <p>Do directors have access to continuing professional development to maintain and update skills?</p> <p>Are individual performance evaluations of directors undertaken regularly?</p> <p>Is the process for evaluating the performance of senior executives known to participants?</p>
Structure of the Collaboration Board to Add Value	<p>Is the Chair independent?</p> <p>Are the majority of directors independent?</p> <p>Is the board skills based?</p> <p>How large is the board?</p> <p>Is there diversity on the board?</p> <p>Are performance evaluations of the board as a whole undertaken regularly?</p>
Promote ethical and responsible decision-making	<p>Has a code of conduct and standards of behaviour required of the board and senior executives been established?</p> <p>What procedures are in place to manage actual or potential conflicts of interest for board members from participant organisations?</p> <p>How are other conflicts of interest handled at the board level?</p> <p>Can participants have confidence in the board's integrity in respect of their legal obligations?</p> <p>Are policies in place for the reporting and investigation of reports of unethical practices?</p>



Principle	Subordinate Considerations
	<p>Are processes in place for reporting and investigating of reports of unethical practices?</p> <p>Are processes in place for reporting decisions of the board to participants and taking into account their issues and concerns?</p>
Safeguard integrity and financial reporting	<p>Has a finance and audit committee been established?</p>
Make timely and balanced disclosure	<p>Are policies in place to ensure collaboration communications about financial and non-financial issues are timely, factual, clear and objective?</p> <p>Are policies in place to ensure accountability at a senior level for compliance?</p> <p>Are those policies disclosed to participants?</p> <p>Is commentary on financial results issued to enhance the clarity and balance of reporting?</p> <p>Are senior management core entitlements disclosed to participants?</p> <p>Are board evaluations disclosed to participants?</p>
Respect the rights of participants	<p>Is there communications policy in place which details how, and how often, information will be communicated to participants?</p> <p>Are there general meetings that encourage the attendance of all participants?</p> <p>Is there clear consideration of those matters that participants need to vote upon and those that need to be addressed by the board?</p> <p>Is the latest technology used to communicate with participants?</p> <p>Does the collaboration have a website and are all communications accessible from the website?</p>
Recognise and manage risk	<p>Are there practices in place which identify, assess, monitor and manage both strategic and operational risk?</p> <p>Does the board regularly review and approve the risk management and oversight policies?</p> <p>Has the board established a risk management committee?</p> <p>Are the policies disclosed to participants, for example, by being placed on the CRC's website?</p> <p>Does the CEO or a relevant member of the CRC's management team advise the board in writing that the integrity of financial statements is founded on a sound system of risk management and internal compliance and control?</p>
Remunerate fairly and responsibly	<p>Is the level of board remuneration sufficient and reasonable?</p> <p>Is the relationship between remuneration and performance clear?</p> <p>Does the board have a remuneration committee to review and recommend levels of remuneration of senior executives?</p> <p>Is there a remuneration policy which motivates senior executives to pursue the long-term growth and success of the organisation?</p> <p>Is there a balance between fixed and incentive pay?</p>





# Western Rock Lobster Research, Development & Extension Plan

2014-2023



# Contents

<b>Foreword</b> .....	<b>3</b>
Acknowledgements .....	3
<b>1. RD&amp;E in Context</b> .....	<b>4</b>
WRLC Strategic View .....	4
RD&E Priorities and Investment .....	4
<b>2. WRL Fishery Snapshot</b> .....	<b>5</b>
Fishery Context .....	5
Fishery Management .....	5
Volume and Value .....	6
Markets.....	6
Free Trade Agreements.....	7
Likely Market Trends.....	8
Aquaculture – Friend or Foe? .....	8
Fishery Snapshot Summary .....	9
<b>3. Human Capacity</b> .....	<b>10</b>
Context and Learnings .....	10
Governance .....	10
<b>4. RD&amp;E Co-investment</b> .....	<b>11</b>
Collaboration and Management .....	11
WRLC Funding Model.....	11
<b>5. The WRL Business</b> .....	<b>12</b>
Value Chain and Risks.....	12
SWOT Analysis.....	13
WRLF Development Scenarios.....	14
<b>6. RD&amp;E Investment Capacity 2014-2023</b> .....	<b>15</b>
<b>7. The RD&amp;E Plan - Investment Horizon 2014-23</b> .....	<b>16</b>
Investment Area 1 – Resource Access .....	17
Investment Area 2 – Market Knowledge.....	18
Investment Area 3 – Communication & Education .....	19
Investment Area 4 – Fish Stocks.....	20
Investment Area 5 – Processing & Value Adding .....	21
Investment Area 6 – Labour & Skills.....	22
Investment Area 7 – Harvest Efficiency.....	23
Investment Area 8 – Other RD&E Matters.....	25
<b>Glossary</b> .....	<b>27</b>
<b>Appendix 1. Extract from 2011/12 RMAD Plan</b> .....	<b>28</b>

## Foreword

Research, development and extension (RD&E) is well known for contributing to a range of technological advances and expertise that leads to productivity growth, increasing our knowledge bank on our fishery and the important long term sustainability of our fishery. Funding of RD&E for the development of new technologies and knowledge is a fundamental component of the innovation and adoption processes.

This Western Rock Lobster (WRL) Fishery RD&E Plan will strategically focus our efforts on achieving the research priorities and objectives identified. The strategy has been informed by research strengths, opportunities, needs and metrics evident within the WRL industry along the value chain to our consumers.

If the WRL industry is to continue to grow and to take advantage of new opportunities, we must continue to innovate by using RD&E to develop new technologies, processes and products which will lift productivity, increase sustainability of production, and aid in opening new markets.

We have ensured that strong governance principles have been adopted and that there is close collaboration between industry, agencies and researchers.

The WRL industry contributes a compulsory 0.25% of our annual harvest GVP to the Fisheries Research and Development Corporation (FRDC) and the Australian Government matches that contribution. This Plan will facilitate a wide range of projects over the next 10 years to help fishers improve their production techniques, compile reliable information and to potentially increase the profitability of their businesses.

This RD&E Plan is a foundation for the future and has been designed to endure and yet be dynamic. For industry to reap the rewards and for objectives to be achieved it is important for all of industry to take up the innovation challenge and commit to the Plan.

I strongly believe that this RD&E Plan offers many opportunities for the WRL industry to advance. I am confident that it will serve as a catalyst for moving the industry into a leadership role for RD&E within the Australian fishing industry over the next decade.

Many thanks to those in the WRL industry and related sectors who freely gave their time to participate in the interviews, surveys and the joint RD&E and strategic planning workshops held as part of the WRL Council's development process. Thanks also to those who commented on the various drafts of this RD&E Plan. This final version now incorporates many of their useful suggestions. We will periodically revisit and, as necessary, modify this Plan to ensure the continued productivity of our research, development and extension efforts to meet our research goals.

It is indeed my pleasure to write this foreword for the first strategic RD&E Plan for Australia's most valuable wild harvest fishery; I commend it to one and all.

Basil Lenzo,  
Chairman, Western Rock Lobster Council (WRLC).

### *Acknowledgements*

This Plan has been developed with support from:

Western Rock  
Lobster Council



WA  
Fisheries



Government of Western Australia  
Department of Fisheries

WA Fishing  
Industry Council



Seafood Cooperative  
Research Centre



Fisheries Research and Development Corporation



**FRDC**  
FISHERIES RESEARCH &  
DEVELOPMENT CORPORATION

# 1. RD&E in Context

In August 2013 the Council met to determine its strategic view of the next decade to 2023. Time was also taken to address RD&E priorities and investments.

## WRLC Strategic View

**Strategic Vision:** The Western Rock Lobster industry will be a confident, viable and well respected industry. This will mean:

- Co-management of our industry;
- Secure rights of access to resources;
- Stewardship that results in stock abundance;
- Producing a premium product for world markets;
- Profitability for operators;
- Secure returns for investors;
- High public acceptance; and
- Working towards opportunity and security for the next generation of the industry.

**Purpose:** As the peak body for the industry, the Council provides leadership through information, consultation and representation.

**Guiding Principles:** The Council's critical principles are:

- Good governance and leadership;
- Integrity in terms of making decisions and standing by them;
- Transparency in dealings with industry and government; and
- Independence through self-funding.

**Challenges:** The Council's key issues are:

- Lack of market certainty;
- Zone allocations and access;
- Whale entanglements; and
- Uncertainty of funding.

Our critical challenge is Maintaining Unity.

**Our Goals and Strategies:** Three strategic goals have been set:

- Goal 1.** To increase industry confidence in the role and achievements of the Council.
- Goal 2.** To grow the value of the industry by 2 – 4% per annum.
- Goal 3.** To develop sources of independent funding within three years.

## RD&E Priorities and Investment

For the next two years (2014 and 2015) the Council's strategic intent in terms of RD&E is to focus discretionary research funding onto four critical investment areas:

- Resource access, including whale entanglements;
- Market knowledge;
- Communication and education; and
- Fish stocks.

From Year 3 (2016) onwards, discretionary research funds will be invested more broadly, to include processing, value adding, labour and skills, harvest efficiency and contingency areas.

Three Base Case assumptions were agreed:

1. The TACC and harvest tonnage will increase at ~2% p.a. enabling all products to sell into premium live markets just-in-time. (Note: the WRL Harvest Strategy is currently being developed.);
2. Effective nominal annual \$A beach prices will increase at 2.0% p.a., comprised of:
  - 1.0% p.a. gain in long term nominal \$A beach prices, plus
  - 0.5% p.a. productivity gain, plus
  - 0.5% p.a. price gain from in-market impacts of promotion, FTAs, etc.
3. Additional RD&E capacity will accrue from the WRLF's co-investors.

On this basis, over the 10 year life of this plan the:

- WRLF TACC will increase from 5,500 tonnes to 6,573 tonnes p.a.,
- Nominal beach price will increase from \$36.40/kg to \$40.21/kg,
- Nominal GVP will increase from \$200 million to \$264 million p.a.

Eight RD&E investment areas were identified (in decreasing order of priority):

- Resource access;
- Market knowledge;
- Communication & education;
- Fish stocks;
- Processing & value adding;
- Labour & skills;
- Harvest efficiency;
- Other contingency RD&E projects.

The need for RD&E across these eight areas will drive industry's investment strategy. As a guide, assuming the base case development assumptions defined above, the industry will need to contribute and invest a minimum of \$500,000 of its own funds in RD&E in the first year, rising to \$660,000 p. a. in Year 10.

## 2. WRL Fishery Snapshot

### Fishery Context

Fish is the world's largest meat category - 81% of marine harvest tonnage is edible. Seafood consumption will double by 2050 – rising nearly 300% per capita in Asia.

Australian wild fisheries are ranked in the top 5 globally for sustainability but access to this resource will be further constrained by marine planners.

Western Rock Lobster is Australia's most valuable single species wild capture fishery. The fishery is based on the spiny lobster *Panulirus cygnus*, a species native to Western Australia.

The WRLF ranges over 1400 kms of WA's continental shelf, fed by the south flowing warm waters of the Leeuwin Current. At 5,500 kms long (100 kms wide and 300 m deep), this current is the world's longest continuous coastal boundary current. In some La Nina years when it is flowing strongly, it extends from NW Cape to the west coast of Tasmania. The Leeuwin is a southward flowing current – this is unlike other southern-hemisphere western-continental boundary currents (African Benguela, South American Humboldt) that flow north. Leeuwin Current waters are warm and generally suppress nutrient upwelling. Therefore it delivers relatively low marine finfish catches.



Figure 1. Western Rock Lobster Fishery

However marine research in WA has long identified that the Leeuwin's characteristic flows and related water temperatures have a major influence on the WRLF's performance. This may also affect other factors related to seasonal migration patterns of whales.

Both the Western and, to a lesser extent, Southern (SA, TAS, VIC) Rock Lobster fisheries are directly influenced by the Leeuwin Current, and both yield large catches of high quality Australian lobster and other seafood.

Recruitment to the WRLF has been and remains a critical issue for all stakeholders. The latest research by industry and governments leads to the view that many factors impact puerulus settlement and recruitment to the fishery, including water column temperature variability, and storm and rainfall activity. This research continues.

The WRLF was one of the first limited entry fisheries established in the world (1963), and it was also the world's first fishery certified by the Marine Stewardship Council (MSC). The ongoing high environmental values and sustainable practices maintained in the fishery underpin the fishery's integrity and its MSC status today.

### Fishery Management

The commercial fishery's three zones service a large marine commercial harvest (~95% of the Total Allowable Harvest), and a recreational inshore fishery that has been allocated up to 5% of the TAH. Recent changes to the management structure of the fishery and the TACC (Total Allowable Commercial Catch) are having, and will continue to have, a substantial direct and indirect impact on all WRLF stakeholders – customers, license holders, social, environmental, community, and government.

Operating as an input fishery (Total Allowable Effort) since 1963, the commercial harvest averaged ~11,000 tonnes per annum. However the changing needs of stakeholders over the last 5 years, together with low fishery recruitment, has resulted in a restructure of the management of the WRLF to be a full tradable output (ITQ) fishery. Based on the interim harvest strategy guidelines the WRLC has recommended a 2014 season TACC of 5859 tonnes, a level that is around half of the long term harvest tonnage. However, the fishing season has been extended from 7.5 months to 12 months.

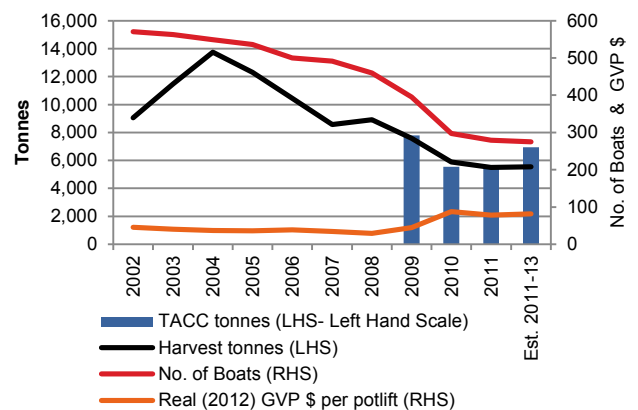


Figure 2. Trends in WRLF Harvest Volume, Boats, and Pot-lift Productivity to 2013

The WRLF quota is owned by individuals and enterprises from three groups: fishers, boat owners, and silent investors. This reflects the long standing history of both cross generational fishing families and the fishery generally.

No longer in a race-to-fish, license holders can now fish their quota to optimise overall margins at both ends of their value chain – higher productivity per pot-lift, and higher net beach prices driven by scarcity-in-market and a focus on fishing to meet the higher value live export trade. This live-just-in-time-to-market strategy (where supply of live fish is managed to just meet demand for premium live product) will also reduce through-chain holding costs.

## Volume and Value

The move to a quota management system has delivered early productivity gains per pot-lift (per Figure 2). While the detailed costs per pot-lift across the fishery are unknown (industry estimate in 2013 of \$7/pot-lift and \$10/kg landed), the real beach value of each pot-lift has increased significantly in the last 4 years. The exit of more than 50% of the boats from the fishery in the last decade has seen the fishery consolidate around more experienced and better capitalised fishers, with resultant improvements in average productivity.

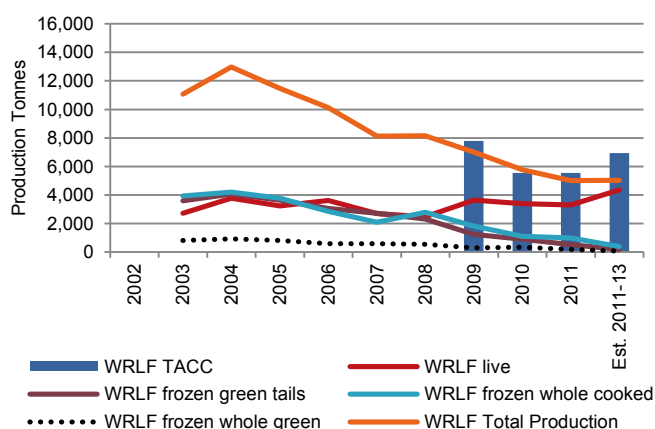


Figure 3. Trend in WRLF Production Volume by Product Line to 2011-13

The 2009-10 TACC reduction (which commenced before Quota introduction) reflects the trend in fishery harvest resulting from reduced puerulus settlement. While the TACC tonnage is rising (and adjusted for the 2011-13 transition to a 12 month season), the estimated lobster production tonnage (from WA Fisheries data, up to June 2013) confirms that live product's share has risen to dominate total WRLF output, per Figure 3.

Since 2002 the nominal (ie not adjusted for inflation) commercial beach value of the catch has fallen from \$305m in 2002, to an estimated \$195m in 2011. However when viewed in real value terms (2012 dollars), the GDP has fallen from just over \$400m to the current \$195m – a decline of 51% in the decade.

Beach prices over the last 20 years highlight two trends:

- the real 2012 \$ beach price for WRLF has risen just \$1.24/kg to \$36/kg (a 3.6% gain), well below the corresponding rise in aggregate catch costs (labour, fuel, infrastructure), and
- from 1992 when WRLF and SRLF product had the same real beach price (\$32-35/kg), SRLF product rose to \$60/kg in 2012 (up 88%), compared to the WRLF increase of 3.6%. This variance has arisen due largely to three issues:
  - WRLF has had much larger volumes than SRLF (avg. 2.3 times) to move through export markets and therefore had to rely on processed lines (cooked, tails) at lower prices and margins,
  - A decade of slow growth in the WRLF's key market, Japan, meant that \$A prices were depressed and new markets had to be opened and developed elsewhere, predominantly in China,
  - A preference for a more robust live lobster able to survive international airfreight has favoured SRLF over WRLF.

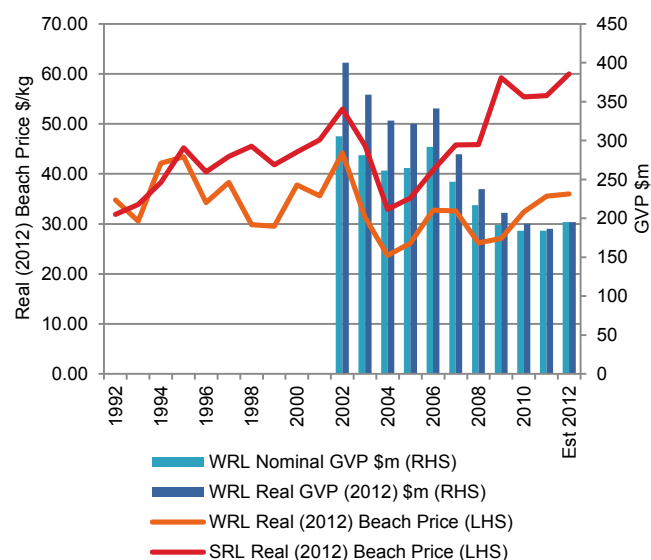


Figure 4. Trend in WRLF and SRLF Real Price and Value to 2012

In mid-2013, it appears that export volume and value trends are responding in new ways to the growth of the Chinese middle class consumer, as noted in the following discussion of markets. One outcome appears to be a sustained dramatic recovery in the WRLF price back up to par with SRLF prices.

## Markets

WRL product competes on global markets across four traditional product lines – whole cooked, whole raw, raw tails, and live lobster. Over the decade to 2012 WRLF product has averaged 63% of Australian lobster production, although this percentage has fallen to just over 50% in recent years since the WRLF TACC was reduced.



Individual global markets prefer specific product lines, but in aggregate volume terms the largest markets for WRLF product are China, Hong Kong, Japan, Taiwan, USA, and the Australian domestic market.

According to ABARES data, China is Australia's (and WRLF's) largest market by volume. Putting aside the dramatic rise since 2002 in the value of the \$A and the 2008-11 impact of the Global Financial Crises, it is clear that the China-Hong Kong market dominates Australian lobster supply (Figure 5).

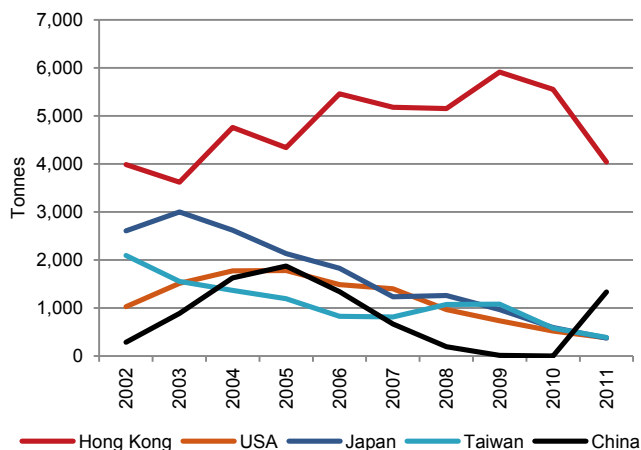


Figure 5. Trends in Australian Lobster Exports by Market Tonnage to 2011

Live product comprises an increasing share of Australian and WRLF supply, especially since the emergence of China's middle class consumers. This share is currently estimated to be 96% of harvest weight.

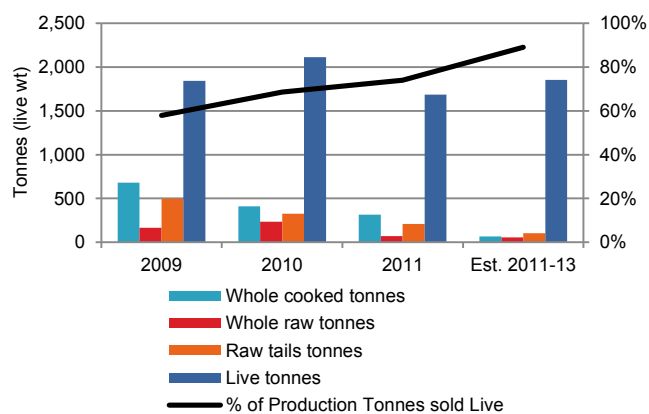


Figure 6. Trends in WRLF Production Tonnage by Product Line

### Free Trade Agreements

Free Trade Agreements (FTAs - bilateral, regional and multilateral) seek to maximise trade and market access benefits for all Australian producers, including seafood.

As the bulk of Australian lobster is exported in a live and highly perishable form, Australia's lobster fisheries are very exposed to export trade arrangements. Since 1983 Australia has established seven FTAs (Figure 7). However Australian trade representatives continue to face significant trade negotiation challenges with

economies that are Australia's key lobster markets – China, Taiwan, and Japan.

In April 2005 Australia and China commenced negotiations on a comprehensive FTA. In 2012 total trade between Australia and China/Hong Kong amounted to A\$125.2Bn – including Australian seafood exports of \$537 million (0.4% of total trade) and Australian lobster exports of \$295 million. Clearly seafood is a very small component of this bilateral trade. In October 2013 the Abbott Government announced its aim is to secure an FTA with China within 12 months.

FTA with	Status	Aggregate Market GDP - Lobster Market Impact
<b>Existing FTAs (\$US Bn)</b>		
New Zealand	From 1983	\$167 - lobster exporter
Singapore	From 2003	\$223 - lobster importer
Thailand	From 2005	\$346 - minimal lobster impact
USA	From 2005	\$15,700 - lobster importer & exporter
Chile	From 2009	\$248 - minimal lobster impact
ASEAN	From 2010	\$4,000 - importer & potential exporter
Malaysia	From 2013	\$304 - importer & potential exporter
<b>FTAs under Negotiation (\$US Bn)</b>		
China	Began 2005	\$8,227 - lobster importer – *NTBs also
Japan	Began 2007	\$5,964 - lobster importer – **food trade
Gulf Coop. Council	Began 2007	\$1,547 - lobster importer
Trans Pacific P'ship	Began 2008	\$27,558 - Canadian lobster exports
South Korea	Began 2009	\$1,156 - lobster importer – NTBs also
India	Began 2011	\$1,825 - minimal lobster impact
Indonesia	Began 2012	\$878 - minimal lobster impact

\*NTBs – Non Tariff Trade Barriers \*\* More liberal Food Trade is a core objective

Figure 7. Status of Australian Free Trade Agreements June 2013

According to China's official import trade statistics (excluding Hong Kong), China imported US\$5.76 Bn of seafood in 2011 (Ridge Partners Research 2013), which was driven by annual seafood tonnage import growth of 4.1% between 2006 and 2011. The bulk of imports are commodities (79% is frozen whole finfish) used largely as inputs to China's large export seafood processing industry. The main suppliers by value are shown in Figure 8.

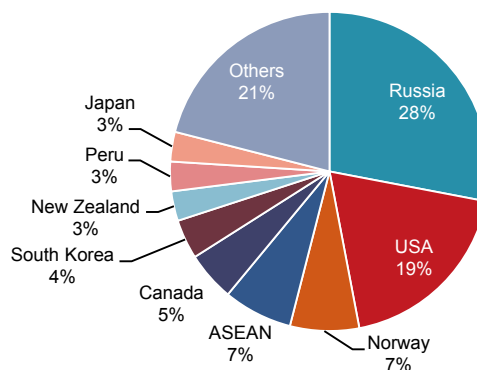


Figure 8. Value of China's Imports of Fish and Seafood by Source 2011

Official trade data for premium seafood only, suggests that China imported around 60,000 tonnes (some for

processing and re-export) in 2011, around 1% of the whole China market on a volume basis. While it is very difficult to verify this premium niche trade data, Chinese wholesalers with a substantial import trade in coastal Fujian Province, estimate in mid 2013 that the premium seafood market in China is currently worth between \$US 5-15 Bn at wholesale prices. By comparison the total value of all food and grocery imports to Australia (AFBC 2011) in 2009 was A\$25 Bn. Clearly the market potential for premium seafood and lobster exports into China is substantial and very attractive to Australia, New Zealand, Canada, USA and other exporters.

In 2008, New Zealand became the first western country to secure a Free Trade Agreement with China. In 2012, 96% of New Zealand made / sourced goods became tariff free into China, and Chinese Customs now guarantees FTA product entry within 48 hours of landing. New Zealand Southern Rock Lobster therefore has a more flexible entry strategy into China – to go direct to outlets via FTA sanctioned routes or via alternate entry channels. The result is that New Zealand product can match or better competitor importers' economics, product quality and outturn freshness.

In June 2013, New Zealand became the first member of the Organisation for Economic Cooperation and Development (OECD) to secure a Free Trade Agreement with Taiwan, another significant importer of lobster.

#### Likely Market Trends

While the available ABARES data are limited to 2011, recent market trends in 2013, indicate that:

- China will be the dominant global lobster market for the next decade. While trade channels (both access and volume) remain quite volatile it is clear the Chinese Government is seeking to better control the consumption of imported luxury goods, especially by government employees. However the fact remains that live lobster imports to China continue to grow strongly and new import channels for the product are being identified every year. New entry and distribution channels are emerging due to development of high-end hospitality and food services; better logistics infrastructure; heightened concerns over food health and safety; and increasingly sophisticated consumer demand. These new access routes include direct importers, high-end distributors and specialist channel sub-distributors.
- Increased supply of lobster is landing in the greater China market, especially *Homarus* lobsters live from Canada and whole frozen lobster from Florida, as well as spiny lobsters from the Caribbean.
- Small but increasing availability of refrigeration is now prompting consumers to look for higher quality frozen products – this opens the opportunity for processing of lobster in secondary Chinese markets that are not prepared to pay the higher prices for live product.

- Increased lobster supply to the greater China market is boosting competition and driving greater market segmentation and offer-differentiation. Live prices in mid-2013 range from \$40-50/kg for larger fish, compared to \$50-70/kg for smaller (400-700g) sizes. As noted earlier, live landed prices for WRLF product in China are now very similar to live landed prices for SRLF product.
- Prices for live product (especially for smaller fish under 700g) in global markets are increasing at a faster rate than prices for processed product, due largely to maturing high-end consumer preferences in the China market. Given the 50% reduction in the WRLF TACC, fishers face increased pressure to high-grade their catch quota. In addition, processors with 50% less input volume now have limited incentive to invest capital in value adding<sup>1</sup> through cooking, freezing or tailing, but greater incentive to differentiate and leverage their live offer sourced from a globally sustainable fishery. The focus is on consumer differentiation of live product offers.
- The Australian domestic market continues to maintain the highest pricing and demand for larger WRLF frozen product.

### Aquaculture – Friend or Foe?

Global wild capture seafood supply has peaked and many fisheries are overfished and in recovery mode (FAO, 2010). Aquaculture will dominate fish-for-food by 2015 and be the only seafood source available to meet growth in global consumption. Aquaculture growth has averaged 8.7% p.a. since 1970.

OECD-FAO (FAO Agricultural Outlook 2011-2020) confirms that prices for aquaculture are growing faster than for wild catch, and will increase by 50% by 2020 (see Figure 9).

By definition, aquaculture controls inputs and productivity, and can therefore deliver greater certainty in supply volume, processing specification, and consumer product benefits. This attracts and motivates supermarkets and consumers to generally pay higher prices.

Global food and industrial production is evolving to include greater use of marine resources. Sustainable aquaculture will move its systems (by iterations in science, technology and investment risk) from wild harvest to near-shore pondages, to sea ranching, to marine cage systems, and on to comprehensive marine

---

<sup>1</sup> A number of stakeholders have noted the difficulty in adding value to a product that is already in its most valuable consumer form – live lobster. However, not all premium lobster consumers want live product, and selective development of premium lobster processed lines will meet this market need. In addition, the diversion of lower grade / out-of-spec lobsters to such processed markets will ensure WRLF's live branded offer always achieves premium prices against global competitors.

farms designed to survive marine engineering challenges.

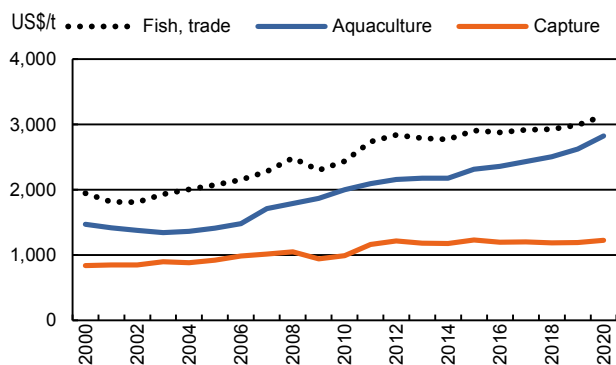


Figure 9. Trend and Forecast in Prices for Aquaculture and Wild Capture Seafood

Aquaculture demands viable species produced with appropriate technologies in sustainable locations. The intersection of unique species attributes, eating qualities, and food nutritional value drives the higher aquaculture margins required to finance domestication, selective breeding, efficient production and promotion. Prawns, Salmon, and Pangasius (catfish) are global examples of wild species that are now high volume - low margin global commodities.

Will lobster become an aquaculture species in the foreseeable future? And if so, will this threaten or enhance consumer demand for wild lobster? Given aquaculture's global track record the answer to the first question has to be "yes", but the timing is very uncertain. The rise of the farmed spiny lobster will likely enhance the niche market appeal for existing wild catch spiny lobster (as is evident across other global seafood species including abalone).

Aquaculture contributes 40% to Australia's domestic seafood beach value (including Pearls, but excluding Algae) and will dominate supply in coming decades. Australia produces only 28% of its seafood needs from wild catch. Trends indicate this will fall to 20% by 2050 as wild catch peaks and marine planners limit resource access. Australia will remain a net seafood importer – any gains in national seafood security must therefore come from new aquaculture.

Recent media from the world's largest full-service restaurant company (Darden Restaurants Inc., a USA corporation) suggests consumers will see aquaculture spiny lobster in the mid-long term. Darden (the world's largest single buyer of wild lobsters) has recently made two media announcements:

- 2012 - a US\$60 million investment in a joint venture greenfield spiny lobster aquaculture breeding and production facility in Sabah, Malaysia, and
- 2013 - an ongoing long term investor commitment in rock lobster aquaculture research. On the back of investments with University of Tasmania's specialist Institute for Marine and Antarctic Studies (IMAS) over the last

4 years, Darden and two Australian partners with IMAS are committing a further A\$16.9 million to ongoing rock lobster aquaculture research (hatchery, larval rearing systems and lobster health). The IMAS Director said: "The new investment places Australia at the cutting edge of aquaculture research, attracting global business opportunities. It provides opportunities for new aquaculture industries in Australia, not only for rock lobsters, but also longer-term through application of novel aquaculture systems to other sectors such as abalone, mud crabs, prawns and marine fish. An exciting prospect for this research is the potential for stock enhancement (the release of cultured seed lobsters), with consequent fisheries and conservation benefits."

Sustainable, viable new aquaculture sites are increasingly hard to find for these key species, including lobster. WA's extensive marine coastline and near shore waters offer a limited number of potential aquaculture development sites. The state has recently enacted new legislation to progress aquaculture zones near to current WRLF grounds.

## Fishery Snapshot Summary

It is clear that supply and market changes to fishery management and practices are resulting in fundamental changes in the risk profile of the WRLF. These impacts are already demanding changes at the next level as stakeholders reset the drivers for operational cash flows, capital allocation and returns, and welfare outcomes from the fishery.

In turn these changes will realign and reweight the investment incentives for all supply chain members – fishers, processors, agencies, and communities. Fishers have an incentive to innovate and implement productivity changes that leverage and then capture more of the aggregate WRLF chain margin.

WRL Fishers must determine how best to invest their limited funds in these RD&E opportunities – most opportunities are pre-competitive in nature and so collaborative co-investment is the most efficient approach. The drive for efficient investment will prompt stakeholders to realign fishery RD&E investment plans, governance structures, and RD&E funding streams to optimise fishery performance for all stakeholders.

## 3. Human Capacity

### Context and Learnings

There is limited data available to identify current trends in labour market availability and status for the WRLF. Only two studies have been identified.

A study in 2009 (*Baseline Economic Data Survey - Industry Update*, Bird Cameron 2009) estimated the average age of active lobster fishermen to be 46 years, down from 47 years in 2007. Survey respondents ranged from 25-62 years. Approximately 30% (ie 120) of the boats active in the WRLF in 2009 have since left the fishery.

Industry advice in 2013 suggests that the average age of WRLF license holders in 55 years, and approximately 30% of the license holdings are operated by 2<sup>nd</sup> or 3<sup>rd</sup> generation fishing families.

The social wellbeing of industry participants has been reviewed on two occasions since 2007 (WRLF Industry Consultation to Review ITQ Impacts, KAL Analysis, 2011; and Social Impact Assessment, FRDC 2004/247, Huddleston & Tonts, 2007). The 2011 review specifically focussed on social impacts flowing from the WRLF transition to ITQs. The relevant conclusions from the study were that:

- The roles of WAFIC and WRLC were ill defined and this had led to a lack of trust in the industry's communication process,
- There was a widely felt concern that the industry was losing its skills base, and that steps should be taken to protect and nurture skills for future industry security,
- There was little opportunity for young people to develop leadership skills or capacity, thereby limiting the future development of the industry,
- A number of industry capacity building initiatives and adjustment strategies should be implemented to overcome these adverse social impacts.

### Governance

The industry's governing body for the WRLF is the Western Rock Lobster Council. Formed in 2001, the Council is a non-profit incorporated organisation addressing issues affecting fishermen (MFL holders), and representing their interests in the fishery.

The Council's Constitution identifies a number of objectives relevant to the effective pursuit and management of RD&E in the WRLF, including specifically the following:

- (e) to act as an advisor to or intermediary between the catching sector, Government and its agencies and the community;
- (f) to promote efforts within the Western Rock Lobster industry for the resolution of common problems;
- (g) to appoint and/or nominate representatives to various bodies;

- (h) to ensure the sustainable development of the Western Rock Lobster fishery;
- (i) to conduct projects relevant to research and development in and the promotion of the Western Rock Lobster Fishery and industry;
- (j) to conduct an industry conference no less than every two years;
- (k) to do any of those activities that are considered necessary by the Council to obtain for the Western Rock Lobster industry the best economic conditions that can be achieved, or otherwise promote the interests of the members of the Council.

The linkages between the WRLC and related policy and RD&E organisations are illustrated in Figure 10.

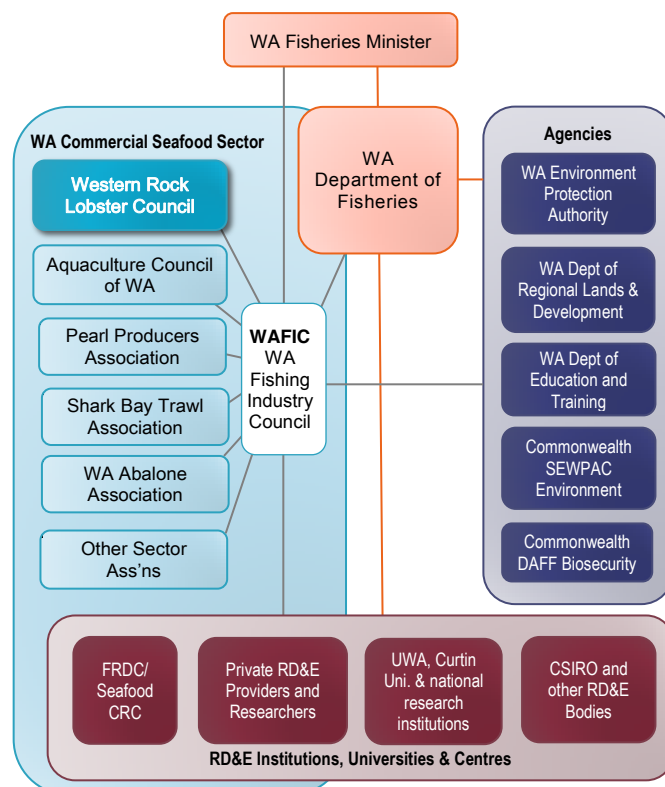


Figure 10. WRLC Organisational Landscape

Within the WRLF, the WRLC liaises with a number of Professional Fishermen's Associations (PFAs) and industry groups, including:

- Central West Coast PFA,
- Dongara PFA,
- Geraldton PFA,
- Kalbarri PFA,
- Leeman PFA,
- Latitude 31 PFA,
- Southwest Coast PFA,
- United Mid West Fishers Association,
- WA Rocklobster Fishers Federation,
- Combined Zone C Association
- Combined Zone B Management Advisory Committee (MAC).

## 4. RD&E Co-investment

### Collaboration and Management

Regarding RD&E matters, the Western Rock Lobster Council works with the WA Fishing Industry Council (WAFIC - the state's peak commercial fishing organisation), key agencies in state government (including WA Fisheries), the Seafood Cooperative Research Centre, the FRDC, and a number of specialist institutional and private researchers (Curtin University, WA University, etc.)

Up to now management of the WRLF RD&E investment has been a joint effort between WRLC, WAFIC and WA Fisheries, with projects considered and approved by the WAFIC FRAB (Fisheries Research Advisory Body). RD&E projects have been implemented by WA Fisheries, by WRLC and some via WAFIC. It is important to WRLC and other stakeholders that this co-investment is well planned and efficient, ensuring that duplication of investment is minimised and that industry is aware of and endorses the RD&E portfolio.

A new investment arrangement is currently under discussion between the parties. The WRLC and FRDC propose to establish an Industry Partnership Agreement (IPA). An IPA is between the FRDC and a sector body to manage a suite of sectoral projects over a specified time period against an agreed industry strategic plan. The priorities and projects selected are generally identified by the industry body and are specific to its needs. IPAs are currently in place in a number of sectors including Southern Rock Lobster and Southern Bluefin Tuna.

This new agreement will set out the RD&E investment and management arrangements linked to:

- WRLC's RD&E Plan,
- WA Fisheries' Research, Monitoring, Assessment and Development Plan (see RMAD Plan extract in Appendix 1), and to
- a dedicated governance structure (Figure 11).

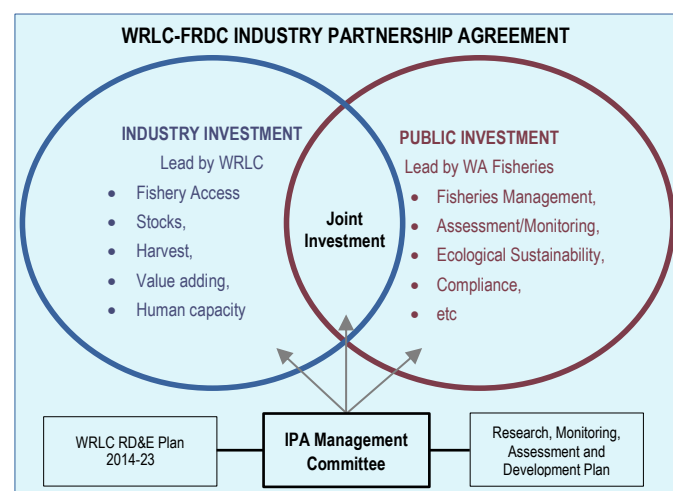


Figure 11. Proposed IPA structure for WRLC

The IPA will be between WRLC and FRDC, but WA Fisheries will be an active member of the IPA Management Committee.

The parties intend to establish the IPA in the first half of 2014.

### WRLC Funding Model

The WRLC currently has no secure independent funding model to sustain its industry role or manage the fishery's RD&E Investment Plan. The review of this funding arrangement is being considered as part of the development of the IPA.

As these discussions are still to be concluded, it is not yet confirmed how funds will be contributed and leveraged under the proposed IPA. However regardless of the new arrangements between WRLC, WAFIC and FRDC, the development of an IPA will mean that the RD&E investment funds previously managed by the WAFIC FRAB will now be invested by the IPA Management Committee guided by the WRLC RD&E, and RMAD Plans.

WRLF license holders currently contribute to funding streams to support fishery management, industry administration, advocacy, and to invest in RD&E.

Based on GVP ~\$200m	% of GVP	Approx. \$p.a.	Use of Funds
<b>WA Fisheries</b>	5.000%	\$10,000,000	Fishery management, compliance, ongoing monitoring and assessment with RD&E focussed on stock and environmental issues
<b>WAFIC</b>	0.375%	\$750,000	Community investment to support fisheries industry
<b>WAFIC/WRLC</b>	0.125%	\$250,000	Returned to WRLC to run that organisation
<b>RD&amp;E</b>	0.250%	\$500,000	Allocated to RD&E and leveraged via FRDC, SCRC, etc
<b>Total</b>	<b>5.750%</b>	<b>\$11,500,000</b>	

Figure 12. Source and Use of WRLF Funds

The WRLC considers these cash streams are insufficient in size and inappropriate in form to enable it to discharge its charter on behalf of members and license holders.

It is proposed that the WRLC receives all / or a proportion of, its funds directly from WRLF license holders. This approach will provide funding certainty to WRLC and provide the flexibility to directly seek additional resources from license holders (from time to time) with their consent to manage key issues (eg industry engagement regarding whale mitigation) as they arise.

# 5. The WRL Business

## Value Chain and Risks

### Resource Access and Harvesting

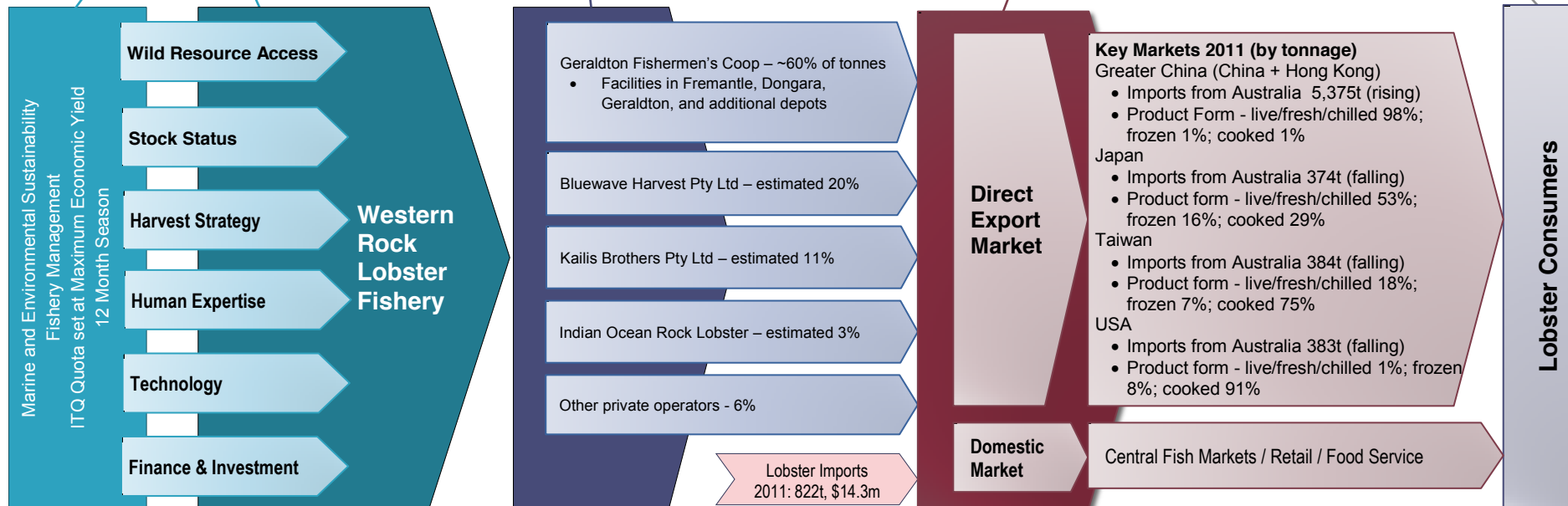
- WA State Fishery
- 3 Harvest Zones
- Certified by MSC
- ~250 boats
- 774,586 quota units
- Full quota managed fishery
- 12 month harvest season

### Processing & Distribution

- One large cooperative with global market share. Cooperative profit share distributed to members on basis of supply tonnage.
- Other private seafood processing firms
- Lack of airfreight capacity to key export markets
- Increased focus on live product along a just-in-time supply chain

### Markets & Competition

- China is world's largest consumer, importer, exporter and producer of seafood
- Chinese consumers regard live imported seafood (e.g. lobster, abalone) as luxury social symbols. Live catch is popular with wealthy urban elite on the east coast.
- Chinese see Australian and New Zealand lobster as homogenous - assume it is all Australian
- Food safety and sustainability are very important to Chinese – must be branded
- Increasing lobster supply to China including from competitors (Canada, USA, Caribbean, and New Zealand under Free Trade Agreements).
- Processing to service viable non-live markets where appropriate. This includes opportunities in Europe and USA, and emerging in China.



## SWOT Analysis

The following individual responses and opinions have been provided by the members of the Council.

	Today's Reality	Tomorrow's Strategy
<b>Beneficial capacity and options to be captured by WRLF</b>	<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Quota - Catch spread over 12 months and large coastline to maximise price</li> <li>• Documented history as an industry</li> <li>• Still have a reasonable level of participation</li> <li>• Stable government</li> <li>• Good research on the animals</li> <li>• Future looks good although coming out of low recruitment years</li> <li>• Professional, modern, efficient and innovative fleet, mostly financially sound</li> <li>• Have pristine waters - the biggest and most reliable aquarium (ocean)</li> <li>• No biodiversity problems</li> <li>• Efficient catching ability</li> <li>• Efficient product handling ability (98% live) and efficient trucks (in most factories)</li> <li>• Skills improving amongst fishermen – great job</li> <li>• Great improvement in technology on the catcher vessel and factories</li> <li>• Air freight good (but space limited at times)</li> <li>• Good profit and stock abundance</li> <li>• Huge demand for product, and also relative to the limited resource</li> <li>• Recovering stocks of all grades</li> <li>• MSC certified – sustainable fishery and premium product</li> </ul>	<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Educate and train WRL fishers and stakeholders, and community</li> <li>• More research into Big Bank lobster</li> <li>• Develop gear solutions to alleviate whale entanglements</li> <li>• Utilise the whale migration for financial gain via a public relations strategy</li> <li>• Lobster aquaculture in WA based on <i>Panulirus cygnus</i></li> <li>• Improve the marketing of WRL to key markets</li> <li>• Build alternative markets (eg USA) as insurance against collapse of China</li> <li>• Free trade agreement urgently needed with China</li> <li>• Maintain quality exporting live into more distant markets (Europe)</li> <li>• Establish a single desk marketing program for WRL</li> <li>• Promote the positives of marine stewardship across WRLF stakeholders</li> <li>• Identify and source airfreight alternatives</li> <li>• Improve the catch rate by better pots/bait/use of technology</li> <li>• Manage the harvest to just meet the market at the best price</li> <li>• Selling different products, setose, oversize - grow the market</li> <li>• Electronics, technology to lower the cost of production</li> <li>• Understand public views - to counter media hype re marine environment</li> <li>• Industry working together and across Australian lobster fisheries</li> </ul>
<b>Detrimental challenges to be managed or resolved by WRLF</b>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Decreasing number of processors – potential local lack of beach price competition</li> <li>• Only one real main market for premium price in larger quantities</li> <li>• Highly reliant on one market (China) and channel - additional border entry issues</li> <li>• Lack of fishers' support - fishers form lobby groups against WRLC</li> <li>• Not easy market access into China - no free trade agreement with China</li> <li>• Whale interactions (EPBC &amp; CITES listed) threaten removal of WRLF export license</li> <li>• Understanding of whale migration and lack of industry induced mortality</li> <li>• Bureaucracy provides limited assistance in assessing whale risks to WRLF exports</li> <li>• Lack of ample funding for a quality lobster representative body (WRLC)</li> <li>• Still no real understanding of the big decline in puerulus settlement</li> <li>• Government interference, incompetence and over charging for services</li> <li>• Inequity between industry on harvest – WRLF zonal factions – fisher infighting</li> <li>• Fishermen apathy about investing in RD&amp;E – 580 licenses/250 boats, many leased</li> <li>• There are no new participants entering the fishery</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Main market is communist state – highly unpredictable policy on imports</li> <li>• Closing of borders to China and other markets and/or high tariffs</li> <li>• Loss of access to part/all of fishery season due to whale threat or other threat</li> <li>• Limited capacity on airlines to fly to market</li> <li>• Warmer and more acidic oceans adversely impacting fishery</li> <li>• Low puerulus settlement</li> <li>• Green Groups</li> <li>• Ongoing whale interactions that restrict/preclude fishery access</li> <li>• Socio-economic study (Veronica Huddleston-2006) now that quota is in place</li> <li>• Increased designation of marine parks by governments</li> <li>• Overfishing if quota is set to high</li> <li>• Inefficient fishing methods reduce enterprise returns</li> <li>• Risk of access to live export market approval (whales)</li> <li>• Access to resource/supply/green groups/recreational fishers</li> </ul>

## WRLF Development Scenarios

The key risks have been identified, and the likely development scenarios framed, based on consultation responses from industry presented in the SWOT Analysis above,

	Sustainability & Resource Access	WRL Fishery & Harvest	Processing & Distribution	Markets & Consumers	What does this Mean?
<b>KEY RISKS</b>	<ul style="list-style-type: none"> <li>➤ Lack of access to the resource</li> <li>➤ Unplanned /adverse management or quota changes</li> <li>➤ Stock availability, specification and health uncertainty</li> <li>➤ Adverse whale interactions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Inefficient fishing / productivity</li> <li>➤ Growth in real beach price</li> <li>➤ RD&amp;E Effectiveness thru chain</li> <li>➤ Low RD&amp;E funds/governance</li> <li>➤ Low human capacity and skills</li> <li>➤ WRL Fisher infighting</li> </ul>	<ul style="list-style-type: none"> <li>➤ Decreasing processor capacity and investment</li> <li>➤ Lack of airspace for product</li> <li>➤ Viability of processing sector</li> <li>➤ Lack of RD&amp;E collaboration between fishers &amp; processors</li> </ul>	<ul style="list-style-type: none"> <li>➤ China market exposure/reduced live take</li> <li>➤ Market access denied</li> <li>➤ Consumers prefer other product</li> <li>➤ WRLF lobster not differentiated</li> <li>➤ Aquaculture reduces floor price</li> </ul>	
<b>Favourable (Hi) Scenario</b>	<ul style="list-style-type: none"> <li>• ITQ resource access ongoing; 12 month season; MSC certification</li> <li>• Increasing fishery recruitment</li> <li>• 3% pa. growth in TACC at MEY</li> <li>• WRLF Innovations overcome all adverse whale interactions</li> </ul>	<ul style="list-style-type: none"> <li>• 3% pa. growth in real price</li> <li>• 3% pa. fishery productivity gain</li> <li>• Whole-of chain RD&amp;E Plan</li> <li>• Secure funding for RD&amp;E, &gt;5 yrs</li> <li>• Whole-of-Chain RD&amp;E governance engagement, skills</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing beach price competition from processors</li> <li>• Access to Just-in-time airspace for all WRLF product</li> <li>• Processor collaboration in WRLF RD&amp;E funding/governance</li> </ul>	<ul style="list-style-type: none"> <li>• 4% pa Growth in China live</li> <li>• FTA between China and Aust.</li> <li>• Secure access in key markets</li> <li>• WRLF is preferred live supplier</li> <li>• WRLF co-invests to promote</li> <li>• WRLF finds secondary markets</li> </ul>	<p><u>Volume</u> impact: 4% pa TACC gain</p> <p><u>Value</u> impact: 4% real avg. price gain 1% productivity gain 2% market margin gain</p>
<b>Baseline Scenario</b>	<ul style="list-style-type: none"> <li>• Stable Fishery Management, but resource access threatened</li> <li>• Minimal growth in recruitment</li> <li>• 1% pa. growth in TACC at MEY</li> <li>• WRLF ignores adverse whale interactions and fallout</li> </ul>	<ul style="list-style-type: none"> <li>• 1% pa. growth in real price</li> <li>• No gain in fishery productivity</li> <li>• WRL Fishers only in RD&amp;E Plan</li> <li>• Current funding for RD&amp;E</li> <li>• Fishers only in RD&amp;E governance, engagement, skills</li> </ul>	<ul style="list-style-type: none"> <li>• Limited beach price competition from processors</li> <li>• No change in access to Just-in-time airspace for WRLF product</li> <li>• Benign processor impact on WRLF RD&amp;E funding/governance</li> </ul>	<ul style="list-style-type: none"> <li>• Good growth in China live market</li> <li>• Uncertain access in markets</li> <li>• WRLF is one of many suppliers</li> <li>• WRLF does limited promotion</li> <li>• WRLF has few alternate markets</li> </ul>	<p><u>Volume</u> impact: 2% pa TACC gain</p> <p><u>Value</u> impact: 1% real avg. price gain 0.5% productivity gain 0.5% market margin gain</p>
<b>Unfavourable (Low) Scenario</b>	<ul style="list-style-type: none"> <li>• Volatile Fishery Management, and resource access eroding</li> <li>• Volatile / declining recruitment</li> <li>• 0% pa. growth in TACC at MEY</li> <li>• WRLF unable to stem adverse whale interactions and fallout</li> </ul>	<ul style="list-style-type: none"> <li>• 0% pa. growth in real price</li> <li>• Falling fishery productivity</li> <li>• Falling support for RD&amp;E</li> <li>• Falling investment in RD&amp;E</li> <li>• Fragmented RD&amp;E governance, engagement, skills</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced number of processors</li> <li>• Decreasing access to Just-in-time airspace for WRLF product</li> <li>• Processors obstructing WRLF RD&amp;E funding/governance</li> </ul>	<ul style="list-style-type: none"> <li>• Fair growth in China live market</li> <li>• Risky access in key markets</li> <li>• WRLF has not differentiated</li> <li>• WRLF loses market share and margin as commodity supplier</li> <li>• WRLF has no alternate markets</li> </ul>	<p><u>Volume</u> impact: 1% pa TACC gain</p> <p><u>Value</u> impact: 0% real avg. price gain 0% productivity gain -1% market margin gain</p>



## 6. RD&E Investment Capacity 2014-2023

The WRLF Base Case Growth Scenario is based on 4 core assumptions:

1. TACC and harvest tonnage increases at 2% p.a. which enables all WRLF product to be sold on a just-in-time basis in premium live markets;
2. Long term nominal \$A beach price will increase at a conservative 1% per year (\$A beach prices react to market forces and have increased at over 15% in the last year);
3. In addition to the increase in nominal beach price, the returns to license holders will increase by a productivity gain of 0.5% p.a., plus a market premium gain of 0.5% p.a. based on in-market promotion under a China-Australia Free Trade Agreement. The effective nominal annual \$A beach price increase is therefore approximately 2.0%.
4. Additional RD&E capacity will accrue from the WRLF's co-investors.

The growth assumptions and related RD&E investment funds presented here in the Base Case Scenario are therefore quite conservative.

WRLF BASE CASE GROWTH SCENARIO		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014-23
Forecast Harvest	tonne	5,500	5,610	5,722	5,837	5,953	6,072	6,194	6,318	6,444	6,573	60,223
Forecast Nominal Beach Price	\$/kg	36.40	37.13	37.50	37.88	38.26	38.64	39.03	39.42	39.81	40.21	
Est. Nominal WRLF GVP	\$Mill.	200	208	215	221	228	235	242	249	257	264	2,318
Est. RD&E Funds Pool (matched)	\$'000	1,000	1,042	1,074	1,106	1,138	1,174	1,208	1,246	1,282	1,322	11,592
Investment Area	Share	Estimated Nominal Base Case RD&E Funding Available \$'000										
1. Resource Access	31.0%	800	834	322	221	228	235	242	249	231	238	3,599
2. Market Knowledge	14.6%	70	73	322	221	228	176	181	137	141	145	1,695
3. Communication & Education	13.0%	70	73	107	177	182	188	193	199	154	159	1,502
4. Fish Stocks	10.2%	60	63	107	111	137	141	145	137	141	145	1,186
5. Processing & Value Adding	9.2%	0	0	107	100	102	94	157	162	167	172	1,061
6. Labour & Skills	7.5%	0	0	54	144	148	164	85	87	90	93	864
7. Harvest Efficiency	5.2%	0	0	54	133	114	106	48	50	51	53	608
8. Other contingency areas	9.3%	0	0	0	0	0	70	157	224	308	317	1,077
TOTAL INVESTMENT \$'000	100%	1,000	1,042	1,074	1,106	1,138	1,174	1,208	1,246	1,282	1,322	11,592

## 7. The RD&E Plan - Investment Horizon 2014-23

This table presents target outcomes and co-investments under 3 investment horizons – near, mid and long term. This approach enables strategic and tactical flexibility across the investment portfolio, for example the relatively large investment in Resource Access issues (primarily whale mitigation) in Years 1-2.

Investment Area	Summary of Key Investment Outcomes	Co-Investors in RD&E	Near Term	Mid Term	Long Term
Base Case			Yrs 1-2 \$'000	Yrs 3-6 \$'000	Yrs 7-10 &'000
<b>1. Resource Access</b>	<ul style="list-style-type: none"> <li>This Investment Area aims to reduce interactions with marine wildlife, including whale migration pathways and risk</li> <li>Monitoring of whale interactions, plus other access risks</li> <li>Solutions to reduce gear interactions and impacts, noting that sonar activated sunken buoys have been tested in NSW, and may be an appropriate off-the-shelf solution for WRLF.</li> </ul>	<ul style="list-style-type: none"> <li>WA Fisheries</li> <li>WA agencies</li> <li>Federal agencies</li> </ul>	1,634	1,006	1,006
<b>2. Market Knowledge</b>	<ul style="list-style-type: none"> <li>China access - FTA, live plus other products, channels, competitors</li> <li>China market - growth in 2<sup>nd</sup> /3<sup>rd</sup> tier cities, etc</li> <li>Generic branded promotion of WRLF product</li> <li>Investigate "Australian Lobster"</li> <li>Alternative markets for live and value added product</li> <li>Lobster aquaculture and ranching - competitors</li> </ul>	<ul style="list-style-type: none"> <li>Other Australian seafood export sectors</li> <li>Other Australian exporters to China</li> </ul>	143	947	947
<b>3. Communication &amp; Education</b>	<ul style="list-style-type: none"> <li>WRLC Communication Plan - identify/sell key messages</li> <li>Internal and external engagement - fishers, processors, etc</li> <li>Education and awareness of key issues</li> </ul>	<ul style="list-style-type: none"> <li>WAFIC</li> <li>WA Fisheries</li> </ul>	143	654	654
<b>4. Fish Stocks</b>	<ul style="list-style-type: none"> <li>Tagging program</li> <li>Deep water puerulus</li> </ul>	<ul style="list-style-type: none"> <li>WA Fisheries</li> </ul>	123	495	495
<b>5. Processing &amp; Value Adding</b>	<ul style="list-style-type: none"> <li>Processing and distribution chain efficiencies</li> <li>Innovation for the live China markets</li> <li>Processing that enables lower China market risk</li> </ul>	<ul style="list-style-type: none"> <li>Seafood Processors</li> </ul>	0	403	403
<b>6. Labour &amp; Skills</b>	<ul style="list-style-type: none"> <li>Skills development/retention in Harvest &amp; Processing</li> <li>Occupational Health &amp; Safety – this Investment Area is currently under review by WAFIC and any WRLC investment will be made subject to the outcomes from that review when available.</li> </ul>	<ul style="list-style-type: none"> <li>FRDC / Primary Industries Health &amp; Safety Partnership</li> </ul>	0	510	510
<b>7. Harvest Efficiency</b>	<ul style="list-style-type: none"> <li>WRL Fishery economics and productivity data</li> <li>Pot design and innovation</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	0	406	406
<b>8. Other</b>	<ul style="list-style-type: none"> <li>Whole-of-Chain RD&amp;E Investment within the WRLC Governance model</li> <li>Whole-of-Chain Fishery economics and market offer</li> </ul>	<ul style="list-style-type: none"> <li>WA State and Federal agencies</li> </ul>	0	70	70
<b>TOTAL INVESTMENT \$'000</b>			<b>\$2,042</b>	<b>\$4,492</b>	<b>\$5,058</b>

## Investment Area 1 – Resource Access

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1.1 To understand whale migration pathways and risks relative to WRLF activity	<p>Whale migrations are dynamic, subject to variability (in biology, climate and the Leeuwin Current), and other factors.</p> <p>Whale migration pathways will not be constrained by the WRLF or any related policy intervention in the foreseeable future. Existing legislation is clear – per EPBC Act, and CITES.</p> <p>The WRLF must therefore take full responsibility with other fisheries, to manage interaction risks across its license holders, through spatial and temporal mitigation initiatives.</p>				
1.2 To understand the range of whale interactions, gear entanglements, and adverse outcomes	Work with industry partners and agencies to collate data, identify and detail the risks, impacts, and develop a range of solutions appropriate for WRLF license holders.	WRLC WAFIC WA Fisheries	WRLC WAFIC	Near Term	WAFIC WRLC
1.3 To reduce Whale Interactions and Impacts	Use Participatory Action Research approaches to develop solutions into fishery gear designs and procedural activities.	WA state agencies Federal agencies	WRLC PFAs	Both strategic and tactical	WA agencies Federal agencies
1.4 To determine the socio economic impact on the WRLF, communities and other stakeholders from whales and other marine interactions	WRLF fishers are most at risk from ongoing interactions through potential loss of fishery access. They will respond to both regulator imposed legislative controls and to self- regulation based on commercial incentives.	Other marine resource users, eg petroleum	WA Fisheries		
1.5 To establish a WRLF strategy jointly with stakeholders to ensure ongoing fishery access	<p>Raise awareness across all license holders of the risk of loss of WRLF access.</p> <p>Educate fishers and WRLF stakeholders regarding optimal risk mitigation strategies.</p> <p>Monitor whale interactions and other access risks.</p>				

## Investment Area 2 – Market Knowledge

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
<p><b>2.1 To document impacts on supply chains and markets, resulting from elimination of input controls and extension to 12 month season</b></p>	<p>The WRLF move to ITQ output fishery management has had limited impact on the environment, but dramatic financial (reduction in harvest and GVP) and social (exit of boats from the fishery) impacts.</p> <p>WRLC Membership is now mostly by owner operators. Other supply chain and market impacts need to be identified, analysed and shared through the chain.</p>	<p>WRLC</p> <p>Processors</p> <p>Chain partners</p> <p>WA agencies – re socio economic impacts</p>	<p>WRLC</p> <p>Processors</p>	<p>Near-Mid Term</p>	<p>WRLC</p> <p>Processors</p>
<p><b>2.2 To understand market access, supply risks, demand growth and opportunities in China and other key markets (USA, Asia, Europe, domestic)</b></p> <p><i>(Note that initial discussions have been held between WRL/SRL and NZRL re potential research collaboration)</i></p>	<p>Chinese consumers hold the bulk of WRLF's future income. WRLF is highly exposed to China's live market.</p> <p>Understand the market opportunities for selected WRLF lines in USA, Europe, and the domestic market.</p> <p>A Free Trade Agreement is required, in order to be competitive.</p> <p>Understand aquaculture/ranching – uncertain timing/impact.</p> <p>Assess increased domestic consumption of WRLF product.</p> <p>Assess benefits and cost effectiveness of WRLF single desk.</p>	<p>WRLC</p> <p>Processors</p> <p>Chain partners</p> <p>Federal Dept. of Foreign Affairs and Trade</p>	<p>WRLC</p> <p>Processors</p> <p>WAFIC</p> <p>WA Agencies</p>	<p>Near-Mid Term</p>	<p>WRLC</p> <p>SRL</p> <p>Processors</p> <p>FRDC/SCRC</p>
<p><b>2.3 To facilitate market knowledge to WRL Fishers and key stakeholders – establish a WRLF thru - chain Marketing Subcommittee</b></p>	<p>Moves to ITQs, TACC reduction, and a season extension have all collectively increased WRLF's market risk.</p> <p>Market risks (price/quality/consumer preferences/in-market competition/product delivery/political) have all increased due to smaller WRLC volumes. Need to better understand these risks in order to manage them.</p>	<p>WRLC</p> <p>Processors</p> <p>Chain partners</p>	<p>WRLC</p> <p>Processors</p>	<p>Mid Term</p>	<p>WRLC</p> <p>Processors</p>
<p><b>2.4 To investigate the viability of an “Australian Lobster” branding and export concept</b></p>	<p>Australian lobster (WRL, SRL, Tropical Rock Lobster, and Eastern Rock Lobster) is well established and highly regarded. But reduced share of market volume means our live exports must differentiate a premium offer, targeted at specific consumers in their preferred food service outlets. Branding is essential.</p>	<p>WRLC</p> <p>Processors</p> <p>Chain partners</p>	<p>WRLC</p> <p>SRL</p>	<p>Mid Term</p>	<p>WRLC</p> <p>Processors</p> <p>FRDC / SCRC</p>

### Investment Area 3 – Communication & Education

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
3.1 To establish a Communication Plan for WRLC	<p>WRL Fishers and industry stakeholders face many dynamic risks – from resource access through to consumer markets.</p> <p>Effective media management is a core component of resolving/reducing risk for many of these issues (eg whale entanglements). Embed the required RD&amp;E communication strategies within a WRLC Communication Plan.</p>	<p>WRLC</p> <p>WAFIC</p>	WRLC	Near Term	<p>WRLC</p> <p>External experts</p>
3.2 To maintain a close working relationship with all PFA's and related fishery groups: in order to identify and manage industry issues, engage license holders, and update industry codes of conduct, and promote best practices	<p>WRLC is a membership based organisation as defined in its Constitution, Vision, and Strategic Plan.</p> <p>The RD&amp;E Plan and related investment strategy will be ineffective and potentially fail, without a close working relationship between WRLC and local fisher associations and groups. Engage more closely with all PFAs.</p> <p>Industry education and understanding of key issues is critical both among fishers (eg results of the tagging program), and jointly with processors, researchers and agencies.</p>	<p>WRLC</p> <p>PFAs</p>	<p>WRLC</p> <p>PFAs</p>	Near-Long Term	<p>WRLC</p> <p>PFAs</p>
3.3 To continue to invest in the education and training of all participants in the industry	<p>The commercial viability of the modern WRLF increasingly demands that license holders are engaged in many complex and dynamic issues, from the marine resource through to export consumers.</p> <p>Resolving commercial risks and making an acceptable commercial return for a fisherman relies on a comprehensive understanding of lobster biology and habitat, fishery laws and management rights, community expectations, harvest and distribution technologies, market dynamics and consumer preferences.</p> <p>Ensure all fishermen are aware of the key issues, impacts and practices.</p>	<p>WRLC</p> <p>PFAs</p>	<p>WRLC</p> <p>PFAs</p>	Mid-Long Term	<p>WRLC</p> <p>PFAs</p> <p>External experts</p>

## Investment Area 4 – Fish Stocks

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
4.1 To understand the ongoing health and status of the WRLF lobster biomass	<p>The unforeseen and compounding changes to WRLF recruitment (reduced settlement) have resulted in large and prolonged impacts on the viability of the fishery and many license holders, and the fishery management approach used.</p> <p>Ensure fishers and fishery managers invest in and maintain the research capacity and related tools to accurately forecast fishery stock status and performance through to markets.</p>	<p>WRLC</p> <p>WA Fisheries</p> <p>WA agencies</p> <p>Federal agencies</p>	WRLC	Mid Term	<p>WRLC</p> <p>WA Fisheries</p>
4.2 To document and monitor fishery status by selective use of a WRLF tagging program	<p>Fish tagging is an essential and often cost effective approach to monitor changes in the status of the fishery stocks.</p> <p>Use a Participatory Action Research approach to engage fishers in the tagging program. This is the most cost effective and efficient pathway to extend learnings and outcomes to fishers.</p>	<p>WRLC</p> <p>WA Fisheries</p>	WRLC	Mid Term	<p>WRLC</p> <p>WA Fisheries</p> <p>External experts</p>
4.3 To establish and maintain a deep water puerulus monitoring program	<p>Deep waters in the fishery are critical to breeding stock. Current puerulus monitoring occurs in shallow near-shore environments. Several studies have assessed the level of deep water puerulus settlement with no settlement recorded. Mesh pots indicate some settlement may occur in deep water but it is minor compared to that of near-shore waters. The indices generated by near-shore sites have been highly accurate predictors of future catches. Independent monitoring of these waters is essential to understanding the breeding status of the stocks.</p> <p>Participatory Action Research approaches that engage fishers in research will be the most cost effective and efficient pathway to extend learnings and outcomes to fishers.</p>	<p>WRLC</p> <p>WA Fisheries</p>	WRLC	Mid Term	<p>WRLC</p> <p>WA Fisheries</p>
4.4 To understand the movement of lobsters across the fishery, between zones, and on the overall TACC.	<p>Migration of lobsters across WRLF zonal boundaries results in changes in quota, allowable commercial catch and harvest values. This is a contentious issue between license holders.</p> <p>Understand migratory patterns and movements to improve harvest planning and scheduling for fishers.</p>	<p>WRLC</p> <p>WA Fisheries</p>	WRLC	Mid Term	<p>WRLC</p> <p>WA Fisheries</p>

## Investment Area 5 – Processing & Value Adding

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
<p><b>5.1 To maintain adequate processing capacity for the WRLF across key target markets and product lines</b></p> <p><i>(Note that while Processors did not attend the RD&amp;E planning workshop, the WRLC intends to engage with processors in long term market support and investment planning.)</i></p>	<p>Processors and distributors play a central role in the WRLF supply chain. Undertake RD&amp;E analysis to ensure:</p> <ul style="list-style-type: none"> <li>there is adequate "arms-length" beach competition for their product,</li> <li>changing consumer preferences (by product and market) can be fully met via existing processors and distributors,</li> <li>there is adequate flexibility in their supply chain to respond to unplanned risks, such as food contamination issues, bioterrorism, or unplanned market closures.</li> </ul>	<p>WRLC</p> <p>Processors</p>	<p>WRLC</p>	<p>Near –Long Term</p>	<p>WRLC</p> <p>Processors</p>
<p><b>5.2 To ensure and monitor a high standard of thru-chain product integrity</b></p>	<p>WRL fishers and their supply chain partners intend to maintain high level chain of custody and product integrity systems to support WRLF's MSC credentials and related offer to premium consumers. Refer Investment Area 8 for details.</p>	<p>WRLC</p>	<p>WRLC</p> <p>MSC</p>	<p>Near-Long Term</p>	<p>WRLC</p> <p>Processors</p> <p>External experts</p>
<p><b>5.3 To determine viable options for increasing airfreight capacity to key markets</b></p>	<p>Airfreight is the only viable logistics route for the WRLF live product to market.</p> <p>Airfreight capacity risk is direct and large. Undertake analyses to define, quantify and manage this risk.</p>	<p>WRLC</p> <p>Processors</p> <p>Chain partners</p>	<p>WRLC</p> <p>Processors</p>	<p>Near Term</p>	<p>WRLC</p> <p>Processors</p>
<p><b>5.4 To assess the opportunity for investment in a new CRC and other investment leverage opportunities</b></p>	<p>WRLC can be a direct investor in new RD&amp;E investment leverage opportunities, including possible new CRCs or similar structures.</p>	<p>WRLC</p> <p>WAFIC</p> <p>FRDC</p>	<p>WRLC</p>	<p>Near-Long Term</p>	<p>WRLC</p>
<p><b>5.5 New WRLF product development</b></p>	<p>The prospective development of a branded Australian Lobster concept (possibly jointly with SRL, TRL &amp; ERL) for export consumers, to target up-scale Chinese consumers.)</p>	<p>WRLC</p> <p>Processors</p> <p>FRDC</p>	<p>WRLC</p> <p>Processors</p>	<p>Mid-Long Term</p>	<p>WRLC</p> <p>Processors</p> <p>External experts</p>

## Investment Area 6 – Labour & Skills

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
6.1 To document and understand the human capacity required to maintain a viable and efficient WRLF - a Skills Audit	<p>WRLF and its related supply chain partners have limited data regarding or understanding of the status of their collective human capacity needs and related operational risks.</p> <p>As a significant regional employer the WRLF is often competing economically for skills and labour with the mineral and resource sectors. Undertake appropriate skills and human capacity analyses and audits.</p>	WRLC WAFIC	WRLC	Mid Term	WRLC WAFIC External experts
6.2 To work with WAFIC to establish and maintain an appropriate OH&S Code	<p>Wild catch fishing entails many Occupational Health &amp; Safety risks for WRLF operators and their employees.</p> <p>Participate in the FRDC's upcoming joint national seafood OH&amp;S initiative to provide the most cost effective pathway to meet required standards and manage OH&amp;S risks for WRLF stakeholders.</p>	WRLC WAFIC FRDC	WRLC	Near Term	WRLC WAFIC External experts
6.3 To deliver desired training to WRLF members	<p>Understand the human capacity gaps revealed by the Skills Audit (see 6.1). Establish a training program to fill these gaps.</p> <p>Continue to develop career path opportunities that will attract, retain and train people across the fishing industry and WRLF.</p>	WRLC	WRLC	Mid Term	WRLC WAFIC External experts
6.4 To provide opportunities for WRLC and PFA representatives to attend coaching and leadership programs	<p>WRLF viability depends on WRLC's ability to negotiate issues and risks beyond the control of each license holder (eg access to the marine resource and access to the live China market).</p> <p>It is critical that WRLC maintain the professional skills and capacity to lead WRLF members on key issues. (Refer Investment Area 8 for more details).</p>	WRLC PFAs	WRLC PFAs	Mid-Long Term	WRLC PFAs WAFIC External experts
6.5 Continuing to provide a safe workplace for all participants in the fishery	<p>Safe food and safe work places are essential prerequisites to attract employees, and access premium global markets.</p> <p>WRLF must ensure it maintains and monitors systems to achieve these outcomes.</p>	WRLF WAFIC	WRLC WAFIC	Near-Long Term,	WRLC WAFIC External experts



## Investment Area 7 – Harvest Efficiency

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
<p><b>7.1 To establish and maintain up to date WRLF economics and productivity data through the supply chain</b></p>	<p>Managing for profit requires all decisions to be based on sound and comprehensive knowledge. In turn this demands good ongoing access to operational and economic data.</p> <p>The WRLF maintains up-to-date data capacity to determine MEY and guide sustainable harvest strategies (see SCRC Project 209/714.10 – WA Fisheries). However there is very limited data available downstream of harvest. There is no benchmarking of supply chain efficiency or performance.</p> <p>As Australia's largest (and oldest) wild fishery by value, the WRLF has not yet established an effective data recording and management system beyond the catching sector. This gap is evident in contrast to all South Australian fisheries where economic data is well maintained, up to date and widely used by stakeholders and external professionals to guide investment decisions.</p> <p>Undertake appropriate analyses and establish ongoing economic data collation and management systems.</p>	<p>WRLC</p> <p>Processors</p> <p>WA agencies</p>	<p>WRLC</p>	<p>Mid-Long Term tactical</p>	<p>WRLC</p> <p>External experts</p>
<p><b>7.2 To improve harvest efficiency under a new ITQ fishery management system</b></p>	<p>The move to a 12 month season and quota based management system offers a range of possible cash flow and profit advantages to license holders.</p> <p>Fishers have limited capacity to undertake private/individual assessments of these impacts.</p> <p>Implement a limited number (say 3-5) of targeted RD&amp;E efficiency and impact assessment projects that would offer gains to most fisher members, including Timing of harvest, Frequency of fishing, and Pot redesign. Opportunities will be supported with investment funds where harvest efficiencies can be demonstrably improved.</p>	<p>WRLC</p>	<p>WRLC</p> <p>PFAs</p>	<p>Mid Term</p>	<p>WRLC</p> <p>PFAs</p> <p>External experts</p>

<b>7.3 To investigate and promote understanding regarding the health and presentation of live lobster in export markets</b>	<p>Research has been undertaken (largely by Geraldton Cooperative) to identify methods of potting which cause least damage to lobster legs and feelers. These methods were adopted across the fleet.</p> <p>An ongoing process has been implemented by WRL Processors and Fishers to continually review catch and handling processes so as to minimise damage and maximise quality. A number of outcomes have been achieved in the last 3 years:</p> <ul style="list-style-type: none"> <li>• new catch methods are being researched and developed to help reduce catch damage,</li> <li>• best methods of on-board measuring and handling were identified and standardised across our fleet,</li> <li>• new equipment for zero-handling grading of live lobsters was introduced,</li> <li>• a bar-coding system was introduced so as to be able to track lobsters throughout the processing and distribution system,</li> <li>• best practice methods for packing and cooling of live lobsters for transporting were implemented,</li> <li>• catch logging methods were changed so fishers could trace any lobster back to the boat it came from.</li> </ul> <p>Document the market outturn and value of these initiatives to ensure they are valued by markets and are meeting their point-of-sale preferences.</p>	WRLC Processors	WRLC PFAs	Mid Term	WRLC PFAs External experts
---	---	--------------------	--------------	----------	----------------------------------

## Investment Area 8 – Other RD&E Matters

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
<b>8.1 To develop and maintain appropriate leadership skills and human capacity in WRLC</b>	<p>The WRLC is an incorporated peak organisation, with a charter to lead and represent the interests of license holders and members. Council decisions impact (directly and indirectly) all stakeholders - fishers, processors, community members, agencies consumers, and the general public. Effective and transparent governance is essential for optimum outcomes.</p> <p>The WRLC's human resources comprise current Board members, license holders, staff, and fishery supporters.</p> <p>Implement a targeted program to increase WRLF human capacity in three core areas:</p> <ul style="list-style-type: none"> <li>• Governance capacity – potentially via courses offered by Australian Institute of Company Directors,</li> <li>• Leadership development – potentially through the Australian Rural Leadership Foundation,</li> <li>• Media Training – via external professional training and expert advice.</li> </ul>	WRLC Processors WAFIC WA Fisheries FRDC	WRLC PFAs	Mid Term	WRLC PFAs External experts WAFIC
<b>8.2 To develop performance measures and reporting networks that promote WRLF's social licence to operate</b>	<p>Capture fishers (in particular) must secure and maintain the ongoing endorsement of the community to permit harvest from the public resource. This "social license to operate" is increasingly tested under a triple bottom line (environmental sustainability, social outcomes, and economic viability) and related legislation (eg CITES, EPBC Act, etc). Agencies, NGOs and the media increasingly focus on qualitative and quantitative measures of fishery performance.</p> <p>WRLC should proactively protect its MSC accreditation by working with communities, fishers, NGOs and experts to identify and report performance outcomes to selected audiences.</p>	WRLC Processors WAFIC FRDC	WRLC PFAs NGOs	Mid - Long Term	WRLC PFAs External experts WAFIC
<b>8.3 To confirm the current and future participation in MSC and recertification – assess who</b>	<p>The Marine Stewardship Council is the world's leading certification and ecolabelling program for sustainable seafood. As the first wild capture fishery certified by MSC, WRLF has since</p>	WRLC Processors	WRLC NGOs	Mid - Long Term	WRLC External experts

<p><b>pays the merits of continuing</b></p>	<p>been reaccredited twice, most recently in 2012.</p> <p>The financial cost of MSC certification to WRLF fishers is \$120,000-\$140,000 over 5 years. The benefits from this WRLF investment flow (directly and through spinoffs) to the WRLF fishery, consumers, the State of WA, and the broader Australian seafood industry.</p> <p>Conduct an independent review of the direct and indirect outcomes from MSC investment and consider who should share the costs. Consider the level of chain-of-custody accreditation that is best for WRLF and whether MSC is the best pathway to achieve this.</p>	<p>WAFIC</p> <p>FRDC</p>			<p>WAFIC</p>
<p><b>8.4 To engage with and extend knowledge to community</b></p>	<p>As a large and geographically disparate fishery, the WRLF is primarily a regional fishery dominated by WA regional communities. For a number of mutually beneficial reasons (eg social license to fish, availability of employment skills) WRLF must engage with all regional communities regarding mutual issues and outcomes.</p> <p>Establish and implement a plan to advocate and promote WRLF and industry benefits to regional communities.</p>	<p>WRLC</p> <p>Processors</p> <p>WAFIC</p> <p>WA Fisheries</p>	<p>WRLC</p> <p>PFAs</p>	<p>Mid - Long Term</p>	<p>WRLC</p> <p>PFAs</p> <p>WAFIC</p>
<p><b>8.5 To conduct a Biennial Conference/festival</b></p>	<p>For many years the WRLF has led wild fishery development and innovation in Australia. Recent feedback from stakeholders, agencies and third parties indicates that this leading role is being overtaken by other Australian fisheries (wild and aquaculture) that are better led, more innovative and better engaged with license holders and consumers.</p> <p>Reestablish a leadership role with internal (fishers, PFAs, processors, researchers, regulators, etc) and external stakeholders (agencies, communities, NGOs) by undertaking Industry conferences/events to promote WRLF's research outcomes, identify future needs, etc.</p>	<p>WRLC</p> <p>Processors</p> <p>WAFIC</p> <p>WA Fisheries</p>	<p>WRLC</p> <p>PFAs</p>	<p>Mid - Long Term</p>	<p>WRLC</p> <p>PFAs</p> <p>WAFIC</p>

## Glossary

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences, an agency within the federal Department of Agriculture, Fisheries and Forestry
AFGC	Australian Food and Grocery Council
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora, is a multilateral treaty that came into force in July 1975 to protect endangered plants and animals
EPBC Act	The Environment Protection and Biodiversity Conservation Act 1999 is the Australian Government's key piece of environmental legislation which commenced 16 July 2000
FAO	Food and Agricultural Organisation of the United Nations
GVP	Gross Value of Production
ITQ	Individual Transferable Quota
MFL	A Managed Fishery License in Western Australia
MSC	Marine Stewardship Council
NGOs	Non-Government Organisations
SOTF	Annual WA Fisheries "State of the Fisheries" Report
Value Adding	Any process (eg grading, manufacturing) or activity (e.g. packaging and Just-in-Time logistics management) that enhances the harvest value of fish, to meet end-user requirements.

## Appendix 1. Extract from 2011/12 RMAD Plan

This table highlights (in red) the relevant WRLF RD&E Projects managed under the WA Fisheries RMAD Plan.

Key to symbols in the matrix/summary tables:

- Indicates that the activity is funded and planned to occur
- Indicates that the activity is part of a proposal but is not yet funded

West Coast Western Rock Lobster Fishery Research Projects	Research Status	2011/12	2012/13	2013/14	2014/15	2015/16	Comments
<b>1. Retained Species Stock Analysis</b>							
<b>1.1 Basic Biology of indicator species (Growth, Reproduction, Diet, Natural mortality)</b>	Ongoing	■	■	■	■	■	Still some work required
<b>1.2 Other Biology</b>							
Recruitment Dynamics	Underway	■	■				Investigating 2008/09 recruitment failure
Migration	Underway	■	■				
Lobster spawning rates	Underway	■	■				
Lobster mating behaviour	Underway	■	■				UWA PhD student
Ageing of lobsters	Underway			■			Project with Curtin University - proposal for FRDC under development
By-product Octopus basic biology	Underway	■	■				The basic life history studied / recruitment
<b>1.3 Stock Assessment</b>							
Annual Assessment	Ongoing	■	■	■	■	■	
Develop New Model	Underway	■	■				Models updated as new data developed
Shallow Water Depletion Assess.	Underway	■					
Deep Water Depletion Assessment	Underway	■					Initial trials underway
Estimating harvest rates by tagging	Proposed			■	■	■	FRDC funding Approval
Change in Ratio and Index Removal	Proposed						Funded by the FRDC
<b>1.4 Fishery Monitoring</b>							
Ongoing	Ongoing	■	■	■	■	■	
Commercial Catch & Effort	Ongoing	■	■	■	■	■	
Processor Returns	Ongoing	■	■	■	■	■	
Commercial Monitoring	Ongoing	■	■	■	■	■	
Puerulus Monitoring	Ongoing	■	■	■	■	■	
Research Logbooks	Ongoing	■	■	■	■	■	
Spawning Stock Survey	Ongoing	■	■	■	■	■	
Fishing Power	Ongoing	■	■	■	■	■	
Recreational Catch and Effort	Ongoing	■	■	■	■	■	
Stock & recruitment	Ongoing	■	■	■	■	■	
Meshed Pot monitoring	Ongoing	■	■	■	■	■	
<b>2. Habitat &amp; Ecosystem</b>							
<b>2.1 Bycatch</b>	Ongoing	■	■	■	■	■	Monitoring
<b>2.2 Listed Species</b>	Ongoing	■	■	■	■	■	Monitoring of all interactions
Mitigation of whale interactions	Underway			■	●	●	FRDC funded another proposal submitted.
Sea Lion Interactions and behaviour	Completed						Pot design to stop juvenile sea lions entering pots has been developed and implemented
<b>2.3 Habitat</b>							
Ongoing	Ongoing	■	■	■	■	■	
Seagrass and Limestone reef effects	Completed						Sufficient for management
Coral Reef effects	Underway	■	■				Study at the Abrolhos Islands
Habitat Mapping	Underway	■	■				FRDC funded
Habitat - recruitment relationships	Proposal						FRDC proposal to understand relationship between habitat and puerulus recruitment requirements
<b>2.4 Ecosystem/Environment</b>							
Ongoing	Ongoing	■	■	■	■	■	
Deep water ecosystem study	Underway	■	■	■			Closed area monitoring
Jurien Bay inshore	Completed						SRFME/WAMSI study
Dongara inshore	Completed						CSIRO studies in the 1980s
Rottneest Sanctuary zones	Underway	■	■	■	■	■	Comparing fished vs. unfished
<b>2.5 Oceanography</b>							
Ongoing	Underway	■	■				
Leeuwin Current monitoring	Ongoing	■	■	■			
Oceanographic Modelling	Underway	■					FRDC funded

West Coast Western Rock Lobster Fishery Research Projects	Research Status	2011/12	2012/13	2013/14	2014/15	2015/16	Comments
Impacts of ocean conditions on catch rates	Underway	■	■				
Climate Change effects	Ongoing		■	■	■		FRDC funded
Ocean acidification - puerulus	Proposed				●	●	ECU proposal
<b>2.6 Other impacts on fishery</b>							Nothing identified
<b>3. Management Analysis</b>							
<b>3.1 Socio-economic</b>							
Bio-Economic modelling	Underway	■					In principle CRC funding
Economic Analysis (MEY)	Underway	■					Examination of Maximum Economic Yield
<b>3.2 Resource Access (Shares)</b>							
Determination of access shares	Periodic		■				Needed for IFM / ITQ
Monitoring of shares	Ongoing	■	■	■	■		Needed for IFM ITQ
<b>3.3 Compliance</b>							
Enforcement efficiency	Underway	■	■				
<b>3.4 Management Systems</b>							
Input vs output controls	Completed						Industry moving to Quota In 2010/11
<b>4. Industry Development</b>							
<b>4.1 Production Technology</b>							
Puerulus growout	First Stage Completed						Awaiting outcomes of policy on ownership of puerulus
More Efficient Lobster Pot Design	Underway						Fisher testing of pots
<b>4.2 Post Harvest</b>							
							Completed by industry
<b>4.3 Marketing</b>							
							Completed by Industry
<b>5. Priority Review</b>							
WRLC/WAFIC		■	■				Annual review of R&D plan
<b>6 Science Review</b>							
Stock Assessment	Ongoing	■	■	■	■	■	Last completed in detail in 2010
MSC audits	Ongoing	■	■	■	■	■	Yearly audits

# WESTERN ROCK LOBSTER COUNCIL STRATEGIC PLAN 2018-2021

## VISION

The Western Rock Lobster Fishery is an iconic global leader in sustainable fisheries management.

## MISSION

The Western Rock Lobster industry will be confident, sustainable and well respected.

## OBJECTIVES

1. The WRL industry is professionally managed to achieve a maximum economic contribution to the WA economy.
2. The WRL harvest strategy ensures long term access to the sustainable resource. (weight of evidence model doesn't vary more than 10%)
3. The community has sufficient confidence in the WRL fishery to support continuing access to the resource. (greater than 65% community survey response)
4. There is confidence in the WRL industry to attract and retain investment. (WRL Members Industry Confidence Index greater than 70% pa)
5. The WRL Council is proactively managing industry risk, reputation and development. (strategic plan reviewed annually, Industry confidence in WRL Council greater than 70% pa)

## STRATEGIES

Manage industry advocacy to secure resource access through a strong social licence to operate.

Collaborate and invest in targeted R&D, development and technology to drive GVP growth for future resource security.

Scope industry structure and development to deliver optimum value for the asset.

Manage the WRL Council as the peak policy and leadership body for the industry.

## TACTICS

### 2018 Priorities highlighted

<ol style="list-style-type: none"> <li>1. <b>Priority 2:</b> Manage professional advocacy and representation for the WRLF to government and stakeholder groups.</li> <li>2. Revise consultative frameworks to ensure they are inclusive of all stakeholders. E.g. PFAs, Recfishwest, processors, environmental groups, investors etc.</li> <li>3. Proactively identify, plan and manage coordination and collaboration across fishery sectors on common issues, ensuring priority action on WRLF issues and collaboration on key areas.</li> <li>4. Monitor fisheries issues to counter questions with clear evidence-based information, and participate in relevant representation.</li> <li>5. Improve public awareness of compliance and regulation in the WRLF, including crisis management protocols.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Priority 6:</b> Establish the National Institute for Spiny Lobster Research in WA, with recurrent funding mechanisms.</li> <li>2. <b>Priority 5:</b> Collaborate across other fishing sectors to develop a high standard of marine and occupational health and safety.</li> <li>3. Develop and update the Harvest Strategy in concert with DPIRD – Fisheries.</li> <li>4. Manage interaction with DPIRD - Fisheries on key issues of policy, RD&amp;E, resource sustainability and ensure consistent communication.</li> <li>5. Promote the outcomes and changed practices identified from WRLC investment in RD&amp;E to support adoption and future research.</li> <li>6. Identify and implement new digital applications to improve efficiency and assist in making more informed and better decisions across the value chain.</li> </ol>	<ol style="list-style-type: none"> <li>1. Invest in improving understanding and analysis of market, trade and industry data, broader trends and impacts for the WRL industry.</li> <li>2. <b>Priority 4:</b> Professionally manage the WRLF harvest strategy and TACC by accessing scientific, economic and industry expertise.</li> <li>3. Enhance the WRL fishery's value to WA economy and regional communities through evidence-based information, and leveraged relationships.</li> <li>4. Understand the relationships between the capital requirements of the industry and the impact between ownership and operational aspects for future security.</li> <li>5. Generate a shared value for the WRL industry investment of certification including MSC engagement to improve industry profile and image.</li> <li>6. In collaboration with industry, maximise the value of every kilo of lobster harvested.</li> </ol>	<ol style="list-style-type: none"> <li>1. Manage the WRLC with systems and best practice governance to build confidence in the Council's role and direction.</li> <li>2. <b>Priority 1:</b> Proactively manage internal industry and external community communications and stakeholder relationships.</li> <li>3. <b>Priority 3:</b> Invest in building human capacity and improving professionalism, to sustain industry advocacy and leadership.</li> <li>4. Secure a funding model that enables professional industry representation.</li> <li>5. Review the Risk Management Framework each six months to set and continuously review the strategic direction and investment priorities for WRLC.</li> </ol>
---	---	--	---







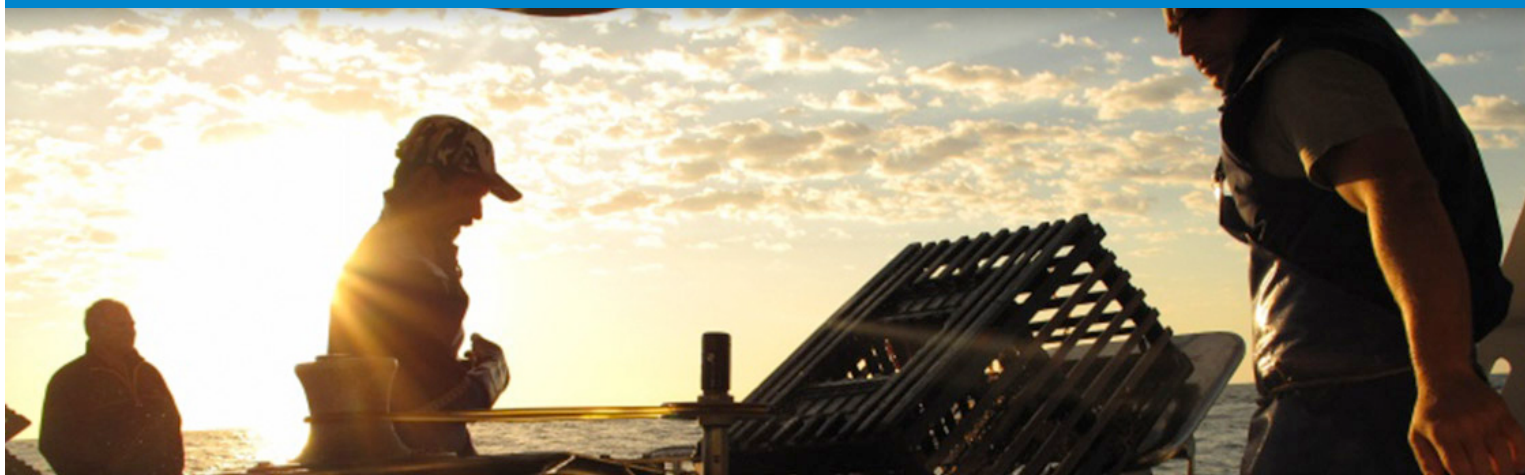
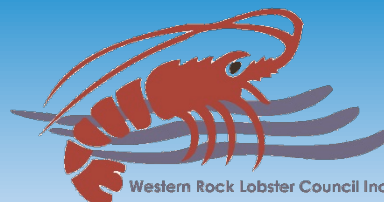
**CONFIDENTIAL**

# **WESTERN ROCK LOBSTER COUNCIL INC.**

Ensuring this valuable industry remains sustainable and viable

## **BUSINESS PLAN**

Prepared June 2015



**Prepared by Mathieu Paul and Michael Norrish**  
Representatives of Insight Consulting Partners as Facilitators  
and Advisers for the Western Rock Lobster Council Inc.

**ROCG Perth | Insight Consulting Partners**  
Level 1, 1109 Hay Street, West Perth WA 6005  
+61 8 6315 2700 [www.asiapacific.rocg.com](http://www.asiapacific.rocg.com)



# Executive Summary

## Who We Are

The Western Rock Lobster Council Inc ("THE WRLC") was established in 2001.

The WRLC is managed by a Board comprising twelve (12) directors which represent three (3) members from each of the Zone A and Zone B areas and six (6) from the Zone C area. The Board members are elected by holders of Managed Fishing Licences ("MFL").

## What We Do

The WRLC was formed to represent commercial licence holders in the Western rock lobster industry. That representation covers a number of different areas including: - industry intelligence; advice on rock lobster sustainability, advice and submissions to Government, sourcing funding for industry projects and providing ongoing advice to a number of associated and interested industries.

## Financial Forecasts

Financial modelling has been undertaken on two scenarios.

1. Current Arrangements where the WRLC receive 25 % of the 0.50% that WAFIC are allocated from the total 5.75% access fee.
2. Proposed arrangements where WRLC receive 50% of the 0.50% that WAFIC are allocated from the total 5.75% access fee.

Utilising Scenario 1 as a model going forward will not enable the WRLC to achieve its goal of becoming a viable and profitable venture in future years.

An annualised summary Profit and Loss for the periods 2015/16 – 2017/18 is as follows: -

WRLC P&L - Scenario 1	2015/2016	2016/2017	2017/2018
Revenue ex WAFIC	\$302,000	\$377,000	\$438,000
Overheads	(\$264,006)	(\$609,395)	(\$703,882)
Net Deficit	\$37,994	(\$232,395)	(\$265,882)
Other Movements (net)	(\$8,792)	(\$10,991)	(\$15,220)
Net Deficit	\$29,202	(\$243,386)	(\$281,102)



Should the WRLC continue under this arrangement the trading deficit would increase and is not either a viable or desirable outcome and would see the demise of an important industry body.

Scenario 2 paints a different picture and provides a good base for the WRLC to both continue and produce a viable outcome.

WRLC P&L - Scenario 2				
	2015/2016	2016/2017	2017/2018	
Revenue ex WAFIC	\$302,000	\$755,000	\$875,000	
Overheads	(\$264,006)	(\$609,395)	(\$703,882)	
Net Deficit	\$37,994	\$145,605	\$171,118	
Other Movements (net)	(\$8,792)	(\$6,592)	(\$4,500)	
Net (Deficit)/Inflow	\$29,202	\$139,013	\$166,618	

The proposed forecast changes would likely be effective from 1 July 2016. No change is expected in the 2015/16 financial period, hence interim financial assistance would be required from either WAFIC or the Western Australian government.

Full details and analysis of these summaries are included in the Forecasts section.

## Recommendation

It is clear from the forecasts prepared that the WRLC requires an increased level of funding for its ongoing profitability, viability and relevance to the rock lobster industry, if they are to provide the appropriate level of service to their members and at the same time develop a base to improve the cash reserve position.

The modelling indicates that of the 0.50% that WAFIC receive from DOF that the current allocation to the WRLC of 25% is insufficient and that percentage should increase to 50%.

This view is predicated on the fact that the rock lobster industry contributes in excess of 75% of the total funds received into DoF.

Of the subsequent 0.50% that is then provided to WAFIC, the rock lobster industry contributes in excess of 700% and based on forecast extrapolations that percentage figure will increase to around 800%+.

The WRLC is desirous of improving its relationship with the wider fishing industry and environmental groups to achieve greater harmony. Such harmony will enhance the image of all fishermen in the western fishery areas. To achieve that goal requires a greater level of operational funding.

The WRLC has spoken to all the other recipients of WAFIC funds to canvass their input as to the proposal to seek further funding. It was made clear to all parties that the WRLC objective was not to create any angst with WAFIC but just to receive a fair proportionate portion of the WAFIC funds. The WRLC maintain the view that cooperation with WAFIC is critical to the overall betterment of the fishing industry and they will continue to work collaboratively with WAFIC to that end. All other fishing sectors expressed their verbal support to the approach being taken.



Having a more robust cash flow will enable the WRLC to assist in: -

- a significantly more active role in whale and seal management;
- other environmental factors;
- greater liaison with industry and Government bodies
- greater consultation and input regarding marine parks strategy
- sustainability of operations with the capacity to provide greater/improved services to members.
- continued attention to prudent corporate governance
- development of a healthy balance sheet

If neither of the suggested options were available then the WRLC would have no alternative but to approach their members to impose a levy to compensate for the shortfall forecast. That strategy will take some time to implement; hence during the transition stage the aforementioned funding would still need to be made available from either WAFIC or ex the Western Australian Government.



# Contents

<b>The Organisation .....</b>	<b>6</b>
<b>Mission Statement .....</b>	<b>15</b>
<b>Vision Statement .....</b>	<b>15</b>
<b>Core Values .....</b>	<b>16</b>
<b>SWOT Analysis .....</b>	<b>17</b>
<b>Financial Information .....</b>	<b>18</b>
<b>List of Appendices .....</b>	<b>28</b>
<b>Appendix. Confidentiality Agreement .....</b>	<b>29</b>





# The Organisation

## The Business

The Western Rock Lobster Council Inc ("The WRLC") was established in 2001.

The WRLC is an incorporated non-profit body registered under the Associations Act and governed by a constitution, which is registered with the Department of Commerce in Western Australia. An ABN of 25 938 811 829 has been allocated and the WRLC is registered for GST.

The WRLC is managed by a Board comprising twelve (12) directors which represent three (3) members from each of the Zone A and Zone B areas and six (6) from the Zone C area. The Board members are elected by holders of Managed Fishing Licences ("MFL").

A diagram of the various zoned areas is as follows: -





## Background

The WRLC was formed to represent commercial licence holders in the Western rock lobster industry. That representation covers a number of different areas including: - industry intelligence; advice on rock lobster sustainability, advice and submissions to Government, sourcing funding for industry projects and providing ongoing advice to a number of associated and interested industries.

The WRLC constitution identifies a number of objectives including: -

- Act as an advisor and be an intermediary between commercial fishers, Government and the community
- Develop and make recommendations to the Minister of Fisheries on changes to the management plan
- Resolution of industry problems
- Appoint/nominate representatives to various bodies
- Ensure the sustainable development of the western rock lobster industry
- Undertake relevant research projects and promote the industry
- Undertake activities that enhance the interests of the rock lobster industry

The constitution is currently under review to ensure its relevance going forward. All voting members of the WRLC will have an opportunity to review any suggested changes and have input as required.

The main proposed changes to the constitution will relate to:

- Changes in the voting entitlement
- Changes in the composition of the board

Fishing is undertaken between Kalbarri in the north and Cape Leeuwin in the south. The industry is currently operating approximately 200 vessels and employing several thousand people both directly and indirectly.

In 2000 the rock lobster industry in Western Australia was the first in the world to be certified by the esteemed Marine Stewardship Council ("MSC"). In April 2015, at the Brussels seafood expo, it was officially recognised for leading the world in sustainability certification and received an award for 15 years of continuous certification.

Of all the fishing sectors in Western Australia, the rock lobster industry is the major income producing sector of them all (around 70%). The Western Rock Lobster fishery makes up around 20% of the total of Australian fisheries and produces in excess of 50% of the Australian lobster production, making the fishery the most valuable wild harvest fishery in Australia. The contribution to the Australian economy is significant. The rock lobster catch in 2013/2014 was 5,600 tonnes representing \$A271m in commercial value. The catch for 2014/2015 was 5,943 tonnes representing \$A357m.

The export market consumes in excess of 90% of the total West Australian production. The product is transported live by air worldwide.

Recent changes to the commercial rock lobster industry include removal of input controls and a limited season to a full 12 months quota managed fishery. This has facilitated a flatter catch profile, maximised individual fishers' efficiencies and given the market a consistent and stable supply all year round.





These changes to the management regime have given the industry a significant boost and lifted prices by more than double, improving the bottom lines for fishers and also export earnings to Australia.

The table below outlines the historical and forecast projection for rock lobster production.

## Rock Lobster Production

(Western Fishery)

	Tonnes	Beach Price (per kg)	\$A '000
2008/2009	6,148	\$25.00	\$190,588
2009/2010	5,080	\$31.00	\$182,880
2010/2011	5,088	\$35.00	\$183,168
2011-2013*	11,401	\$36.00	\$410,436
2013/2014	5,639	\$48.00	\$270,672
2014/2015	5,943	\$60.00	\$356,580

### Forecast

2015/2016	6,050	\$62.50	\$378,125
2016/2017	6,050	\$62.50	\$378,125
2017/2018	6,050	\$62.50	\$378,125

\*This period was longer due to the changes when moving to full quota.

- These forecasts are based on a quota year
- The table has extrapolated conservative average beach prices per kg (for the forecast period 2015/2016)
- 2016/17 and 2017/18 are also conservative as volume and resultant average beach price will be determined by the Total Allowable Commercial Catch ("TACC") which is recommended by the industry.



## Industry Access Fee

All commercial fishing sectors in Western Australia contribute 5.75% of their Gross Value of Production ("GVP") as an access fee.

The Western rock lobster industry GVP contribution to government is calculated on a 3 year rolling average of gross turnover based on the average beach price multiplied by the total Kgs.

The 5.75% is distributed to 3 recipients, being 5.0% to the Department of Fisheries ("DoF"), 0.5% to the Western Australian Fishing Industry Council ("WAFIC") and 0.25% to the Fisheries Research and Development Corporation ("FRDC"). WAFIC then re-distribute 25% of the 0.5% they receive to the WRLC to operate as a peak body. This is currently the only revenue source to the WRLC.

The table below shows historical and forecast projection of beach price.

## Rock Lobster Beach Price (per kg)

										Estimate	
2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18		
\$25.00	\$31.00	\$35.00	\$36.00	\$36.00	\$48.00	\$60.00	\$62.50	\$62.50	\$62.50		

IBIS World report on the fishing industry issued in February 2015 outlines that the rock lobster industry in Australia accounts for 32.6% of the total fishing industry with fin fish making up a slightly less proportion of 32.4%.

Although having a 32.6% portion of the industry, the revenue from the rock lobster sector is the largest contributor to total revenues.

Revenues for rock lobster do rely on the export market with in excess of 90% directed towards that market segment.

In general terms, Australian rock Lobster prices have increased (in \$US terms) over the past five (5) years. This has been occasioned by strong international demand and reduced supply. There is evidence to suggest that all worldwide suppliers are improving techniques and supply chains thus increasing competition.

As far as the wider fishing industry in Australia is concerned, Western Australia (22.10%) and Queensland (25.00%) are the largest operations. This is in part is brought about by the size of coastlines those two states enjoy which is around 55% of the total Australian coast.



## Business Premises

The WRLC sub-leases business premises from WAFIC, which is also shared with other sector bodies.

The premises are located at Level 1, 56 Marine Terrace, Fremantle WA 6160

A leasehold basis applies to the premises. In an expansion plan proposed/being contemplated, the WRLC will be seeking additional space within the existing WAFIC premises.

The WRLC holds the view that they and WAFIC are complementary organisations and as such close proximity is considered necessary and essential. The WRLC wants to ensure that the good working relationship they have established with WAFIC continues.

## Organisational Structure

The WRLC currently has 2 employees being the Chief Executive Officer ("CEO") and the Executive Assistant ("EA"). There are plans to engage an Executive Officer ("EO") to assist the CEO.

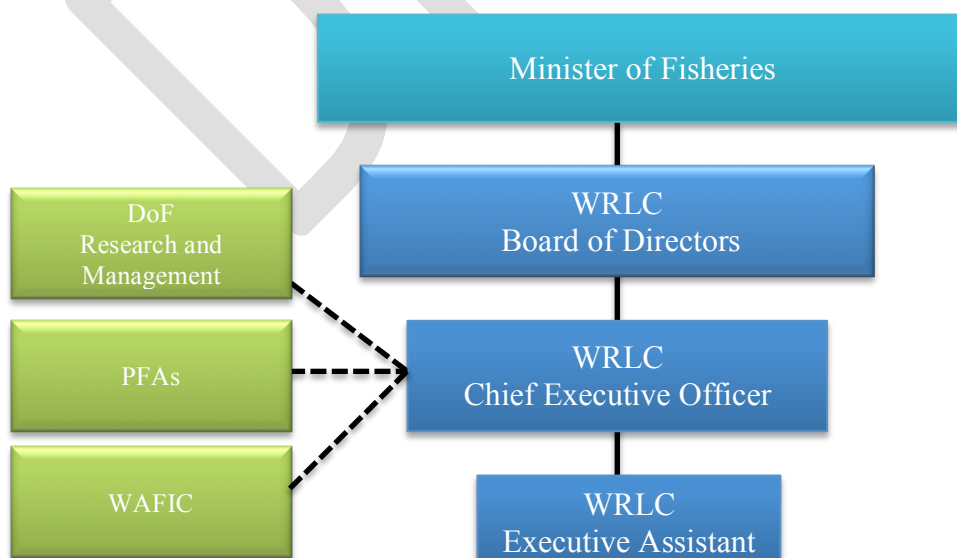
### Required staff

A proposal will be considered by the Board to appoint a suitably credentialed EO to assist the CEO on daily operational and commercial functions. This will enable the CEO to undertake a wider range of critical industry activities and achieve a greater benefit for the industry. It has also been recognized there is a critical need to develop programs which will identify and train future industry leaders.

Copies of the CEO, EO and EA job descriptions are attached at Appendix 1.

The CEO is accountable to the Board of Directors.

A current organisational chart is as follows: -





## **Professional Fisherman Associations. (PFAs)**

There are a total of seven (7) PFAs in Western Australia. The PFAs are a critical component of the industry as they provide local forums for discussions and resolutions of operational matters and concerns.

The WRLC intends to improve the level of support for the PFA in the North and South with financial and managerial assistance as required. The benefits will include consistency, more effective representation, less duplication and better attendance and feedback.

## **Corporate Governance**

In addition to the management, there are a number of committees and working groups comprised of Board members, industry representatives and external parties as required.

A list of committees and the respective members is attached at Appendix 2.

These committees are: -

1. Industry Partnership Agreement (Including a representative from DoF and FRDC)
2. Ministerial Whale Entanglement Mitigation Task Force
3. Operational Whale Entanglement Reference Group
4. Finance and Audit Committee
5. CEO Performance Review Committee
6. Constitution Working Group

The WRLC constitution allows for annual election of Board members with 50% of Board positions declared vacant each year.

The WRLC utilise the services of Tactica Partners for bookkeeping requirements. Accounting advice and review is provided by Carter Shrigley Johnson Pittorini, who also reviewed the 2013/14 financial statements.

Legal advice and guidance is provided at present by Glen Cridland on an "as required" basis. Ongoing legal advice and review will continue to be important given the anticipated changes to the commercial and legal environment.

As part of the corporate governance process, the WRLC has produced a Strategic Plan for the period 2013 to 2016 (see Appendix 3 attached) and a Research, Development and Extension Plan (see Appendix 4 attached) for the period 2014 to 2023.

## **Marketing**

At present little marketing is required due to the insatiable demand from China and other Asian geographic locations.



However, other international competitors are gaining market share. Regular marketing activities will be required to ensure further development of the Western rock lobster industry market and to maintain present market share.

At present any marketing on behalf of the industry is undertaken by the processors, who liaise regularly with the customers to maintain consistent supply and good relations.

## Processing and Distribution

All rock lobster catch in Western Australia is handled by the following organisations in the respective estimated portions. These are only estimates and will vary from year to year.

- Geraldton Fishermans Co-operative Ltd - 65% of tonnage
- Bluewave Harvest Pty Ltd – 10%
- Kailis brothers Pty Ltd – 10%
- Indian Ocean Rock Lobster – 10%
- Other minor private operators – 5%

## Competitors

Competitors for the Western rock lobsters industry are:

- Tasmania
- South Australia
- Victoria
- Cuba
- Mexico
- South Africa
- Canada
- Caribbean
- New Zealand
- USA

Competition is based on quality, freshness, taste and a reliable source of supply.

## Future Opportunities

Future opportunities have been identified and are outlined in the SWOT analysis later in this business plan.

Russia has the potential to become a volume buyer of high Quality Lobster. A lot of growth is possible in China with the lifting of tariffs. Niche markets throughout the world will help maintain high prices if China was to suffer any economic downturn and rock lobster appetite diminish.



## Historical Financial Information

Summary information of the WRLC historical income statements is as follows:-

	2011	2012	2013	2014	10 mths to 30/04/2015
DBIF/WAFIC	\$186,770	\$181,818	\$385,613		\$247,330
General				\$310,824	\$100,000
FRDC					\$126,000
One Life		\$67,360	\$21,680		
Project Income	\$73,304	\$63,285			
Lobster Congress	\$1,000				
Other Income	\$7,678	\$94,334		\$64,630	(\$1,408)
Interest Received	\$9,526	\$8,674		\$6,067	\$6,675
<b>Total Inflow</b>	<b>\$278,278</b>	<b>\$415,471</b>	<b>\$407,293</b>	<b>\$381,521</b>	<b>\$478,597</b>
Expenses	(\$274,198)	(\$437,571)	(\$469,955)	(\$338,075)	(\$245,251)
<b>Net Income</b>	<b>\$4,080</b>	<b>(\$22,100)</b>	<b>(\$62,662)</b>	<b>\$43,446</b>	<b>\$233,346</b>

Copies of the WRLC financial statements are attached at Appendix 5

In June 2010, the WA Government introduced (for an initial term of five [5] years) a new uniform funding model for determining access fees for the State's commercial fishing and aquaculture sectors. That term has now expired and in line with Ministerial Policy Guideline 21 ("MPG 21") the methodology for a new funding model (in conjunction with the fishing industry) is now due.

That review is intended to address (in part) the following scope: -

1. The level of access fee going forward based on GVP or some other methodology
2. Allocation to DoF, WAFIC and FRDC from access fee raised
3. Whether the 3-year rolling average is still appropriate for calculation purposes
4. The charge for aquaculture licence holders and methodology
5. Provision of portion of the access fee to WAFIC for aquaculture representation

The MPG 21 review is scheduled to be finalised prior to the end of 2015.



## Historical Western Rock Lobster GVP

The access fee paid to DoF was determined (in 2010) to be 5.75% of the Gross Value Production ("GVP") from all fishers in the Western Fisheries. This includes sectors other than rock lobsters.

Of that 5.75% collection, 0.50% is currently allocated to WAFIC with a further 0.25% allocated to the FRDC.

Currently, the WRLC receives 25% of the WAFIC 0.50% allocation to meet their operational costs.

Information obtained indicates that the rock lobster industry contributes around 70%-75%+ of the total inflow (0.50%) that WAFIC receives from the Western Fisheries.

WAFIC collections over recent years (with the WRLC contribution to the access fee also shown) are as per the following table: -

		(\$A'000)					
		2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Western Rock Lobster GVP		\$190,598	\$182,879	\$183,152	\$175,948	\$234,491	\$318,000
Western Rock Lobster GVP Rolling Average			\$186,739	\$185,543	\$180,660	\$197,864	\$242,000
WRLC Contribution to DoF	5.75%			\$10,669	\$10,388	\$11,377	\$13,915
WAFIC 0.5% from DoF	0.50%			\$928	\$903	\$989	\$1,210
WRLC 25% of WAFIC 0.5%				\$232	\$226	\$247	\$302

The forecast expectation for the forecast periods to 2017/2018 is as per the following table:-

		(\$A'000)			
		2014/15	2015/16	2016/17	2017/18
Western Rock Lobster GVP		\$354,000	\$378,000	\$378,000	\$378,000
Western Rock Lobster GVP Rolling Average		\$302,000	\$350,000	\$370,000	\$378,000
WRLC Contribution to DoF	5.75%	\$17,365	\$20,125	\$21,270	\$21,735
WAFIC 0.5% from DoF	0.50%	\$1,510	\$1,750	\$1,850	\$1,890
WRLC 25% of WAFIC 0.5%		\$378	*see Explanatory note		

\*Explanatory note: 2015/16 – 2017/18, under negotiation with WAFIC



2014/15 and 2015/16 WRL GVP figures were determined after consultation with DoF and processors. They are considered to be a conservative view.

2016/17 and 2017/18 WRL GVP figures have been determined using the above and are also a conservative estimation. Other factors taken into consideration include the fall of the \$US/\$A exchange rate which affects market prices combined with a possible rise in TACC. These would affect GVP in a positive way. For these purposes, the conservative average beach price was used and capped at \$378 million, representing 6,050 tonnes @\$A62.50 average beach price.

GVP is based on a 3 year rolling average and is calculated over 3 financial years (1 July to 30 June of the following year) not 3 quota years which run from 15 January to 14 January of the following year. For example, the 2013/14 financial year GVP flows through to DoF in the 2015/16 financial year.

DRAFT





# Mission Statement

*The WRLC will continue to be the peak industry body representing the views of commercial rock lobster fishers in Western Australia.*

*We provide the avenue to enable all rock lobster fishers to present any concerns they might have relative to the industry.*

*We will continue to maintain and grow close working relationships with Government, WAFIC, other peak commercial and amateur fishing bodies to optimise submissions and dialogue with that body for the betterment of all Australians.*

# Vision Statement

*The WRLC aims to be the "go to point of reference" for all rock lobster fishers in the western fishery.*

*By careful lobster resource management and good corporate governance principles, the WRLC will by the year 2020 have a healthy balance sheet and a comfortable cash position to assist its members with any help, guidance and where necessary any financial support they may require.*

*The WRLC will therefore be a viable and profitable organisation with a healthy respect within the fishing industry. This will be demonstrated by: -*

- *Good co-management of the industry along with DoF*
- *Production of a superior product for world markets*
- *Competent stock resource management for the longevity of the industry*
- *A continuing legacy for future fishers via abundant stocks*
- *Profitability for all operators*
- *Respect from the Green movement as being in balance with nature*
- *A model that all industries would aspire to emulate*



# Core Values

## Respect

The WRLC acts with a total respect to the Western Rock lobster fishery, its Fisherman, Environment and Australia.

## Quality

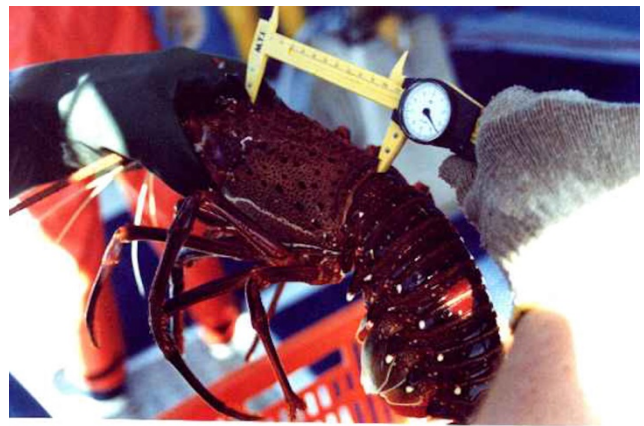
The WRLC has an uncompromising commitment to produce a quality rock lobster product, quality health and safety for its Fisherman and maintain a quality environment for lobsters.

## Integrity

The WRLC will operate in a strict corporate governance manner to ensure total transparency and complete fiscal responsibility.

## Consultation

The WRLC will have an open relationship with WAFIC and other Governmental departments based on mutual trust, respect, success and loyalty.





# SWOT Analysis

## Strengths

- Recognised and well respected industry body
- Strong capacity to determine where current and future markets exist
- Ability to adapt to changing circumstances
- Services to members represent good value
- Reputation of directors
- A very good understanding of the industry and the associated markets
- Many years of experience accumulated within the WRLC Board
- Highly knowledgeable and skilled senior management
- Catch now spread over 12 months in lieu of 7.5 months
- Strong capacity to both determine and remove any barriers to its growth and its industry development within the boundaries of sustainability and profitability

## Weaknesses

- Insufficient funding to meet operational requirements and establish satisfactory reserves
- Insufficient funding to promote the WA rock lobster industry on both domestic and international markets
- Highly reliant on China market
- Environmental issues (whales, seals, marine parks etc) – A need to be proactive

## Opportunities

- Increase of market penetration into other sectors to reduce reliance on China
- Increase in air space aspects – availability of more flights. (done by improving mortality in packing techniques) – Possible joint processor chartered flights
- Increased efficiencies to generate more profitability
- Introduce focused business and marketing strategies
- Raise perception of the WRLC amongst fishers
- Raise perception of the WRLC amongst general public. Public relations exposure
- Education of fishers in maximising catch via improved methodology/technology/gear
- Enhance dialogue with environmentally friendly associations and other potential parties where communication is currently not having a positive impact on the industry
- Improved environmental understanding and application
- Increase technical efficiencies – survival time of the lobster – maternity – pots to avoid those losses
- Monitor other potential markets



## Threats

- Fluctuating in market conditions (Supply and Demand)
- Reliance on China markets
- Competition from other providers
- Lack of fishing ability due to environmental issues (e.g. whale migration etc.)
- Global warming issues and impact on ocean currents
- Pressure from political groups (e.g. Greens) and associations
- Decline in puerulus settlement
- Increased designation of marine parks reducing fishing grounds by Government
- Overfishing if quotas are set too high
- Over supply
- Disease

DRAFT



# Financial Information

## Historical

The past four (4) years financial results for the WRLC can be summarised as per the following table: -

<b>Inflow</b>	<b>2010/2011</b>	<b>2011/2012</b>	<b>2012/2013</b>	<b>2013/2014</b>
DBIF Grants/WAFIC	\$186,770	\$181,818	\$385,613	
General				\$310,824
One Life		\$67,360	\$21,680	
Project Income	\$73,304	\$63,285		
Lobster Congress	\$1,000			
Other Income	\$7,678	\$94,334	\$42,139	\$64,630
Interest Received	\$9,526	\$8,674	\$5,798	\$6,067
<b>Total Inflow</b>	<b>\$278,278</b>	<b>\$415,471</b>	<b>\$455,230</b>	<b>\$381,521</b>
<b>Expenses</b>	<b>2010/2011</b>	<b>2011/2012</b>	<b>2012/2013</b>	<b>2013/2014</b>
Bank & Accountancy	\$2,505	\$3,202	\$3,948	\$17,315
Consultancy	\$38,234	\$142,284	\$18,606	\$0
Meetings	\$32,268	\$65,000	\$61,371	\$56,613
Office Operations	\$43,142	\$34,267	\$57,948	\$46,362
Travel	\$2,718	\$1,940	\$9,159	\$10,129
Projects	\$32,661	\$0	\$0	\$0
Wages & Salaries	\$116,286	\$187,431	\$315,930	\$205,630
Depreciation/Interest etc	\$6,384	\$3,447	\$2,993	\$2,026
<b>Total Expenses</b>	<b>\$274,198</b>	<b>\$437,571</b>	<b>\$469,955</b>	<b>\$338,075</b>
<b>Net Income/(Deficit)</b>	<b>\$4,080</b>	<b>(\$22,100)</b>	<b>(\$14,725)</b>	<b>\$43,446</b>



Inflow has been trending upwards as a result of the increased GVP excepting for 2014 where a slight decline occurred, mainly due to the beach price being considerably lower in previous years than the existing \$60/kg.

A Net Deficit occurred in both 2011/12 and 2012/13 mainly as a result of an increase in Wages & Salaries (\$116K in 2011 vs. \$316K in 2013) and in Consultancy Fees (\$142K in 2012). This latter aspect was as a result of activities associated with marine parks. The CEO changeover also resulted in increased salary expenses (transition period when two people/salaries were paid).

A Balance Sheet summary for the same periods as above is:-

	<b>2010/2011</b>	<b>2011/2012</b>	<b>2012/2013</b>	<b>2013/2014</b>
Current Assets	\$247,971	\$175,112	\$200,137	\$238,477
Non-Current Assets	\$16,368	\$12,920	\$9,929	\$7,903
Intangible Assets				
<b>Total Assets</b>	<b>\$264,339</b>	<b>\$188,032</b>	<b>\$210,066</b>	<b>\$246,380</b>
Current Liabilities	(\$65,717)	(\$11,511)	(\$48,270)	(\$41,139)
Non-Current Liabilities	\$0	\$0	\$0	\$0
<b>Total Liabilities</b>	<b>(\$65,717)</b>	<b>(\$11,511)</b>	<b>(\$48,270)</b>	<b>(\$41,139)</b>
<b>Net Assets</b>	<b>\$198,622</b>	<b>\$176,521</b>	<b>\$161,796</b>	<b>\$205,241</b>
<b>Current Ratio</b>	<b>3.77</b>	<b>15.21</b>	<b>4.15</b>	<b>5.80</b>

The WRLC balance sheet is not strong as there has not been sufficient inflow to cover all expenses and at the same time enable a build up of cash reserves. An increased inflow and containment of expenses will be necessary to enable a stronger balance sheet to emerge.

A comfortable current ratio exists indicating that the WRLC can and will meet their commitments going forward.



## Forecasts

We have determined forecasts based on two different scenarios. They are:

1. A base model utilising the current arrangement of the WRLC receiving 25% of the 0.50% GVP WRL that WAFIC receive ex DoF.
2. A model based on the WRLC receiving an increased portion of the WAFIC allocation of 50% in lieu of 25%.

	2015/2016	2016/2017	2017/2018
<b>Overheads</b>			
Accounting Fees	7,000	7,500	8,000
Bookkeeping	7,080	10,880	11,275
Bank Fees and Charges	306	315	325
Consultants	-	10,000	20,000
Entertainment	1,015	1,005	1,015
Gifts	700	900	1,000
IT Support	1,000	1,220	1,260
Promotion, Media & Communication	500	12,880	18,800
Memberships & Subscriptions	420	430	450
MSC Accreditation	15,000	15,000	15,000
Office Equipment & IT expenses	500	2,150	3,047
Postage	983	1,966	2,212
Printing & Stationary	2,314	3,098	3,521
Rent	12,150	25,100	26,715
Sponsorships	800	10,000	15,000
Training	-	10,000	46,000
Sundry Plant & Software <\$1000	1,760	1,512	1,579
Telephone	2,445	2,990	3,406
Travel, & Accomodation	2,950	17,480	18,900
Website	6,465	20,850	21,500
Insurance	1,855	4,670	5,880
Legal & Professional Fees	-	47,000	53,000
Salaries & wages, inc. super	131,400	150,015	150,015
EA Contract	43,800	54,750	58,035



Industry Representant	-	76,650	81,030
M/V Fuel	3,543	3,904	4,294
M/V Registration & Insurance	1,900	1,910	1,930
M/V FBT, Repairs, Maintenance & Parking	4,200	5,350	5,820
Board / Chair - inc. T&A, Meals	10,000	86,000	96,000
Meetings - Travel, Accomodation, Meals	-	-	-
Other meetings expenses	3,920	4,160	4,235
Provision for other staff on cost	-	19,710	24,638
<b>Total Overheads</b>	<b>264,006</b>	<b>609,395</b>	<b>703,882</b>
<b>Other Expense</b>			
Prepaid Audit Expenses	15,000	15,000	15,000
<b>Total Other Expense</b>	<b>15,000</b>	<b>15,000</b>	<b>15,000</b>
<b>Depreciation</b>			
Plant and Equipment at cost	47	31	21
Motor Vehicles at cost	1,231	985	788
<b>Total Depreciation</b>	<b>1,278</b>	<b>1,016</b>	<b>809</b>

#### Expenses Notes

**Bookkeeping:** - It is expected that there will be a significant increase in transactions in forecast years. It is estimated that the level of transactions will double hence an increase in the forecasts. However, the WRLC will be proactive in searching for more affordable solutions.

**Consultancy:** - Commissioning of ongoing independent advice for matters such as Maximum Economic Yield ("MEY") and Maximum Sustainable Yield ("MSY") applications and adjustments, future TACC settings, marketing analysis and customer profiling. Additional activities will include arranging and convening workshops and open forums for industry and other stakeholders to identify projects and research requirements, future strategic development programs, possible commercial development and other complementary industry programs, and including liaison with State and Commonwealth departments and NGO's.

**Promotion, Media and Communication:** - The WRLC wish to be pro-active rather than reactive in lifting the profile of the fishery (clean green, sustainable, whale interactions, recreational snag tags, recognised and responsible industry leader), stakeholder engagement and the ongoing demonstration of the WRLC as a professional and strategic industry peak body.

**MSC Accreditation & Prepaid Audit Expenses:** - It includes provisions for annual audit fees, accumulation of fees for re-certification and administration activities and costs. Additional administrative and strategic activities associated with the recertification scheduled for April 2017 include: -

- Development and evaluation of tender material for accredited certification organisations in accordance with MSC criteria
- Undertaking interviews and analysis of proposals by proposed tenderers
- Liaison with MSC to agree, finalise and appoint successful certification organisation
- Undertaking an extensive industry wide awareness and promotional campaign, in conjunction with MSC, prior to the re-certification activities to promote the benefits of re-certification and the cost/benefit advantages and leverage that can be obtained from continued certification





**Rent:** - is expected to double given the planned engagement of an Executive Officer and the need for additional office accommodation.

**Sponsorships:** - WRLC's contribution to industry awards and presentations domestically and internationally, engagement with interest groups (e.g. environmental, education) and joint ventures with other sector bodies.

**Training:** - Corporate governance programs, industry awareness, future leaders training and PFAs development. This is required to ensure that the WRLC and industry are undertaking the FRDC required people development activities and also to ensure that the WRLC achieves best practice standards and continues to maintain those standards. Other issues that will be addressed include demographic analysis of industry members and future training needs, succession planning and developing industry training skills.

**Website:** - Greater utilisation of the website to inform fishers as to topical and informative items. It will include regular updates on puerulus settlements; update on daily whale pods movements, linkages to all research material; council achievements and login for all member fishers. It is expected that the proposed EO will be responsible for this area of responsibility and ensure that all webmaster activities are maintained.

**Legal & Professional Fees:** - Ongoing advice in relation to corporate governance changes and periodic reviews of strategic plan and RD&E plan, constitution and advice on matters affecting industry. As progress is made by the WRLC towards best practice standards for board and corporate governance there will be a greater need for ongoing professional assistance in relation to development, refinement and continuous improvement of matters such as KPI's and milestone setting and evaluation, community engagement and interaction, and positive industry advocacy demonstrating leadership, negotiation and compromise.

**Salaries & Wages and Industry Representative:** - Personnel will remain as at present excepting for the engagement of an EO to assist the CEO with a number of the administrative and procedural matters as describe below.

**Executive Officer:** - Critical to support the CEO in the day to day running of the organisation, including improved support to and liaison with industry. This is the same as the role of the WAFIC Operations Manager and will enable the CEO to undertake a wider range of critical industry activities and achieve a greater benefit for the industry. It is vital that the WRLC is seen as being available and present at industry forums/workshops/meetings and also at stakeholder meetings with State and Commonwealth departments, FRDC and other NGO's. Engagement of an EO will be essential to ensure that administrative and commercial activities are undertaken on a regular and consistent basis, and allow a greater presence of the CEO and EO, where appropriate, at industry forums and public events. Assistance will be critical with matters such as administrative tasks, website administration, stakeholder management, preparation of industry analysis and advisory material, liaison with State and Commonwealth departments and involvement in critical and strategic issues such as research, compliance and management plan matters.

**Board/Chair/Independent Directors:** - Contingency for future Independent Chair/Directors. This will be particularly important to ensure the WRLC is perceived externally as adopting recommended and preferred corporate governance processes and evolving into a professional industry peak body with best practice board and governance. Inclusion of independent parties is necessary to implement and continue to comply with governance practices and support and provide mentoring and leadership to industry board representatives, which will be particularly important if the level of fees or honorarium to industry board members is limited to repayment of meeting and attendance expenses and minor activities.



## Scenario 1 (Income position as is of 25% of WAFIC receipts)

It is clear that should the existing funding model continue, the WRLC will accumulate significant deficits and be unable to continue operations. See Appendix 6 presenting the Scenario 1 forecasts – Profit and Loss, Balance Sheet, Cash Flow. A summary forecast profit and loss in this Scenario 1 is as follows: -

Inflow	2015/2016	2016/2017	2017/2018
<b>WAFIC Share Distribution</b>	<b>\$302,000</b>	<b>\$377,000</b>	<b>\$438,000</b>
<b>Interest Income</b>	<b>\$7,486</b>	<b>\$5,025</b>	<b>\$589</b>
<b>Total Inflow</b>	<b>\$309,486</b>	<b>\$382,025</b>	<b>\$438,589</b>
<b>Total Overheads</b>	<b>\$264,006</b>	<b>\$609,395</b>	<b>\$703,882</b>
<b>Prepaid Audit Expenses</b>	<b>\$15,000</b>	<b>\$15,000</b>	<b>\$15,000</b>
<b>Depreciation</b>	<b>\$1,278</b>	<b>\$1,016</b>	<b>\$809</b>
<b>Total Expenses</b>	<b>\$280,284</b>	<b>\$625,411</b>	<b>\$719,691</b>
<b>Net Income/(Deficit)</b>	<b>\$29,202</b>	<b>(\$243,386)</b>	<b>(\$281,102)</b>

A summary forecast balance sheet in this Scenario 1 is as follows: -

	2015/2016	2016/2017	2017/2018
<b>Current Assets</b>	\$434,790	\$215,649	\$157,500
<b>Non-Current Assets</b>	\$5,017	\$4,001	\$3,193
<b>Total Assets</b>	\$439,807	\$219,650	\$160,693
<b>Current Liabilities</b>	\$56,062	\$79,292	\$301,436
<b>Non-Current Liabilities</b>	\$0	\$0	\$0
<b>Total Liabilities</b>	\$56,062	\$79,292	\$301,021
<b>Net Assets</b>	<b>\$383,745</b>	<b>\$140,358</b>	<b>(\$140,743)</b>
<b>Current Ratio (good when &gt;1)</b>	<b>7.76</b>	<b>2.72</b>	<b>(0.52)</b>

A very poorly structured balance sheet is evident as a result of the significant trading deficits that will be incurred and demonstrates the venture cannot be sustained in this scenario if the WRLC is to achieve their goals and objectives. They would be unable to meet their commitments.



## Scenario 2 (Income position with 50 % of WAFIC versus current 25%)

See Appendix 7 for detailed Scenario 2 forecasts – Profit and Loss, Balance Sheet, Cash Flow. The overheads and expenses depicted here are the same as utilised for the Scenario 1.

<b>Inflow</b>	<b>2015/2016</b>	<b>2016/2017</b>	<b>2017/2018</b>
WAFIC Share Distribution	\$302,000	\$755,000	\$875,000
Interest Income	\$7,486	\$9,424	\$11,309
<b>Total Inflow</b>	<b>\$267,486</b>	<b>\$764,424</b>	<b>\$886,309</b>
<b>Expenses</b> As per Scenario 1	<b>2015/2016</b>	<b>2016/2017</b>	<b>2017/2018</b>
Total Overheads	\$264,006	\$609,395	\$703,882
Prepaid Audit Expenses	\$15,000	\$15,000	\$15,000
Depreciation	\$1,278	\$1,016	\$809
<b>Total Expenses</b>	<b>\$280,284</b>	<b>\$625,411</b>	<b>\$719,691</b>
<b>Net Income/(Deficit)</b>	<b>\$29,202</b>	<b>\$139,013</b>	<b>\$166,618</b>

A much improved position exists in this scenario. The deficits evident in the previous scenario are eliminated (apart from 2015/16 as it is expected that there will be no change to arrangements until 2016/17) and a fair and reasonable surplus is the outcome in each of the forecast periods from July 2016.

It will provide the WRLC with good capacity to continue operations and achieve the desired goals. The resultant balance sheet is as per the following table:

	<b>2015/2016</b>	<b>2016/2017</b>	<b>2017/2018</b>
Current Assets	\$434,790	\$598,048	\$769,411
Non-Current Assets	\$5,017	\$4,001	\$3,193
Total Assets	\$439,807	\$602,049	\$772,604
Current Liabilities	\$56,062	\$79,292	\$83,228
Non-Current Liabilities	\$0	\$0	\$0
Total Liabilities	\$56,062	\$79,292	\$83,228
<b>Net Assets</b>	<b>\$383,745</b>	<b>\$522,757</b>	<b>\$689,376</b>
<b>Current Ratio ( good when &gt;1)</b>	<b>7.76</b>	<b>7.54</b>	<b>9.24</b>



Such an outcome will see a comfortable build-up of reserves over the forecast periods. Some of the surplus fund build up or reserves accumulation will be utilised into FRDC; accelerate other important matters; marketing; research and development, and other profitable projects.

### **WAFIC and the WRLC:**

Although WAFIC's budget will be down \$150,000 in 2016/2017 (reserves will make up for it), both Parties will be enjoying higher income from then on.

The core points are:

1. WAFIC will maintain its average cash flow with increases coming
2. WAFIC can continue to function effectively
3. WAFIC can act in good faith and keep good relation with WRL fisherman
4. WAFIC and WRLC must stay allies for the benefit of all.

If neither of the suggested options were available then the WRLC would have no alternative but to approach their members to impose a levy to compensate for the shortfall forecast. That strategy will take some time to implement. Therefore, the aforementioned funding would still need to be made available from either WAFIC or the Western Australian Government during the transition stage.

## **Suggested KPIs**

To achieve the WRLC desired missions, the below list of Key Performance Indicators will be followed on a regular basis. It will enable the WRLC to closely monitor its progress and impact on the industry:

- Industry focus:
  - o # trainings delivered to fishermen and PFA's
  - o % fishermen satisfaction as regards to the WRLC actions undertaken
- Environment:
  - o # successive days without environmental issue (whales, other)
- The WRLC Team / corporate governance:
  - o # visits to key industry bodies
  - o %Variance of the WRLC overheads: actuals vs. forecasts – target of <10%
  - o Final draft of the constitution within the next 3 months
- Website and marketing efficiency:
  - o # hits / month
- Finance:
  - o Liquidity ratio: current asset / current liabilities
  - o Revenue / expense ratio
  - o % Training / Income
  - o % Marketing / Income



# List of Appendices

- 1. The WRLC Job Descriptions for Chief Executive Officer, Proposed Executive Officer and Executive Assistant**
- 2. List of the WRLC Committees and current members**
- 3. The WRLC Strategic Plan 2013-2016**
- 4. The WRLC Research, Development and Extension Plan 2014-2023**
- 5. The WRLC historical financial statements 2012-2014 and management P&L report to 30 March 2015**
- 6. Scenario 1 Forecast. P&L, Balance Sheet and Cash Flow (25% of WAFIC 0.50% allocation as at present)**
- 7. Scenario 2 – Forecast. P&L, Balance Sheet and Cash Flow (50% of WAFIC 0.50% allocation)**
- 8. IBISWorld Report A0410 – Fishing In Australia**



# Confidentiality Agreement

I \_\_\_\_\_  
(Please print full name)

of \_\_\_\_\_  
(Company name)

hereby acknowledge that the information contained in this business plan for the WRLC is confidential to the directors.

I hereby undertake not to use and to keep confidential all such information and shall not permit or allow the same to be disclosed to any person or persons.

Signature..... Date.....

Signature..... Date.....

## WRL Risk Register – Updated November 2019

### Risk Reference Tables

The Risk Reference Tables are used to create the **Risk Register** which in turn enables the WRL to document, manage, monitor, review and update strategic, corporate and project risk information in alignment with the strategic plan.

### Risk Analysis Criteria

Risks are analysed based on assessments of the consequences chosen to characterise the risk, the existing mitigation in place, their effectiveness and the likelihood of those consequences arising.

### Consequences Assessment

The realistic worst-case impact of the risk event should be assessed when analysing consequences. The choice of how to mitigate the risk (if at all) should be made once impacts are reviewed so that the risk aligns with the industry context.

### Risk Consequence Matrix

Level	Rank	OH&S Incidents	Stewardship of resource	Access to resources Reputation and Image	Industry performance
1	Insignificant	Minor incident or near miss report but no sign of injury or illness.	The DoF 'Weight of Evidence' model monitoring biomass, egg, and puerulus values and tracked against catch rates has a 10% year to year variance.	Isolated individual issue-based complaint. No media, news coverage or government correspondence.	Up to 10% variance against key performance indicators or objectives.
2	Minor	Injury or illness requiring first aid treatment only.	The DoF 'Weight of Evidence' model monitoring biomass, egg, and puerulus values and tracked against catch rates has a 10-20% year to year reduction.	Local community impacts or issue-based concerns. Some local or industry media, and or news coverage or government correspondence.	10-20% variance against key performance indicators or objectives.
3	Moderate	Medical treatment required, rehabilitation or lost time injury or illness.	The DoF 'Weight of Evidence' model monitoring biomass, egg, and puerulus values and tracked against catch rates has a 20-30% year to year reduction.	Widespread community impacts and concerns publically expressed. Reduced confidence by community and stakeholders. State media and or news coverage. Ministerial correspondence.	20-30% variance against key performance indicators or objectives.
4	Major	Substantial injury, temporary disability or life-threatening injury or illness.	The DoF 'Weight of Evidence' model monitoring biomass, egg, and puerulus values and tracked against catch rates has a 30-50% year to year reduction.	Widespread, considerable and prolonged community impact and dissatisfaction publicly and repeatedly expressed. Criticism and loss of confidence and trust by community and stakeholders in the industry, processes and capabilities. Industry and /or organisation's integrity in question. Significant national and state media attention.	30-50% variance against key performance indicators or objectives.
5	Catastrophic	Loss of life. Permanent disability. Potential criminal liability charge.	The DoF 'Weight of Evidence' model monitoring biomass, egg, and puerulus values and tracked against catch rates greater than 50% year to year reduction.	Widespread, persistent and ongoing adverse community condemnation with substantial irrecoverable industry 'brand' damage. Wholesale loss of confidence/trust in the Industry's capabilities and intentions. Ministerial intervention at Board level. Widespread national/international media coverage.	Greater than 50% variance against key performance indicators or objectives.

### Likelihood Assessment and Matrix

The descriptors of likelihood are designed to answer the question of how likely the described risk event is to cause the consequences at the level. The likelihood and consequence ratings for Strategic and Operational Risks must be considered *with* Key Controls in place (Residual Risk - *the threat that remains after all efforts to identify and eliminate risk have been made. There are four basic ways of dealing with risk: reduce it, avoid it, accept it or transfer it.*)

Level	Descriptor	Comment
1	Rare	Less than once in 5 years, or at all.
2	Unlikely	Controls and consideration provide confidence.
3	Moderate	Lack of diligence and external input.
4	Likely	Compliance and monitoring will break at some stage.
5	Almost certain	History and events suggest this will happen, when is the question.

### Risk Measurement Criteria and Matrix

This process combines consequence, likelihood and the performance measurement for applied risk controls to provide a *risk assessment rating* which can be used as a foundation for prioritisation based on WRL risk tolerance. The Table reflects the Risk Measurement Criteria adopted by WRL.

Level of Risk	Criteria for Management of Risk		Responsibility/Risk Ownership	Review period
1 - 3	Low	Individual responsibility	Industry and individual participants	12 months
4 - 7	Minor	Acceptable with adequate controls	Executive oversight	12 months
8 - 9	Moderate	Only acceptable with adequate controls	Executive and Board oversight	6-12 months
10 - 15	High	Not acceptable without consultation	Executive and Board oversight	3-6 months
16+	Extreme	Not acceptable – intervention necessary	Board intervention and oversight	3-6 months

### Control Status and Effectiveness and Matrix

A control is implemented, planned or identified as a *potential further action* as a result of the risk review process. All controls utilised should be relevant, documented, effective and current.

	Status	Description
E	<b>Excellent</b> (Implemented)	Control has been fully implemented and there is documentation evidencing the use of the control.
A	<b>Adequate</b> (Planned)	The control is not fully implemented but there is a documented plan of action which specifies tasks, responsibilities and completion date.
I	<b>Inadequate</b> (Action Required)	Control has not been identified or documented and should be considered to improve on/impact the assessed risk.











## Western Rock Lobster Industry Risk Register - Summary

Following identification of the Industry risks each has been analysed using the Risk Reference Tables. Further investigation into the consequences allows the WRL to recognise the degree of risk and apply key control management strategies and tactics and develop the **Risk Register**.


Risk register reporting allows management to monitor and review risks in alignment with the strategic plan. There will be an annual review of the Risk Register, with a summary presented as the **Risk Dashboard** (below) to be updated and reviewed bi-annually (March and September) by the WRL Board.

### RISK DASHBOARD

as at November 2019

#	Risk	Likelihood	Consequence	Level of Risk	Highest Consequence	Key Controls	Bi-annual change
1.	 Poor understanding and relationship with State and Federal Government.	4	4	16	Stewardship of resource. Access to resources.	A	Submission for private property rights inquiry. Develop package of initiatives. Broaden and strengthen government relationships.
2.	 Single market as the sole outlet for Western Rock Lobster.	4	4	16	Industry performance. Access to resources.	A	Functional TACC Industry committee. R&D program to understand markets, trade data and analysis. Develop maximum economic yield model.
3.	 Animal welfare.	3	4	12	Stewardship of resource. Access to resources.	A	Develop an animal welfare plan around crisis management. Education with members and the community.
4.	 Lack of understanding of what affects western rock lobster recruitment and biomass.	3	4	12	Stewardship of resource. Access to resources.	A	Continued planning for proposed collaborative lobster research institute. WRL involved in the co-development of the Harvest Strategy. Increased investment in R&D.
5.	 Biosecurity Paralytic Shell Toxin (PST)	3	4	12	Stewardship of resource. Access to resources.	A	Need to review and integrate with DPIRD's biosecurity response plan.
6.	 Reduced confidence in the WRL.	3	3	9	Stewardship of resource. Access to resources.	A	Reduced membership conflict causing division within the industry. Stronger engagement with members through communications and tours. A clear vision for industry development. WRL industry investment that benefits members.
7.	 Capital costs for Quota and Pot leases escalate and drive a number of fishers from the industry.	3	3	9	Stewardship of resource.	A	Proposed a unit registry to understand ownership demographics. Proposed a real time trading platform and trade dashboard.
8.	 A significant OH&S event occurs.	3	3	9	OH&S incidents. Industry performance.	A	Collaborated across other fishing sectors to develop a high standard of marine OH&S. Continued development of SeSAFE for western rock lobster industry.

## Western Rock Lobster Industry – Risk Register November 2019

<p>9.</p> 	<p><b>Loss of the right to fish due to community pressures.</b></p>	<p>3</p>	<p>3</p>	<p>9</p>	<p>Stewardship of resource. Access to resources.</p>	<p>A</p>	<p>Local Lobster Program. MSC certification. Continued to improve stakeholder communications and industry promotion. Industry confidence in WRL &gt;80%.</p>
<p>10.</p> 	<p><b>Breakdown in the Chain of Custody.</b></p>	<p>2</p>	<p>3</p>	<p>6</p>	<p>Stewardship of resource. Industry performance.</p>	<p>A</p>	<p>MSC recertification secured. Strong relationships with State and Commonwealth governments regarding trade representation.</p>


**NOTE: Arrows:** show change in level of risk since April 2019 review.


**Key Controls:** Excellent - control has been fully implemented.


Adequate - control is not fully implemented but there is a plan of action.



Inadequate - control has not been identified.


## WRL STRATEGIC RISK REGISTER


Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
1. 	<p><b>Poor understanding and relationship with State and Federal Government.</b></p> <p><b>Lack of Government support from DPIRD.</b></p>	<p>Poorly managed relationships.</p> <p>Significant event, poorly managed.</p> <p>Government decisions.</p> <p>Poor engagement with industry.</p>	The WRL industry is proactively managing industry risk, reputation and development	Resource access security and co-management through ministerial and government understanding and awareness.	<p>Negative impacts on industry through policy and resource management.</p> <p>Resource reallocation to other sectors (e.g. recreational and charter).</p> <p>Not amenable to collaborative decision-making involving industry.</p> <p>Removal or reduction of resource access.</p>	Stewardship of resource Access resources	4	4	16	A	<ul style="list-style-type: none"> <li>• <b>Priority 1:</b> Proactively manage internal industry and external community communications and stakeholder relationships.</li> <li>• Ensure industry maintains a good working relationship with government, relevant ministers and members of parliament along with the DPIRD.</li> <li>• Invest in, manage and cultivate a strong social licence to operate the industry.</li> <li>• Promote the western rock lobster industry and raise awareness of its economic contribution.</li> <li>• Implement Local Lobster Program.</li> <li>• Communicate economic contribution of the WRL industry to the state.</li> <li>• Maintain relevant crisis response protocols.</li> </ul>	Executive and Board

Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
2. 	<p><b>Single market as the sole outlet for Western Rock Lobster.</b></p> <p><b>Increased competition from global market replace some of the key markets.</b></p>	<p>Diplomatic issues over sovereignty and trade matters.</p> <p>Economic status collapses.</p> <p>Stronger efforts from international competitors.</p> <p>Lack of cohesion in Australian market.</p> <p>Changing consumer behaviours / preferences.</p> <p>Lack of in-market promotion and education for WRL.</p> <p>Inadequate development of alternative markets.</p>	<p>The WRL industry is professionally managed to sustain its economic contribution to the WA economy.</p>	<p>Sustained profitability for operators and secure returns for investors.</p> <p>Identified alternative markets in the event of market failure.</p> <p>Trade and relationship management for markets.</p>	<p>Capital and quota costs will be more significantly affected with price fluctuations in a dominant market as compared to diverse markets.</p> <p>Investors and operators are more impacted by delayed fluctuations in capital and quota costs as a direct result of fluctuations in beach prices in a dominant market as compared to diverse markets.</p> <p>Lack of diversification in product and alternative markets.</p> <p>Unpreparedness for transitioning product to alternative markets.</p> <p>Loss of market share and opportunities to competitors servicing alternative markets.</p>	<p>Industry performance</p> <p>Access resources</p>	4	4	16	A	<ul style="list-style-type: none"> <li>• <b>Priority 4:</b> Professionally manage the WRLF harvest strategy and TACC by accessing scientific, economic and industry expertise.</li> <li>• Work in collaboration within industry and with government to understand and mitigate the risk of reliance on a single market.</li> <li>• Recognise the strength, scale and growth of the Chinese market.</li> <li>• Improve understanding, awareness and transparency of China market.</li> <li>• Develop a greater presence in the local market.</li> <li>• Promote MSC certification and build brand awareness of the western rock lobster as a luxury premium product.</li> <li>• Investigate alternative markets including those countries with Chinese populations.</li> <li>• Explore new market lines for product diversity - i.e. freezing, horn meat, leg meat etc.</li> <li>• Investigate the allocation of airline freight capacity and how it can be better managed to ensure the WA rock lobster industry is not devalued.</li> <li>• Establish the National Institute for Spiny Lobster Research to address logistics, transport, marketing, economics and science.</li> <li>• WA Minister and DPIRD aware and interested in these activities.</li> <li>• Improved relationships with relevant State and Federal Ministers and policy officers.</li> </ul>	<p>Board, Executive, industry, DPIRD and DAWR</p>


Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
3. 	<b>Animal welfare</b>	<p>Significant event involving lobster in transit to market or in market.</p> <p>Reaction to whale entanglement.</p>	<p>The WRL industry is proactively managing industry risk, reputation and development.</p>	<p>Community and market confidence in the WRL industry being best practice for handling lobster throughout the supply chain.</p> <p>Effective whale mitigation measures resulting in community support for industry.</p>	<p>Reputational damage from media and community campaigns regarding animal welfare issues affecting WRL industry.</p> <p>Reduced social license due to community expectations regarding animal welfare not being met.</p> <p>Ineffective whale mitigation measures impacting on resource access for lobster.</p> <p>Pressure to reduce fishing allowance and increased control measures.</p>	Stewardship of resource Access to resources	3	4	<b>12</b>	<b>A</b>	<ul style="list-style-type: none"> <li>Guidelines for handling of commercial and recreational lobster.</li> <li>Develop an animal welfare plan around crisis management, and add to the Crisis Management Guidelines.</li> <li>Education process with members and community.</li> <li>Establish a collaborative Institute for Spiny Lobster Research with a research program to improve lobster handling throughout the supply chain.</li> <li>Establish a collaborative Institute for Spiny Lobster Research with a research program to improve understanding of whale population dynamics and issues associated with entanglements.</li> <li>Review Livestock ESCAS model.</li> <li>Review and update whale mitigation measures.</li> <li>Industry promotion to generate community support.</li> <li>Industry and processors to address the risk in collaboration.</li> <li>Review crisis communication protocol to update the animal welfare scenarios.</li> </ul>	Board, Executive


Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
4. 	<b>Lack of understanding of what affects western rock lobster recruitment and biomass</b>	Complexity of accumulative impacts, including climate, oceanography, seismic, environmental.  Lack of understanding of stock dynamics.  Insufficient funding and resources for research and monitoring.	The WRL Harvest Strategy ensures long term access to the sustainable resource.	Stewardship resulting in the ability to maintain maximum economic yield.  A model which accurately predicts lobster recruitment and biomass.  Establishment of Institute for Spiny Lobster Research.	Long-term reduction in biomass.  Reduction in quota and harvest.  Reduced profit for investors and operators.  Loss of resource access.  Loss of attractiveness for new investment.  Evidence-based decision making in resource management would be impacted.	Stewardship of resource Access to resources	3	4	12	A	<ul style="list-style-type: none"> <li>Industry to actively manage the TACC through the TACC Subcommittee.</li> <li>Establish a collaborative Institute for Spiny Lobster Research.</li> <li>WRL involvement in the co-development of the Harvest Strategy.</li> <li>Ensure IPA program is focussed on high priority science areas.</li> <li>Further research to gain a better understanding of the impact of climate change and oceanography.</li> <li>Ensure biological and physical parameters are closely monitored.</li> <li>Increase research to understand stock dynamics.</li> <li>Ensure research priorities are adequately funded.</li> </ul>	Board, Executive and DPIRD
5. 	<b>Biosecurity Paralytic Shell Toxin (PST)</b>	Translocation of pests, weather events, shipping.	The WRL industry is proactively managing industry risk, reputation and development.	Awareness of threats and issues.  Industry and government identification and response systems are understood and synchronised.  Capacity to respond rapidly.	Damage to resource stocks.  Loss of resource access.  Reputational damage in market.  Loss of market access or reduced consumer demand.  Damage to lobster habitat or environmental impacts affecting the fishery.	Stewardship of resource Access to resources	3	4	12	A	<ul style="list-style-type: none"> <li>Review DPIRD's biosecurity response.</li> <li>Ensure DPIRD biosecurity response plan meets the needs of WRL industry.</li> <li>Industry to develop a biosecurity response plan.</li> <li>Industry and government identification and response systems are understood and synchronised.</li> <li>Better understand the effects of climate and oceanography on the fishery.</li> <li>Identification of mitigation measures and exclusion zones for biosecurity risks.</li> <li>Review and update crisis communication protocols to include a biosecurity scenario.</li> </ul>	Board, Executive and DPIRD



Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
<p>6.</p> 	<p><b>Reduced confidence in the WRL.</b></p> <p><b>Dis - enfranchised members.</b></p> <p><b>Breakaway group looking to separately source quota and/or manage fishing area.</b></p>	<p>Not addressing specific needs of fishers.</p> <p>Not engaging sufficiently with industry.</p> <p>Poor performance of the WRL.</p> <p>Disagreement of TACC decision-making.</p> <p>Poor relationship with WA Government.</p>	<p>The WRL industry is proactively managing industry risk, reputation and development.</p>	<p>Maintain WRL as the peak body with full representation of the lobster industry.</p> <p>Maintain industry confidence in the role and performance of the WRL above 75%.</p> <p>Harmony in the membership.</p> <p>Maintenance of current arrangements with licences and allocation.</p> <p>Strong relationship with governments resulting in better policies and co-management.</p>	<p>Conflict causing division within WRL.</p> <p>Membership conflict causing division within the industry.</p> <p>Uncertainty in retaining government funding.</p> <p>Increased competition for quota or resource allocation.</p> <p>WRL not being seen as the representative peak body.</p> <p>Less effective resource management.</p> <p>Poor industry engagement and representation.</p>	<p>Stewardship of resource</p> <p>Access to resources</p>	<p>3</p>	<p>3</p>	<p>9</p>	<p>A</p>	<ul style="list-style-type: none"> <li>• <b>Priority 1:</b> Proactively manage internal industry and external community communications and stakeholder relationships.</li> <li>• Ensure WRL represents the best interests of all its members.</li> <li>• Liaise with government to achieve resource access security.</li> <li>• Determine areas of common interest with other sectors of the rock lobster industry in Australia.</li> <li>• Clear policies and evidence-based decision making.</li> <li>• Increased industry consultation program including coastal tours and electronic communications.</li> <li>• WRL and industry professional development.</li> <li>• Developing and encouraging member feedback.</li> <li>• Maintaining integrity of quota system.</li> <li>• Conduct annual members and stakeholders surveys with results made available to members.</li> <li>• Maximise opportunities for collaborative policy development and co-management of the fishery.</li> </ul>	<p>Board and Executive</p>

Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
7. 	<p><b>Capital cost for quota and pot leases escalate and drive a number of fishers from the industry.</b></p> <p><b>Foreign capital purchases a significant proportion of the quota.</b></p>	<p>Separation of ownership from operation.</p> <p>Lack of capital, succession plans and opportunity to capitalise.</p> <p>Increase in market price of lobster.</p> <p>Increased fishing efficiency such as unregulated pot design.</p>	<p>There is confidence in the WRL industry to attract and retain investment.</p>	<p>Secure realisation of asset management for the industry longevity.</p> <p>Resource access security.</p> <p>Establish a unit registry to understand ownership demographics.</p>	<p>Continued reduction in number of fishers, with increase in 'unit' size.</p> <p>Little opportunity for new entrants into the industry.</p> <p>Decreased profitability for smaller operators.</p> <p>Less members contributing to industry representation.</p> <p>Foreign ownership impacting on market prices.</p> <p>Less fishing jobs.</p>	Stewardship of resource	3	3	9	A	<ul style="list-style-type: none"> <li>Investigate opportunities to attract and retain youth in the industry.</li> <li>Invest in leadership capability and young fishers' development such as through the DECK program.</li> <li>Investigate a real-time trading platform.</li> <li>Investigate registry systems used by other industries.</li> <li>Investigate viable leasing options and encourage the involvement of investors.</li> <li>Keep members updated on issues associated with operating costs and pot and lease markets.</li> <li>Investigate economic and financial benchmarking relative to the catching sector.</li> <li>Investigate further impact of FIRB, Ministerial intervention in licensing, impact of sale attitude of quota.</li> </ul>	Board, Executive



Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
8. 	<p><b>A significant OH&amp;S event occurs.</b></p> <p><b>Possible death or boat disappearance</b></p>	<p>Inadequate OH&amp;S policies and procedures.</p> <p>Insufficient training or adherence to policies and procedures.</p> <p>Inadequate or faulty safety equipment.</p> <p>Poor culture in some sectors.</p>	The WRL industry is proactively managing industry risk, reputation and development.	Zero issues in OH&S across industry fishermen, processors and their employees, contractors, consultants, and third parties.	<p>OH&amp;S incidents resulting from unsafe work practices.</p> <p>Media spotlight turned on the industry.</p> <p>Loss of political, regulatory and/or community support.</p> <p>Increased industry regulation.</p> <p>Blame and demand for consequence aimed at WRL.</p> <p>Potential criminal liability charge.</p> <p>Reputational damage.</p>	OH&S incidents Industry performance	3	3	9	A	<ul style="list-style-type: none"> <li>•<b>Priority 5:</b> Collaborate across other fishing sectors to develop a high standard of marine occupational health and safety.</li> <li>•Develop industry standards / code of practice for safety reasons and to protect the reputation of the industry and the brand.</li> <li>•Implement training programs to cover fatigue management, first aid, deckhand training, induction etc.</li> <li>•Investigate the feasibility of mandatory drug and alcohol testing within the industry.</li> <li>•Determine if training is a requirement under AMSA and WorkSafe and if so promote it. Otherwise encourage as mandatory.</li> <li>•Introduce an industry award for fishermen to aspire to and to reward responsible behaviour.</li> <li>•Digitise OH&amp;S through SeSAFE.</li> <li>•Further develop crisis management scenarios and plans.</li> <li>•Maintain adequate insurance.</li> </ul>	Board, Executive, industry

Change from April 2019	Risk Event	Causes	WRL Strategic Objective	Key Outcome	Consequence / Impacts	Consequence Category	Likelihood	Consequence	Level Of Risk	Control Status	Key Controls Management Strategies and Tactics	Manager - Action Responsibility
9. 	<b>Loss of the right to fish due to community pressures.</b>	<p>Lack of community awareness and support.</p> <p>Inadequate industry representation and promotion.</p> <p>Industry not meeting community expectations regarding resource access.</p> <p>Insufficient science to underpin decision making.</p> <p>Organised anti-fishing campaigns.</p>	The community has sufficient confidence in WRL fishery to support continuing access to the resource.	<p>Resource access security.</p> <p>Improvement in results of community perception surveys.</p> <p>Political and community support for the industry.</p>	<p>Reduced access to some fishing areas, especially marine parks.</p> <p>Reallocation of resource share to other sectors.</p> <p>Demands from the community to change resource management or rent/fees.</p> <p>Reputational damage and reduced social license.</p>	Stewardship of resource Access to resources	3	3	9	A	<ul style="list-style-type: none"> <li>• <b>Priority 2:</b> Manage professional advocacy and representation for the WRLF to government and stakeholder groups.</li> <li>• <b>Priority 3:</b> Invest in building human capacity and improving professionalism, to sustain industry advocacy and leadership.</li> <li>• Invest, manage, demonstrate and cultivate a strong social licence to operate the industry.</li> <li>• Supply the local market to reduce the incentive for recreational fishers to sell into the market.</li> <li>• Maintain the Local Lobster Program.</li> <li>• Industry to communicate its positive story and engage in active education of the industry and lobsters with the community.</li> <li>• Maintain and promote MSC certification.</li> <li>• Establish Institute for Spiny Lobster Research to undertake research that will secure resource access and assist with promoting the industry.</li> <li>• Undertake community perception surveys.</li> </ul>	Executive, Board and industry

<p>10.</p> 	<p><b>Breakdown in the Chain of Custody.</b></p>	<p>Inability to manage compliance matters.</p> <p>Interference with marketing or product substitution.</p> <p>Marketing of WRL outside of the WRL Managed Fishery.</p>	<p>The WRL industry is professionally managed to sustain its economic contribution to the WA economy.</p>	<p>Producing a premium product for world markets.</p> <p>Easy authentication of WRL product in the market.</p> <p>Trusted Chain of Custody.</p>	<p>Reputational and brand damage.</p> <p>Market looks to alternate supply.</p> <p>Additional cost to implement compliance to meet government requirements.</p> <p>International demands for additional compliance.</p>	<p>Stewardship of resource Industry performance</p>	<p>2</p>	<p>3</p>	<p>6</p>	<p>A</p> <ul style="list-style-type: none"> <li>• Invest in total industry responsibility to actively manage the chain of custody.</li> <li>• Maintain and continue to fund MSC certification, and brand western rock lobster as a premium product and the best-managed fishery in the world.</li> <li>• Develop a communications plan to utilise various platforms to communicate good news stories with industry and the community.</li> <li>• Develop an industry code of practice for handling rock lobster that meet the requirements of animal welfare and protects quality.</li> <li>• Develop a chain of custody animal welfare plan that includes crisis management.</li> <li>• Undertake further research to determine if industry is exporting lobster in the best possible way.</li> <li>• Develop training workshops to raise awareness and educate the food sector.</li> <li>• Encourage all vessels to adopt the industry code of practice to protect the quality and image of the industry.</li> <li>• Lobby government to introduce legislation for food labelling for the Australian seafood industry.</li> <li>• Interact more with MSC.</li> <li>• Market research regarding strengths and weaknesses of the chain of custody.</li> </ul>	<p>Board, Executive, Processors, Fishers and Division of Fisheries</p>
<p>11.</p> 	<p><b>Lack of control over production of lobster through aquaculture.</b></p>	<p>Sustained market opportunity and economically viable aquaculture production.</p> <p>Outside groups establish lobster aquaculture production.</p>	<p>The WRL industry is proactively managing industry risk, reputation and development.</p> <p>There is confidence in the WRL industry to attract and retain investment.</p>	<p>Growing the WRL GVP.</p> <p>Maintaining control of WRL value chain.</p> <p>Profitability for operators and secure returns for investors.</p>	<p>Increases local competition for export markets.</p> <p>Potential reduction in the asset value of members.</p>	<p>Industry Performance Access resources</p>	<p>2</p>	<p>3</p>	<p>6</p>	<p>I</p> <ul style="list-style-type: none"> <li>• Engagement with universities, businesses and other commercial sectors involved with aquaculture.</li> <li>• Establish WA as Research Institute for Spiny Lobster research.</li> </ul>	<p>Executive and industry</p>

# RULES OF ASSOCIATION WESTERN ROCK LOBSTER COUNCIL INC.



## Western ROCK LOBSTER

---

World leading sustainable fishery

*July 2018*

## INDEX

<b>1. NAME OF ASSOCIATION .....</b>	<b>4</b>
<b>2. INTERPRETATION .....</b>	<b>4</b>
2.1 Definitions.....	4
2.2 Interpretation .....	5
2.3 Replacement of the Managed Fisheries System.....	6
<b>3. OBJECTS OF ASSOCIATION.....</b>	<b>6</b>
3.1 Objects of Association .....	6
3.2 Property and income of Association.....	7
<b>4. POWERS OF ASSOCIATION .....</b>	<b>7</b>
<b>5. MEMBERSHIP.....</b>	<b>7</b>
5.1 Categories of Membership .....	7
5.2 Ordinary (or Voting) Members .....	7
5.3 Associate Members .....	8
5.4 Applications for membership .....	8
5.5 Termination of membership.....	9
5.6 Suspension and Expulsion of Members .....	9
5.7 Notification .....	10
5.8 Representative of Body Corporate Member .....	10
<b>6. RIGHTS OF MEMBERS.....</b>	<b>10</b>
6.1 Right to receive notices and accounts .....	10
6.2 Right to vote at General Meetings.....	10
<b>7. OBLIGATIONS OF MEMBERS.....</b>	<b>10</b>
7.1 Subscription fee .....	10
7.2 Payment of subscription .....	11
7.3 Payment of other fees .....	11
7.4 Notify change of name, email address and postal address .....	11
<b>8. REGISTER OF MEMBERS .....</b>	<b>11</b>
8.1 Register of Members .....	11
8.2 Inspection of register .....	11
<b>9. BOARD .....</b>	<b>12</b>
9.1 Board .....	12
9.2 Election of Directors and filling casual vacancies on Board.....	13
9.3 Casual vacancy in Membership of Board .....	14
<b>10. CHAIRPERSON AND VICE-CHAIRPERSON .....</b>	<b>15</b>
<b>11. SECRETARY.....</b>	<b>15</b>
<b>12. TREASURER.....</b>	<b>16</b>
<b>13. CHIEF EXECUTIVE OFFICER.....</b>	<b>16</b>
<b>14. PROCEEDINGS OF BOARD .....</b>	<b>17</b>
14.1 Frequency of meetings .....	17
14.2 Convening of meetings .....	17
14.3 Quorum.....	17
14.4 Proxies at Board meetings .....	17
14.5 Voting.....	17
14.6 Board Meetings and Transactions outside Board Meetings .....	17
14.7 Circular Resolutions .....	17
14.8 Pecuniary interest.....	18
14.9 Expenses .....	18
14.10 Indemnity .....	18

<b>15.</b>	<b>GENERAL MEETINGS .....</b>	<b>18</b>
15.1	Convening of meetings .....	18
15.2	Request for meeting .....	18
15.3	Notice of meeting .....	19
15.4	Quorum.....	19
15.5	Adjournment.....	19
15.6	Passing of resolutions .....	20
15.7	Proxy and representative.....	20
15.8	Poll .....	20
15.9	Voting rights.....	21
<b>16.</b>	<b>MINUTES OF MEETINGS .....</b>	<b>21</b>
16.1	Proper minutes .....	21
16.2	Responsibilities of Chairperson .....	21
16.3	Minutes prima facie evidence .....	21
<b>17.</b>	<b>COMMON SEAL OF ASSOCIATION .....</b>	<b>21</b>
<b>18.</b>	<b>ANNUAL SUBSCRIPTION.....</b>	<b>22</b>
18.1	Notice of annual subscription .....	22
18.2	Payment.....	22
18.3	Other charges .....	22
<b>19.</b>	<b>RULES OF ASSOCIATION .....</b>	<b>22</b>
<b>20.</b>	<b>INSPECTION OF RECORDS ETC. OF ASSOCIATION .....</b>	<b>22</b>
<b>21.</b>	<b>DISPUTES AND MEDIATION.....</b>	<b>22</b>
<b>22.</b>	<b>DISTRIBUTION OF SURPLUS PROPERTY ON WINDING UP OF ASSOCIATION .....</b>	<b>23</b>

# RULES FOR THE WESTERN ROCK LOBSTER COUNCIL INC.

## 1. NAME OF ASSOCIATION

The name of the Association is “The Western Rock Lobster Council Inc.”

## 2. INTERPRETATION

### 2.1 Definitions

In these rules, unless the context otherwise requires:

**Act** means the Fish Resources Management Act 1994 (WA) and any statute from time to time regulating the commercial exploitation of west coast rock lobster resources of the State in whole or partial replacement of the Fish Resources Management Act 1994 including where the context permits the New Legislation.

**A Zone, B Zone and C Zone** mean A Zone, B Zone and C Zone respectively in the West Coast Rock Lobster Fishery.

**Annual General Meeting** means a meeting of the Members convened once each calendar year in accordance with section 50 of the Associations Act.

**Association** means the association referred to in rule 1.

**Associations Act** means the Associations Incorporation Act 2015 (WA) and any amendment or replacement thereof.

**Associate Member** means a member of the Association having membership under rule 5.3 and 5.4.

**Board of Directors** means the Board of Directors of the Association as constituted under section 9 and Board, shall have a corresponding meaning.

**Board Meeting** means a meeting referred to in rule 14.

**Business Day** means a day other than a Saturday, Sunday or State public holiday in Western Australia or national public holidays.

**Chairperson** means:

- (a) in relation to the proceedings at a Board Meeting or General Meeting, the person presiding at the Board Meeting or General Meeting in accordance with rule 10; or
- (b) otherwise than in relation to the proceedings referred to in paragraph (a), the person referred to in rule 9.1(c) (iii), or, if that person is unable to perform his or her functions, the Vice Chairperson.

**Chief Executive Officer** means the Executive Officer of the Association from time to time appointed by the Board under rule 13.

**Director** means a member of the Board elected or appointed under section 9.

**Financial Year** has the meaning given by section 3 of the Associations Act.

**FRMA** means the *Fish Resources Management Act 1994* (WA) and any Act relating to the management of west coast rock lobster resources of the State in force upon the repeal of the *Fish Resources Management Act 1994*.

**General Meeting** means a meeting of Members convened under these rules.

**Incorporation day** is the latter date of registration or incorporation of the Association under Associations Incorporation Act 1994 (repealed).

**MFL or Managed Fishery License** means a WCRLF Managed Fishery License granted, renewed, or continued under the Act and the form of authorisation under the New Legislation which grants rights of access to all or part of the WCRLF which substantially corresponds to the rights held under a WCRLF managed fishery license.

**Member** means an Ordinary Member or an Associate Member of the Association.

**New Legislation** means the legislative enactments referred to in rule 2.3 to the extent they replace from time to time the Fish Resources Management Act 1994 and the licenses, entitlements and administrative processes under the latter Act.

**Ordinary Member** means a member of the Association having membership under rule 5.2.

**Ordinary Resolution** means a resolution other than a Special Resolution.

**Registrar** means the registrar referred to in the Act or successor position or office.

**Secretary** means the Secretary referred to in rule 9.1(c) (1) (iii).

**Special Resolution** has the meaning given by section 3 of the Associations Act.

**State** means the State of Western Australia.

**Treasurer** means the Treasurer referred to in rule 9.1(c) (1) (iii).

**Unit** means a unit of rock lobster entitlement in A Zone, B Zone and C Zone of the WCRLF and any right or authorisation under the New Legislation which substantially corresponds to such a unit.

**Usual entitlement** has, in respect of units in the WCRLF, the meaning of that term in the FRMA.

**Vice-Chairperson** means the Vice-chairperson referred to in rule 9.1(c) (1) (iii).

**WAFIC** means the Western Australian Fishing Industry Council Inc.

**WCRLF** means the West Coast Rock Lobster Fishery and when New Legislation comes in to effect the area in relation to which corresponding rights and entitlements are held.

**Zone Representative** means a person elected as a Director by Ordinary Members who hold a MFL with Units of usual entitlement in a particular Zone in accordance with rule 9.2(a)(2) or (3).

## 2.2 Interpretation

In these rules, unless the context otherwise requires:

- (a) words importing the singular include the plural and vice versa.
- (b) words of one gender include every other gender.



- (c) words denoting individuals include a firm, body corporate, an unincorporated association and any governmental or other public body or authority of any kind and vice versa.
- (d) references to any statute (such as the FRMA), ordinance, code or other law includes regulations, other subsidiary legislation and other instruments made under any of them as amended and in force, re-enactments, replacements or consolidations of any of them occurring at any time.
- (e) headings shall not affect the construction or interpretation of these rules.
- (f) references to a clause, paragraph, annexure or schedule is a reference to the same in these rules.
- (g) a reference to a document includes that document as amended or replaced.
- (h) a reference to a whole thing includes a reference to part of that thing.
- (i) a reference to a professional body includes the successors to, or substitutes for, that body.
- (j) where a word or phrase is defined in these rules, other parts of speech and grammatical forms of that word or phrase have a corresponding meaning.
- (k) “include”, “including” and other similar expressions are not words of limitation.
- (l) if a period of time is specified and dates from a given day or the day of an act or event, it is to be calculated exclusive of that day.
- (m) if an act prescribed under this agreement to be done by a party on or by a given day is done after 5.00pm on that day, it is taken to be done on the next day.
- (n) if an event must occur on a stipulated day which is not a Business Day then the stipulated day will be taken to be the next Business Day.
- (o) a reference to time is a reference to Western Australian Standard time (WST).
- (p) A reference to a Member being present at a General Meeting means a Member presents in person, by proxy or by a representative appointed under clause 15.7 (b).

## **2.3 Replacement of the Managed Fisheries System**

- (a) The Association recognises that the Fish Resources Management Act 1994 and the licences, entitlements and administrative processes under that statute are under review and may be wholly or partly be replaced or supplemented by new legislation presently represented by the Aquatic Resources Management Bill 2015.
- (b) The Association intends that when the New Legislation and rights, entitlements and licences thereunder comes into force these rules will continue in effect until amended in accordance with the Associations Act and that these rules will be interpreted in good faith to provide substantially the same or similar rights and benefits to Members and applicants for Membership as were provided under the replaced legislation.

## **3. OBJECTS OF ASSOCIATION**

### **3.1 Objects of Association**

The objects of the Association are to:

- (a) represent the MFL holders and Unit holders of the WCRLF for their common benefit;
- (b) facilitate discussion and understanding between the catching sector of the WCRLF and other sectors of the WCRLF and organisations and enterprises that relate to the WCRLF;

- (c) present and represent the views of a cohesive rock lobster industry at all levels of Government and within the general community;
- (d) act as an adviser to, or intermediary between, the Members, State and Commonwealth Governments and their authorities, agencies and bodies, and the community;
- (e) work with the WCRLF for the resolution of common problems;
- (f) appoint and/or nominate representatives to various authorities, agencies and bodies relevant to the WCRLF;
- (g) promote the sustainable development of the WCRLF to provide profit, resilience and efficiency in the WCRLF through innovative programs, processes and practices and other means;
- (h) conduct, commission or support projects and programs relevant to marketing, promotion and research, development and extension in the WCRLF;
- (i) protect and promote the interests of Members of the WCRLF; and
- (j) undertake any activities that are considered necessary by the Association and its Members to achieve the above objects.

### **3.2 Property and income of Association**

The property and income of the Association shall be applied solely towards the promotion of the objects of the Association and no part of that property or income may be paid or otherwise distributed, directly or indirectly, to Members, except in good faith in the promotion of those objects.

## **4. POWERS OF ASSOCIATION**

The Association has, so far as the Act permits, the legal capacity of a natural person and has the power to do anything necessary or convenient for carrying out its objects and purposes.

## **5. MEMBERSHIP**

### **5.1 Categories of Membership**

- (a) The Association has the following levels of membership:
  - (1) Ordinary (or voting) Members; and
  - (2) Associate Members who are non-voting.
- (b) No person may be admitted as a Member of the Association other than a person eligible to be a voting Member, or an Associate Member.

### **5.2 Ordinary (or Voting) Members**

- (a) A holder of a MFL is eligible to be a member of the Association, but only while the holder of a MFL.
- (b) A person holding more than one MFL may hold an Ordinary Membership in respect of each MFL.
- (c) All holders of MFL's as recorded by the Registrar on incorporation day shall be invited to become members of the Association and their continued membership thereafter is subject to these Rules of Association.

(d) After incorporation day a person may apply to be an Ordinary Member of the Association and, subject to the Secretary confirming:

- (1) the applicant's eligibility for membership, and
- (2) payment of any fee set by the Board or general meeting, and
- (3) that the person has not previously been expelled by the Board;

the Secretary may, without the application being formally considered and determined by the Board, advise the applicant that their application has been successful and amend the Register in Rule 8 to include the new member.

(e) The voting entitlement of an Ordinary Member is as set out in Rules 15.

(f) Eligibility to be an Ordinary Member is subject to the provisions for termination or suspension of membership in rules 5.5 and 5.6.

### **5.3 Associate Members**

Any of the following persons are eligible to become an Associate Member of the Association for so long as they are:

- (a) a lessee of a MFL; and / or
- (b) a holder of Units; and / or
- (c) a lessee of Units; and / or
- (d) a person who the Board determines has a real and significant interest in the promotion and support of the objects of the Association.

Any such person may apply to the Association for Associate Membership.

In this rule 5.3 reference to a lessee includes a person holding a right to carry on commercial fishing in the WCRLF by agreement with the MFL licensee or with the Unit holder.

### **5.4 Applications for membership**

- (a) A person who wishes to become a Member must apply for membership to the Board in such form as the Board directs.
- (b) The application form must be signed by the applicant and be accompanied by the application fee (if any) in the sum the Association determines, from time to time, for each category of membership.
- (c) The Board will consider each application for membership at a Board meeting and must at that Board meeting, or the next Board meeting, accept or reject the application.
- (d) If an applicant for membership of the Association is accepted, the Board will notify the applicant in writing and update the register of Members. The Board may accept or reject in its absolute discretion:
  - (1) an application for Associate Membership; or
  - (2) any application for Ordinary Membership or Associate Membership by a person who has previously been suspended or expelled under rule 5.6.
- (e) If an applicant for membership of the Association is rejected, the Board will notify the applicant giving a summary of reasons. The applicant may appeal against the decision by giving notice to the Secretary of his or her intention to do so within a period of 14 days from the date he or she is advised of the rejection.

- (f) When notice is given under rule 5.4(e), the Association in a general meeting, no later than the next annual general meeting, must either confirm or set aside the decision of the Board to reject the application, after having afforded the applicant who gave that notice a reasonable opportunity to be heard by, or to make representations in writing to, the Association in the general meeting.

## 5.5 Termination of membership

A Member's membership of the Association shall terminate:

- (a) if the Member ceases to be eligible to be a Member as required by this rule 5;
- (b) if the Member gives notice in writing to the Association of his or her resignation from the Association;
- (c) if the Member fails to pay his or her annual subscription (if any) within the time fixed by the Board for subscriptions to be paid.
- (d) in accordance with rule 5.6, if the Board of Directors determines that a member has acted contrary to the interests of the objectives of the association.

## 5.6 Suspension and Expulsion of Members

- (a) If the Board receives a complaint that a Member has acted contrary to the interests of the Association, and the Board determines to consider the complaint, then the Board must give notice to the Member of:
  - (1) the proposed consideration of the complaint and of the time, date and place of the Board meeting at which the Board's determination of that complaint will occur; and
  - (2) sufficient particulars of the relevant alleged conduct complained of to allow the member to understand what is alleged against them, not less than 14 days before the date of the Board meeting referred to in rule 5.6(a)(1).
- (b) At the Board meeting referred to in rule 5.6(a)(1), the Board shall, after having afforded the Member concerned a reasonable opportunity to be heard by, or to make representations on the complaint in writing to the Board, either dismiss the complaint, or uphold the complaint, and then proceed to consider whether to suspend or expel the Member from membership of the Association, and must forthwith after deciding whether or not to suspend or expel that Member, communicate that decision in writing to that Member.
- (c) Subject to rule 5.6(e), a Member who has his or her membership suspended, ceases to be a member 14 day after the day on which the decision to suspend or expel a Member is communicated to him or her under rule 5.6(b).
- (d) A Member who is suspended or expelled under rule 5.6(b) must, if they wish to appeal against that suspension or expulsion, give notice to the Association of their intention to do so within the period of 14 days referred to in rule 5.6(c).
- (e) When notice is given under rule 5.6(d):
  - (1) the Association in a General Meeting, must either confirm or set aside the decision of the Board to suspend or expel the Member, after having afforded the Member who gave that notice a reasonable opportunity to be heard by, or to make representations in writing to, the Association in the General Meeting; and
  - (2) the Member who gave that notice is not suspended, nor do they cease to be a Member, unless and until the decision of the Board to suspend or expel him or her is confirmed under this rule 5.6(e).

## **5.7 Notification**

When a person becomes a Member they must promptly give the Secretary written notice of his or her full name and contact details and forthwith advise the Secretary of any changes thereto.

## **5.8 Representative of Body Corporate Member**

- (a) If a Member is a body corporate, then the body corporate may, by a written notice signed by a person authorized by that body corporate and delivered to the Association, nominate a natural person who may represent the body corporate and exercise all of the rights of the body corporate in relation to the Association, including being personally present at a general meeting of the Association and any such nomination will apply for as long as its terms provide, or until revoked if no term is set.
- (b) A Member who is a body corporate holding more than one Ordinary Membership under rule 5.2 (b) may appoint a natural person to represent the Member in relation to each Ordinary Membership held and to exercise all the Member's rights in relation to the Association.

# **6. RIGHTS OF MEMBERS**

## **6.1 Right to receive notices and accounts**

The Association may serve notices and advice on its website, by post, and other electronic medium the Board may decide to use, from time to time, for the following:

- (a) notice of the convening of any General Meeting; and
- (b) notice of any proposed election of Directors.

In addition the Association may use post and electronic medium to place notices for the following:

- (c) notice of any subscription and any other Association fees payable by that Member to the Association; and
- (d) a copy of the signed annual financial accounts, and in the case of joint Members, the Association will send the documents referred to in 6.1 (a), (b), (c) & (d) to the Member whose name appears first in the register of Members or as nominated by the MFL holder.

## **6.2 Right to vote at General Meetings**

- (a) Ordinary (or voting) Members have the right to vote at a General Meeting in accordance with rule 15.
- (b) Associate Members have no right to vote at a General Meeting.

# **7. OBLIGATIONS OF MEMBERS**

## **7.1 Subscription fee**

A Member shall promptly pay the relevant annual subscription fee, which fee shall be \$0 for an Ordinary Member and \$0 for an Associate Member until altered by the Association at a General Meeting.

## **7.2 Payment of subscription**

Where an annual subscription is payable:

- (a) a Member must pay to the Treasurer, annually on or before 1 July, or such other date as the Board from time to time determines, the amount of the subscription determined under rule 7.1.
- (b) A Member whose subscription is not paid within 3 months after the relevant date fixed by or under rule 7.2(a), ceases on the expiry of that period, to be a Member.

## **7.3 Payment of other fees**

A Member must pay any other fee levied in accordance with these rules. Joint Members are jointly and severally liable to pay such fees.

## **7.4 Notify change of name, email address and postal address**

A Member will give the Association written notice of any change in their contact details as soon as possible after the change, and in any event no later than 1 calendar month after the change.

# **8. REGISTER OF MEMBERS**

## **8.1 Register of Members**

- (a) The Secretary must maintain a current register of its Members, derived initially from the records maintained by the Registrar, showing the names of the Members and their postal or residential addresses.
- (b) The voting rights of an Ordinary Member in a poll at a General Meeting shall be suspended during any period of suspension of the person's membership.
- (c) The Secretary may from time to time verify the register of Members from the records maintained by the Registrar under the FRMA, including verifying who is the holder of a MFL and the associated unit entitlements in the WCRLF.
- (d) If requested by a Member, the Secretary shall verify the voting entitlement of any Member by reference to the records kept by the registrar and the requesting Member shall reimburse the Secretary any fee charged by the registrar for that purpose.
- (e) The name of a person whose membership is terminated under rule 5.5 must be deleted from the register of Members.

## **8.2 Inspection of register**

- (a) The Secretary or Chief Executive Officer must make the register of Members available at the Association office for the inspection and the making of copies by any Member during business hours.
- (b) The Secretary or Chief Executive Officer may determine that a member will be required to provide a statutory declaration setting out the purposes for which the making of a copy of the register of members is required and confirming that it is required for a purpose connected with the affairs of the Association.

## 9. BOARD

### 9.1 Board

- (a) The affairs of the Association will be managed by a Board of Directors where the majority of Directors must be Members. Each elected Director will serve a two year term. Half of those Director positions with the lowest votes in each zone will be up for re-election at the end of year one. Thereafter zonal representatives will be elected on a two year basis.
- (b) The Board will consist of:
  - (1) 2 elected A Zone representatives
  - (2) 2 elected B Zone representatives
  - (3) 4 elected C Zone representatives
  - (4) No more than two Independent Directors may be appointed by the Board
- (c) An Independent Director must not be:
  - (1) a holder of, or the nominated representative under rule 5.8 of a body corporate who is the holder of, a MFL in the WCRLF operating in A, B or C Zone;
  - (2) a lessee or the holder of Units in A, B or C Zone; or
  - (3) a skipper or other licensed fisherman engaged in the commercial fishing of rock lobster in the WCRLF in A, B or C Zone.
  - (4) subject to this rule, an appointed Independent Director of the Association will be for a period of no more than one year;
  - (5) subject to any requirement for Directors to retire by rotation;
  - (6) unless this rule provides otherwise subject to all other rules relating to Directors; and
  - (7) on the termination of the appointment as an Independent Director by death, retirement, resignation or another way stops being a Director of the Association.
- (d) A Director may hold one, but not more than two, offices on the Board
- (e) The powers of the Board shall include the power to:
  - (1) appoint up to two Independent Directors referred to in 9.1 (a) (4) on a yearly basis;
  - (2) determine the special skills required of an Independent Director which may be varied by the Board, from time to time, or from appointment to appointment;
  - (3) appoint the Chairperson, the Vice-Chairperson, the Secretary and the Treasurer;
  - (4) appoint and terminate the appointment of the Chief Executive Officer;
  - (5) Determine any fees and charges levied by the Association in accordance with rule 17.
  - (6) If a casual vacancy within the meaning of rule 9.3 occurs, the Board may appoint a Member, with the same eligibility criteria, or the nominated representative under rule 5.8 of a Body Corporate who is a Member, to fill the vacancy on the Board.
- (f) Any Director whose position is declared vacant is eligible for re-election to membership of the Board, subject to a maximum of three (3) consecutive terms.

## 9.2 Election of Directors and filling casual vacancies on Board

- (a) Subject to rule 9.1, Directors must be elected to membership of the Board at or with effect from an Annual General Meeting in accordance with rule 9.1(a) or appointed under rule 9.1(c) (1) and (2) or 9.2(f) (1) and (2). The election of Directors at or with effect from an Annual General Meeting must be conducted by way of a ballot as follows:
  - (1) at each Annual General Meeting one half of the positions must be declared vacant being the positions held by those elected Directors who have held office for the longest period;
  - (2) only Ordinary Members may vote on the election of Directors and an Ordinary Member may vote to elect a Director only in relation to the Zone or Zones in which the Ordinary Member holds Units of usual entitlement.
  - (3) An Ordinary Member who holds Units of usual entitlement on one MFL for more than one Zone may only vote for a Zone Representative for the Zone in which the Member holds the most Units of usual entitlement.
- (b) Subject to rule 9.1(a), a Director's term will be from his or her election at an Annual General Meeting until the second Annual General Meeting following the Annual General Meeting at which he or she was elected.
- (c) The Board shall decide a timetable for the election of Directors at the next Annual General Meeting including all or some the following procedures:
  - (1) notice to all Members:
    - i. stating the vacancies on the Board to be filled at the Annual General Meeting and the Zone to which each vacancy relates;
    - ii. calling for nominations of Members for election to those vacancies;
    - iii. specifying the electronic or other means by which nominators must send nominations to the Board;
    - iv. specifying that only Ordinary Members holding a MFL with Units of usual entitlement in the relevant Zone may nominate Members for election as a Zone Representative on the Board for that Zone;
    - v. requiring nominees to notify the Board of their willingness to be nominated and to provide any biographical statements and statements of policies they wish to be distributed to Members;
    - vi. stating a closing date by which nominations must be received by the Board.
  - (2) Distribution of ballot forms to Ordinary Members together with:
    - i. biographical statements and statements of policies provided by nominees;
    - ii. a statement that each Ordinary Member is entitled to vote for the election of a Director as a Zone Representative only as provided in rule 9.2(a)(2) and (3); and
    - iii. notice of the closing date by which ballot forms must be received by the Board.
- (d) Ordinary Members must cast their ballot by returning their ballot forms to the Board by the closing date and by the electronic or other form specified by the Board and ballot forms received after that date or not in the electronic or other form specified by the Board shall be invalid.
- (e) Except for appointees under rule 9.1(c) (1) and (2) or 9.2(i) (1) and (2), a person is not eligible for election to membership of the Board unless an Ordinary Member has nominated him or her for election in accordance with the directions for making nominations notified by the Board to members.
- (f) The Board may permit or require each or any of the procedures under rules 9.2(c) and (d) including a call for nominations, nominations made, biographical statements or statements of policies provided by nominees, the ballot form and other notifications,



and the return of ballots to the Board, to be in any form including electronic or digital.

- (g) A person who is eligible for election, or re-election, under this rule may:
  - (1) nominate himself or herself for election or re-election if he or she is an Ordinary Member, or the nominated representative under rule 5.8 of a body corporate who is an Ordinary Member; and
  - (2) subject to rule 9.2(a), vote for himself or herself.
- (h) If the number of persons nominated for election to Membership of the Board in accordance with these rules does not exceed the number of vacancies in that membership to be filled:
  - (1) the Secretary must report accordingly to; and
  - (2) the Chairperson must declare those persons to be duly elected as Directors at the Annual General Meeting.
- (i) If a vacancy remains on the Board after the application of rule 9.2(h), or when a casual vacancy within the meaning of rule 9.3 occurs in the membership of the Board:
  - (1) the Board may appoint a Member who is duly qualified to fill that vacancy; and
  - (2) a person appointed under this rule will hold office until the expiration of the term of the position that they were appointed to as if they had been an elected Director.
- (j) The Board may delegate, in writing, to one or more sub-committees (consisting of such Members and/or nominated representatives under rule 5.8 of body corporate Members as the Board thinks fit) the exercise of such functions of the Board as are specified in the delegation, other than:
  - (1) the power of delegation; and
  - (2) a function which is a duty imposed on the Board by the Associations Act or any other law.
- (k) Any delegation under rule 9.2(j) may be subject to such conditions and limitations as to the exercise of that function, or as to time and circumstances as are specified in the written delegation, and the Board may continue to exercise any function delegated.
- (l) The Board may, in writing, revoke wholly or in part, any delegation under rule 9.2(j).

### **9.3 Casual vacancy in Membership of Board**

A casual vacancy occurs in the office of a Director and that office becomes vacant if the Director:

- (a) dies;
- (b) resigns by notice in writing delivered to the Chairperson, or if the Director is the Chairperson, to the Vice-Chairperson and that resignation is accepted by resolution of the Board;
- (c) is convicted of an offence under the Associations Act;
- (d) is permanently incapacitated by mental or physical ill-health;
- (e) is absent from:
  - (1) 3 consecutive Board Meetings; or
  - (2) 3 Board Meetings in the same Financial Year without tendering an apology to the person presiding at each of those Board Meetings, of which meetings the Member received notice, and the Board has resolved to declare the office vacant;
- (f) ceases to be a Member; or

- (g) the subject of a resolution passed by a General Meeting terminating his or her appointment as a Director.

## **10. CHAIRPERSON AND VICE-CHAIRPERSON**

- (a) Subject to this rule, the Chairperson must preside at all General Meetings and Board Meetings.
- (b) In the event of the absence from a General Meeting of:
  - (1) the Chairperson, the Vice-Chairperson; or
  - (2) both the Chairperson and the Vice-Chairperson, a Member elected by the other Members present at the General Meeting, must preside at the General Meeting.
- (c) In the event of the absence from a Board Meeting of:
  - (1) the Chairperson, the Vice-Chairperson; or
  - (2) both the Chairperson and the Vice-Chairperson, a Board Member elected by the other Board Members present at the Board Meeting, must preside at the Board Meeting.

## **11. SECRETARY**

The Secretary must:

- (a) co-ordinate the correspondence of the Association;
- (b) keep full and correct minutes of the proceedings of the Board and of the Association;
- (c) comply on behalf of the Association with:
  - (1) section 53 of the Associations Act with respect to the register of Members, as referred to in rule 8.1;
  - (2) the Associations Act by keeping and maintaining, in an up to date condition, the rules of the Association and, upon the request of a Member of the Association, must make available those rules for the inspection of the Member and the Member may make a copy of, or take an extract from, the rules but will have no right to remove the rules for that purpose; and
  - (3) section 58 of the Associations Act by maintaining a record of:
    - i. the names and contact details of the persons who hold the offices of the Association provided for by these rules, including all offices held by the persons who constitute the Board; and
    - ii. the Secretary must, upon the request of a Member of the Association, make available the record for the inspection of the Member and the Member may make a copy of, or take an extract from, the record but will have no right to remove the record for that purpose.
- (d) unless the Members resolve otherwise at a General Meeting, have custody of all books, documents, records and registers of the Association, including those referred to in paragraph (c) but other than those required by rule 12 to be kept and maintained by, or in the custody of, the Treasurer; and
- (e) perform such other duties as are imposed by the Association Act or these rules on the Secretary.

## **12. TREASURER**

The Treasurer:

- (a) is responsible for the receipt of all monies paid to, or received on behalf of, the Association;
- (b) must pay all monies referred to in paragraph (a) into such account or accounts of the Association as the Board may from time to time direct;
- (c) shall make payments from the funds of the Association with the authority of a General Meeting, or of the Board, and in so doing ensure that all cheques are signed by himself, or herself, and at least one other authorized Director, or by any two others as are authorized by the Board;
- (d) must comply on behalf of the Association with Part 5 of the Associations Act with respect to the accounting records of the Association by:
  - (1) keeping such accounting records that correctly record and explain the financial transactions and financial position of the Association;
  - (2) keeping its accounting records in such manner as will enable true and fair accounts of the Association to be prepared from time to time;
  - (3) keeping its accounting records in such manner as will enable true and fair accounts of the Association to be conveniently and properly audited; and
  - (4) submitting to Members at each Annual General Meeting of the Association, accounts of the Association showing the financial position of the Association at the end of the immediately preceding Financial Year.
- (e) whenever directed to do so by the Chairperson, shall submit to the Board a report, balance sheet or financial statement in accordance with that direction;
- (f) unless the Members resolve otherwise at a General Meeting, shall have custody of all securities, books and documents of a financial nature and accounting records of the Association, including those referred to in paragraphs (d) and (e); and
- (g) shall perform such other duties as are imposed by these rules on the Treasurer.

## **13. CHIEF EXECUTIVE OFFICER**

- (a) The Board may appoint a person to the position of Chief Executive Officer for the period and on the terms (including as to remuneration) the Board sees fit.
- (b) The Board will use its best endeavours to ensure the Chief Executive Officer:
  - (1) declares any interests he or she has in the WCRLF in their application for appointment as Chief Executive Officer and keeps such declaration of interests up to date at all times; and
  - (2) complies with Division 2 of Part 4 of the Associations Act in respect of any matter in which he or she has a direct, or indirect, pecuniary interest as referred to in that Part, as if the Chief Executive Officer is a Director.
- (c) The Board may delegate, in writing, to the Chief Executive Officer the exercise of such functions of the Board as are specified in the delegation other than:
  - (1) the power of delegation; and
  - (2) a function which is a duty imposed on the Board by the Act or any other law.
- (d) Any delegation under rule 13(c) may be subject to such conditions and limitations as to the exercise of that function, or as to time and circumstances as are specified in

the written delegation, and the Board may continue to exercise any function delegated.

- (e) The Board may, in writing, revoke wholly or in part any delegation under rule 13(c).
- (f) The Chief Executive Officer shall not, at any time, be eligible to vote at any Board Meeting and shall be disqualified from being appointed as a Director, but may attend Board Meetings at the discretion of the Board.
- (g) The Board has the power to appoint and terminate the Chief Executive Officer at any time and on such terms as it determines.

## **14. PROCEEDINGS OF BOARD**

### **14.1 Frequency of meetings**

Subject to agreement or variation of a majority of the Board, the Board must meet together for the dispatch of business of the Association not less than once each 3 months.

### **14.2 Convening of meetings**

The Chairperson, or at least half the Members of the Board, may at any time convene a meeting of the Board.

### **14.3 Quorum**

At a Board Meeting at least five (5) Members must be present to constitute a quorum. Proxies held by Director/s will not constitute Director/s for the purpose of being present for the meeting.

### **14.4 Proxies at Board meetings**

A Director (in this rule called “the appointing Director”) may appoint in writing another Director to be the proxy of the appointing Member Director and to attend, and vote on behalf of the appointing Member Director at any Board meeting.

### **14.5 Voting**

Each Director has a deliberative vote on all matters before the Board whether or not relating to the Zone which they represent. The Board will endeavor to determine all resolutions by consensus. In the case of resolutions for which the Chairperson calls for a vote, such resolutions shall be decided by a simple majority. Tied voting leads to the resolution lapsing.

### **14.6 Board Meetings and Transactions outside Board Meetings**

The Board may meet together in person or by telephone or any other contemporaneous electronic communication as they think fit. A Director participating in a meeting by telephone or other electronic means is to be taken to be present in person at the meeting.

### **14.7 Circular Resolutions**

- (a) The Chairperson or Chief Executive Officer may cause to be sent a written copy of a resolution to be proposed to all members of the Board notwithstanding that no meeting of the Board has been convened to consider the proposed resolution.
- (b) Subject to paragraph (c) a copy of the resolution in writing proposed under paragraph (a) which has been signed in one or more counterparts by each member of the Board

who has voted within five days of receiving a copy of the proposed resolution shall be as valid and effectual as if it had been passed at a meeting of the Board members duly convened and constituted.

- (c) If within the five day period any member of the Board advises the Chairperson or the Chief Executive Officer that he or she objects to the resolution being passed as a circular resolution under this Rule, then the resolution shall not be passed as a circular resolution and the Chairperson or the Executive Officer shall cause a meeting of the Board to be convened to consider the proposed resolution.
- (d) Every circular resolution passed under this Rule shall be placed in the minute book of the Board.

## **14.8 Pecuniary interest**

A Director must comply with sections 21 and 22 of the Associations Act in respect of any matter in which he or she has a direct or indirect pecuniary interest as referred to in those sections.

## **14.9 Expenses**

The Association must reimburse a Director for expenses properly incurred by him or her in connection with the business of the Association and his or her duties as a Director as determined by the Board.

## **14.10 Indemnity**

The Association must indemnify a Director from and against any claim, action, suit, demand, cost, damage, expense and other liability which that Director may suffer or incur in the proper discharge of his or her duties as a Director, except where the claim, action, suit, demand, cost, damage, expense and other liability arises from the Director's own negligence, breach of duty, or willful act or default.

# **15. GENERAL MEETINGS**

## **15.1 Convening of meetings**

The Board:

- (a) may at any time convene a Special General Meeting;
- (b) must convene Annual General Meetings within the time limits provided for the holding of such meetings by section 50 of the Associations Act; and
- (c) must, within 20 Business Days of receiving a written request from voting Members who represent not less than 5% of the voting Members, convene a Special General Meeting for the purpose specified in that request.

## **15.2 Request for meeting**

- (a) The voting Members making a request referred to in rule 15.1 must state in that signed application the reasons for the request.
- (b) If a Special General Meeting is not convened within the relevant period of 20 Business Days referred to in rule 15.1(c), the Members who made the request concerned, may themselves, convene a Special General Meeting as if they were the Board.
- (c) When a Special General Meeting is convened under rule 15.2(b), the Association

must pay the reasonable expenses (notice to Members and venue hire only) of convening and holding the Special General Meeting.

### 15.3 Notice of meeting

- (a) Subject to rule 15.3(c), and subject to section 52 of the Associations Act the Secretary must give to all Members not less than:
  - (1) 14 days notice of a Special General Meeting; and
  - (2) 14 days notice of an Annual General Meeting; and
  - (3) 21 days notice of a meeting at which a special resolution is proposed to be moved.
- (b) A notice given under rule 15.3(a) must specify:
  - (1) when and where the General Meeting concerned is to be held; and
  - (2) particulars of the business to be transacted at the General Meeting concerned (including any motions to be moved at the meeting) and of the order in which that business is to be transacted; and
  - (3) be given as provided in rule 6.1
- (c) Any notice given in accordance with rule 15.3(a), takes effect from the time it is received and is taken to be received:
  - (1) if sent by email to the email address of the Member (provided by that Member), on the Business Day following the day on which the email was sent;
  - (2) if posted on the Association's website on the Business day following the posting; or
  - (3) if posted on other electronic medium on the day following the posting

### 15.4 Quorum

- (a) At a General Meeting, Ordinary Members present in person or by proxy who represent not less than 5% of the total Ordinary Members constitute a quorum; an Ordinary Member who is present in person or by proxy who holds multiple Ordinary Memberships under rule 5.2(b) is counted as one Member for each Ordinary Membership held for the purposes of determining a quorum.
- (b) If within 30 minutes after the time specified for the holding of a General Meeting in a notice given under rule 15.3(a) or (c);
  - (1) as a result of a request or notice referred to in rule 15.1(c) or as a result of action taken under rule 15.2(b) a quorum is not present, the General Meeting lapses; or
  - (2) otherwise than as a result of a request, notice or action referred to in paragraph (1), the General Meeting stands adjourned to the same time on the same day in the following week and to the same venue.
- (c) If within 30 minutes of the time appointed by 15.4(b)(2) for the resumption of an adjourned General Meeting a quorum is not present, the Members who are present in person or by proxy may proceed with the business of that General Meeting as if a quorum were present.

### 15.5 Adjournment

- (a) The Chairperson may, with the consent of a General Meeting at which a quorum is present, and must, if so directed by such a General Meeting, adjourn that General Meeting from time to time and from place to place.
- (b) There must not be transacted at an adjourned General Meeting any business, other than business left unfinished or on the agenda at the time when the General Meeting was

adjourned.

- (c) When a General Meeting is adjourned for a period of 20 Business Days or more, the Secretary must give notice under rule 15.3 of the adjourned General Meeting as if that General Meeting were a fresh General Meeting.

## 15.6 Passing of resolutions

At a General Meeting:

- (a) an Ordinary Resolution put to the vote will be decided by a simple majority of votes of Members present in person or by proxy taken in such manner as the Chairperson directs, subject to rules 15.8 and 15.9.
- (b) a Special Resolution put to the vote will be decided in accordance with section 51(1) of the Associations Act and also in accordance with rule 15.9 will be decided by no less than three fourths majority of Ordinary Members present and voting in person or by proxy.
- (c) a declaration by the Chairperson that a resolution has been passed on a show of hands as an Ordinary Resolution will be conclusive evidence of that fact unless, during the General Meeting at which the resolution is submitted, a poll is demanded in accordance with rule 15.8.

## 15.7 Proxy and representative

- (a) A Member (**Appointing Member**) may appoint a representative who is a natural person to be the proxy of the appointing Member, and to attend and vote on behalf of the appointing Member, at any General Meeting. The appointment shall be in writing and signed by the appointing Member and the Appointing Member shall be taken to be present at the General Meeting.
- (b) A Member which is a body corporate may appoint in writing a natural person to represent it at a particular General Meeting or at all General Meetings and the Member shall be taken to be personally present at the General Meeting or General Meetings.
- (c) The appointment made under rule 15.7(b) must be made by a resolution of the Board, or other governing body, of the corporation concerned and a copy of which resolution is lodged with the Secretary.
- (d) A Member who holds more than one Ordinary Membership under rule 5.2 (b) may appoint a proxy or representative under rule 15.7 (b) for each Ordinary Membership to exercise all the rights of the Member including voting rights of the Member under these rules.

## 15.8 Poll

- (a) At a General Meeting, a poll may be demanded by the Chairperson or by any voting Member present in person or by proxy and, if so demanded, must be taken in such manner as the Chairperson directs.
- (b) If a poll is demanded and taken under rule 15.8(a), a declaration by the Chairperson of the result of the poll is conclusive evidence of the matter so declared.
- (c) On a show of hands each Ordinary Member present has one vote for each Ordinary Membership held by the Member and for avoidance of doubt a Member holding more than one Ordinary Membership under rule 5.2(b) has one vote for each such Ordinary Membership.
- (d) A poll demanded under rule 15.8(a) must be taken immediately on that demand being made.

## 15.9 Voting rights

- (a) At any General Meeting a resolution by the vote of the meeting shall be decided on a show of hands of Ordinary Members unless a poll is demanded under rule 15.8(a).
- (b) In the case of equality in the votes, whether on a show of hands or on a poll, the question is determined in the negative.
- (c) On a show of hands each Ordinary Member present has one vote for each Ordinary Membership held by the Member and for avoidance of doubt a Member holding more than one Ordinary Membership under rule 5.2(b) has one vote for each such Ordinary Membership.
- (d) On a poll, each Ordinary Member present has one vote for each Ordinary Membership held by the Member and for avoidance of doubt a Member holding more than one Ordinary Membership under rule 5.2(b) has one vote for each such Ordinary Membership. The voting entitlement set out in the Register of Members maintained by the Secretary and the Register shall be as provided in this rule and shall be conclusive proof of that voting entitlement.
- (e) In the case of joint voting Members, if more than one of the joint voting Members purports to vote then only the vote of the voting Member whose name appears first in the register of Members counts.

## 16. MINUTES OF MEETINGS

### 16.1 Proper minutes

The Secretary must cause proper minutes of all proceedings of all General Meetings and Board Meetings to be taken and accepted as true and correct at the next meeting.

### 16.2 Responsibilities of Chairperson

The Chairperson must ensure that the minutes taken at a General Meeting or Board Meeting, under rule 16.1, are checked and signed as correct by the Chairperson of the General Meeting or Board Meeting to which those minutes relate, or by the Chairperson of the next succeeding General Meeting or Board Meeting, as the case requires.

### 16.3 Minutes prima facie evidence

When minutes have been entered and signed as correct under this rule, they are, until the contrary is proved, evidence that:

- (a) the General Meeting or Board Meeting to which they relate (in this rule called **the meeting**) was duly convened and held;
- (b) all proceedings recorded as having taken place at the meeting did in fact take place at the meeting; and
- (c) all appointments or elections purporting to have been made at the meeting have been validly made.

## 17. COMMON SEAL OF ASSOCIATION

- (a) The Association may have a Common Seal that shall be kept in the custody of the Secretary and shall not be used without the authority of the Board. Any two Directors or a Director and the Secretary shall witness the affixing of the Seal and the use of the Seal shall be recorded in the Minute Book.



- (b) The Association may execute a document without using a common seal if the document is signed by:
  - (1) 2 Directors; or
  - (2) one Director and a person authorised by the Board; or
  - (3) in the manner authorised by the Board by the Chief Executive Officer or other person duly authorised by the Board.

## **18. ANNUAL SUBSCRIPTION**

### **18.1 Notice of annual subscription**

Before, or as soon as practicable after the commencement of each Financial Year, the Board will give each Member notice in writing of the annual subscription (if any) payable by the Member (**Contribution Notice**). In the case of a nil (\$0) subscription there is no requirement to send a notice to Members.

### **18.2 Payment**

A Member must pay to the Association the annual subscription in the amount specified in the Contribution Notice at the time the Board specifies.

### **18.3 Other charges**

The Board may at any time, from time to time, set and levy a fee or charge to Members in addition to the annual subscription by sending to Members a notice specifying the fee or charge payable. A Member must pay the fee or charge in respect of the amount determined under this rule to the Association at the time the Board specifies.

## **19. RULES OF ASSOCIATION**

- (a) The Association may alter or rescind these rules, or make rules additional to these rules, as per rule 15.6.
- (b) These rules bind every Member and the Association to the same extent as if every Member and the Association had signed and sealed these rules and agreed to be bound by all their provisions.

## **20. INSPECTION OF RECORDS ETC. OF ASSOCIATION**

A Member may, at any reasonable time during business hours, inspect at the office of the Association without charge, the books, documents, records and securities of the Association.

## **21. DISPUTES AND MEDIATION**

- (a) The dispute procedure set out in this rule applies to disputes under these rules between:
  - (1) a Member and another Member; or
  - (2) a Member and the Association.
- (b) The parties to the dispute must meet and discuss the matter in dispute, and if possible, resolve the dispute within 10 Business Days of one party to the dispute giving written notice to the other that a dispute has arisen (**Dispute Notice**).

- (c) If the parties are unable to resolve the dispute at the meeting, or if a party fails to attend that meeting, then the parties must within 20 Business Days of the giving of a Dispute Notice, hold a meeting in the presence of a mediator.
- (d) The mediator must be a person chosen by agreement between the parties, or in the absence of agreement:
  - (1) in the case of a dispute between a Member and another Member, a person appointed by the Board;
  - (2) in the case of a dispute between a Member and the Association, a person who is a mediator appointed by the Supreme Court of Western Australia.

The mediator may be a Member of the Association but cannot be a Member who is a party to the dispute.

- (e) The parties to the dispute must, in good faith, attempt to settle the dispute by mediation.
- (f) In conducting the mediation, the mediator must:
  - (1) give the parties to the mediation process every opportunity to be heard;
  - (2) allow due consideration by all parties of any written statement submitted by any party; and
  - (3) ensure that natural justice is accorded to the parties to the dispute throughout the mediation process.
- (g) The mediator must not determine the dispute.
- (h) The mediation must be confidential and without prejudice.
- (i) If the mediation process does not result in the dispute being resolved, the parties may seek to resolve the dispute in accordance with the Associations Act or otherwise at law.
- (j) The cost of mediation is to be shared by both parties or as otherwise agreed by the parties.

## **22. DISTRIBUTION OF SURPLUS PROPERTY ON WINDING UP OF ASSOCIATION**

- (a) If upon the cancellation of the incorporation or the winding up of the Association there remains, after satisfaction of all its debts and liabilities, any property whatsoever, the same must not be paid to or distributed among the Members, or former Members.
- (b) On the voluntary cancellation of the incorporation or the winding up of the Association under Division 1 of Part 10 of the Associations Act, surplus property must be distributed as determined by a distribution plan approved by special resolution of the Association and approved by the Commissioner and in any other case as provided by the Associations Act.
- (c) In this rule, surplus property, in relation to the Association, means property remaining after satisfaction of:
  - (1) the debts and liabilities of the Association; and
  - (2) the costs, charges and expenses of winding up or cancelling the incorporation of the Association but does not include books relating to the management of the Association.

**WEST COAST ROCK LOBSTER MANAGED FISHERY**  
**ANNUAL MANAGEMENT MEETING- DEPARTMENTAL UPDATE**

**FRIDAY 27<sup>th</sup> JUNE 2014**

**Swan Yacht Club**  
**Riverside Road, East Fremantle**

MINUTES

**Welcome and Introduction**

Angus Callander, Chairman and Executive Officer of the Industry Consultation Unit (ICU) opened the meeting at 09:35, welcomed attendees and provided an overview of the consultation process that is being undertaken through the Service Level Agreement between the Department of Fisheries (the Department) and the Western Australian Fishing Industry Council (WAFIC).

Angus acknowledged the presence of Hon Dave Kelly, Shadow Minister for Water; Fisheries; Youth, and Hon Simone McGurk, MLA, Member for Fremantle, and thanked them for taking time from their busy schedules to attend the meeting.

Angus asked attendees to introduce themselves and outline their backgrounds.

**Present: Attachment 1 – Attendee information**

**Apologies**

There were no apologies

**Opening remarks from the Western Rock Lobster Council**

John McMath, CEO of the Western Rock Lobster Council (WRLC) welcomed attendees and noted the success of the two Annual Management Meetings that took place earlier in the week. John outlined the WRLC and his role of CEO, and encouraged all attendees to engage in discussion throughout the meeting.

**Stock Status Report**

Simon de Lestang provided a presentation on Stock Assessment and Research within the West Coast Rock Lobster Managed Fishery (the Fishery) (Attachment 2). Simon discussed:

- Catch and effort statistics,
- Puerulus counts,
- Small-mesh pots and POTBots,
- Independent Breeding Stock Survey (IBSS),
- Stock Assessment and MEY catch range,
- Whale entanglement mitigation, and
- New projects.

In response to questions from various attendees, Simon noted that;

- Pink Snapper predated on tagged lobsters released from boats may be one explanation behind the decline in Big Bank catch over the last three years. The Department is commencing to release the lobsters in cages installed with Vitamin D pills – the pills will slowly dissolve and open the cage, allowing the lobsters to reach the bottom without being predated on.
- Jason How has started collating information on the environment and area each whale entanglement occurs. There doesn't seem to be a 'hot' area, however it appears that most entanglements occur in water deeper than 20 fathoms.
- Tags can be returned without the lobster they were attached to, but the most beneficial scenario would be to photograph and record the details of the lobster and throw it back with the tag.
- MSC have stated that the risk to the whale population is negligible; whale entanglements are an issue because of public perception, not because of environmental damage.

Nick Sofoulis (EO CZCA) questioned the possibility of developing a signoff from MSC stating that the whale entanglement issue is not a major environmental concern and that fishermen are taking as much initiative as they can in a bid to decrease whale entanglements. Nick noted the need to develop a whale entanglement taskforce of trained people along the coast who are able to go out and act on whale entanglements as soon as they are observed, decreasing the stress and suffering endured by the whales.

### **Management Update**

Jo Kennedy provided a Management Update (Attachment 3) on the following:

- Harvest Strategy and Control Rules
- 2015 TACC
- 2014 MSC Surveillance Audit
- Whale Entanglement Mitigation
- Licensing Period Transition
- Management Plan Amendments
- Regulation Amendments
- Minimum Operating Holding

In response to questions from various attendees, Jo noted that:

- You can pay CFL access fees through Fish Eye but not MFLs at this stage.
- In regards to lowering the Minimum Unit Holding, the general consensus from Geraldton and Jurien was that did not have an issue with this occurring.
- The Department of Fisheries has written to the Department of Parks and Wildlife requesting a review of the environmental status of Humpback Whales.

Jim Penn noted that he had studied Lobster Fisheries all over the world and every other ITQ Fishery has a Maximum Unit Holding, to prevent an aggregation to such an extent it alters the market.

Greg McDonald noted he had been told by the Department of Transport that Rock Lobster Fishers are not permitted to operate on boats with outboard motors.

**Action:** Jo Kennedy will investigate why there is a prohibition on outboard motors on vessels being used for Rock Lobster fishing.

It was agreed that the ban on using hide-bait should be kept in place for precautionary reasons.

### **Fish Eye**

Leith Pritchard introduced Tyson Lyon, who works at the Fish Eye Helpdesk Monday-Friday from 9 am until 5 pm. Leith provided an update on Fish Eye (Attachment 4), including the:

- Benefits
- Progress for the Rock Lobster Fishery
- Cost
- Importance of transitioning to electronic services

In response to questions from various attendees, Leith noted that:

- The system has been amended so that you only have to change your password once a year, but they are looking into amending it again so that you don't have to change your password at all unless you choose to.
- Leith will bring up implementing payment of Access Fees using the Fish Eye system at the next Fish Eye Meeting.

### **Compliance Update**

Mick Kelly provided a Compliance Update (Attachment 5), discussing:

- Risk assessment
- Integrity within the Fishery
- Integrity within quota system
- 2013 season catch outcome and overview
- Water loss assessment
- 2013 season catch quota balances and compliance
- Serious Offences Unit
- Whale entanglement mitigation

In response to questions from various attendees, Mick noted that:

- Fisheries Officers would not exercise leniency for people who went over quota even if they had been under quota in previous years – they would still be sent to court, but the court may then exercise leniency.
- People that go over quota by less than 30 kg have 21 days to pay back to the FRDF from the date they went over quota. There is no reminder letter sent out so it is up to the Licence Holder to remember.
- 'Trucking' occurs when someone declares the lobsters were caught in a different zone than they actually were.

- In regards to whale entanglement mitigation gear restrictions, the Department will begin to give out \$750 fines for non-compliance. If they can see people are putting in the effort to comply, they will be a bit lenient, but if not they will take it more seriously.
- You would not get charged \$750 for each one of your pots – you can get up to three infringements and then you will be summoned to court as at that point it is viewed as reckless.
- Fishers operating from Seabird should go through the WRLC to submit a report to Stewart Smith explaining that they have to land their catch in a different area as the road is flooded, and he should put a quick exemption in place.

John Cole noted that there is starting to be too many regulations in the industry – it was his view that if you impose a new regulation you should take one of the insignificant ones away. Mick agreed with this point.

Angus closed the Departmental Update section of the AMM at 13:15.

END OF DEPARTMENTAL UPDATE SECTION OF AMM

***Action Items Attached***

**Chair:** 

**Date: 1<sup>st</sup> October 2014**

### Action Items

<b>Item</b>	<b>Subject</b>	<b>Action</b>	<b>Officer/ Department</b>	<b>Status</b>
<b>1</b>	Outboard motors on Rock Lobster fishing vessels	Jo Kennedy will investigate why there is a prohibition on outboard motors on vessels being used for Rock Lobster fishing.	<b>Jo Kennedy, DoF</b>	

**WEST COAST ROCK LOBSTER MANAGED FISHERY**  
**ANNUAL MANAGEMENT MEETING- DEPARTMENTAL UPDATE**

**TUESDAY 24<sup>th</sup> JUNE 2014**

**The African Reef Function Centre**  
**5 Broadhead Avenue, Geraldton**

MINUTES

**Welcome and Introduction**

Angus Callander, Chairman and Executive Officer of the Industry Consultation Unit (ICU) opened the meeting at 09:35, welcomed attendees and provided an overview of the consultation process that is being undertaken through the Service Level Agreement between the Department of Fisheries (the Department) and the Western Australian Fishing Industry Council (WAFIC).

Angus thanked attendees for driving the distance to Geraldton, and asked all non-licence holders to introduce themselves and outline their background.

**Present: Attachment 1 – Attendee information**

**Apologies:**

Matt Kalazich

**Opening remarks from the Western Rock Lobster Council**

John McMath, CEO of the Western Rock Lobster Council welcomed attendees and acknowledged the presence of five of the directors of the Council. John outlined the Western Rock Lobster Council and his role of CEO. John encouraged all attendees to engage in discussion throughout the meeting.

**Stock Status Report**

Simon de Lestang provided a presentation on Stock Assessment and Research within the West Coast Rock Lobster Managed Fishery (the Fishery) (Attachment 2). Simon discussed:

- Catch and effort statistics,
- Puerulus counts,
- Small-mesh pots and POTBots,
- Independent Breeding Stock Survey (IBSS),
- Stock Assessment and MEY catch range,
- Whale entanglement mitigation, and
- New projects.

In response to questions from various attendees, Simon noted that;

- The difference between Boral Kinnear and Tanikalon fibres would not have an impact on areas with low settlement such as Cape Mentelle, as these areas have always used Boral Kinnear.
- With quota being used, the Fishery is now more resilient to recruitment failure/collapse.



- There is definitely a correlation between the puerulus and the timing of spawning. The fact that lobsters are spawning later will not affect the settlement index.
- The Leeman closed area would reopen when MSC was satisfied with the research it was being used for, unless Licence Holders want it to stay closed.
- MSC is guided by the Department on the strategy used to set the TACC. MSC currently are comfortable with the Departments assessment with the sustainability of the Fishery
- Lifting biological controls to allow the take of setose lobsters should not have a detrimental impact on egg production – females start spawning twice in their second reproductive season onwards (it is not just the largest females that spawn twice).
- Whale entanglement data only includes verified rock lobster gear.
- Tags can be returned without the lobster they were attached to.

Licence Holders agree that the most appropriate action for fishers to do with tagged lobsters was to photograph and record their details and return them to the Fishery. Simon agreed, but emphasised this is not compulsory and they may keep the lobsters if they wish.

Peter Glass commented on the need for Industry to put on a positive front, in regards to whale entanglements. Peter said the public should be aware the Rock Lobster industry is making a lot of effort to prevent entanglements.

### **Management Update**

Jo Kennedy provided a Management Update (Attachment 3) on the following:

- Harvest Strategy and Control Rules
- 2015 TACC
- 2014 MSC Surveillance Audit
- Whale Entanglement Mitigation
- Licensing Period Transition
- Management Plan Amendments
- Regulation Amendments
- Minimum Operating Holding

In response to questions from various attendees, Jo noted that;

- Licence Holders have various choices in regards to relaxing pot usage rules outside of the whale migration – for example maybe they would just like to relax it for the period the whites are running.
- Reducing the minimum number of operating units is not something that can occur immediately – once the new Act comes into place, it can take up to 12 months to pass new regulations.
- There was a suggestion of introducing a two-week period where Licence Holders can lease quota when they have accidentally gone over their entitlement. However, the Department would rather the Licence Holders take responsibility for their own individual quota allocation. The suggested TACC range of 6640t – 7302t is developed from the MEY

analysis and it is predicted this catch range will be most profitable for the Fishery.

Angus noted that the Western Rock Lobster Council needs feedback from Industry in regards to how they would like the TACC to be set, and whether they would like the three biological input controls removed. He noted that the Industry forum that will follow the Departmental Annual Management Meeting is the forum to discuss TACC setting recommendations for 2015.

### **Fish Eye**

Leith Pritchard provided an update on Fish Eye (Attachment 4), including the:

- Benefits
- Progress for the Rock Lobster Fishery
- Cost
- Importance of transitioning to electronic services

### **Compliance Update**

Ron Shepherd provided a Compliance Update (Attachment 5), discussing:

- Risk assessment
- Integrity within the Fishery
- Integrity within quota system
- 2013 season catch outcome and overview
- Water loss assessment
- 2013 season catch quota balances and compliance
- Serious Offences Unit
- Whale entanglement mitigation

Angus closed the Departmental Update section of the AMM at 13:15.

END OF DEPARTMENTAL UPDATE SECTION OF AMM

Chair: 

**Date: 1<sup>st</sup> October 2014**

**WEST COAST ROCK LOBSTER MANAGED FISHERY**  
**ANNUAL MANAGEMENT MEETING- DEPARTMENTAL UPDATE**

**WEDNESDAY 25<sup>th</sup> JUNE 2014**

**Jurien Bay Sport and Recreation Centre**  
**Bashford Street, Jurien Bay**

MINUTES

**Welcome**

Angus Callander, Chairman and Executive Officer of the Industry Consultation Unit (ICU) opened the meeting at 09:30, welcomed attendees and provided an overview of the consultation process that is being undertaken through the Service Level Agreement between the Department of Fisheries (the Department) and the Western Australian Fishing Industry Council (WAFIC).

Angus asked attendees to introduce themselves and outline their background.

**Present: Attachment 1 – Attendee information**

**Apologies:**

Toni Jurinovich

Tony Jurinovich

**Opening remarks from the Western Rock Lobster Council**

John McMath, CEO of the Western Rock Lobster Council welcomed attendees and acknowledged the presence of the representatives from ANZ Bank, Rabobank and Murphy Oil. John outlined the Western Rock Lobster Council and his role of CEO. John encouraged all attendees to engage in discussion throughout the meeting.

**Stock Status Report**

Simon de Lestang provided a presentation on Stock Assessment and Research within the West Coast Rock Lobster Managed Fishery (the Fishery) (Attachment 2). Simon discussed:

- Catch and effort statistics,
- Puerulus counts,
- Small-mesh pots and POTBots,
- Independent Breeding Stock Survey (IBSS),
- Stock Assessment and MEY catch range,
- Whale entanglement mitigation, and
- New projects.

In response to questions from various attendees, Simon noted that;

- High grading is not factored into the Catch Rate data, however it is assumed there has been no significant change in high grading in 2014 compared with 2013.
- The most efficient way to run the Fishery is to take everything in the pot, hence the possibility of removing the input controls. If there is an issue with sustainability, the quota can be decreased. Ultimately the decision to keep or remove input controls is up to Licence Holders.
- Tags can be returned without the lobster they were attached to, however the most beneficial scenario would be to photograph and record the details of the lobster and return it with the tag.

There were comments from attendees concerning:

- The lack of consultation from the Department with Producers – Producers have a lot of information that should be incorporated into MEY figures.
- Disappointment regarding the previous lack of Industry representatives in the Whale Entanglement Mitigation Taskforce.
- The need to look at the Cumulative Catch data as a whole Fishery rather than in zones.

**Action:** Simon De Lestang to develop a ‘Cumulative Catch – Whole Fishery’ figure using the data from all zones combined.

### **Management Update**

Jo Kennedy provided a Management Update (Attachment 3) on the following:

- Harvest Strategy and Control Rules
- 2015 TACC
- 2014 MSC Surveillance Audit
- Whale Entanglement Mitigation
- Licensing Period Transition
- Management Plan Amendments
- Regulation Amendments
- Minimum Operating Holding

In response to questions from various attendees, Jo noted that:

- Industry could choose for the TACC to be set at a level outside of the range recommended by the Department (6640t – 7302t), however Industry would need to provide reasoning as to why they are deviating from this range.
- The Department constantly reviews the Whale Entanglement Mitigation rules, however License Holders must adhere to the current arrangements until any amendments are implemented.

Clint Moss (LH) noted that there should be one single device gazetted to use for Whale Entanglement Mitigation, as currently fishermen all have different equipment and it is a safety issue.

There were varying opinions from Licence Holders regarding a possible decrease in Minimum Operating Holding.

### **Fish Eye**

Leith Pritchard provided an update on Fish Eye (Attachment 4), including the:

- Benefits
- Progress for the Rock Lobster Fishery
- Cost
- Importance of transitioning to electronic services

In response to questions from various attendees, Leith noted that;

- Fishers will pay half of the original budget (\$5.7m of \$11.4m), and the specific amount each fishery pays is based on their GVP. In terms of Rock Lobster it is estimated that approximately \$4.7m will be amount recovered from this Sector. The cost to industry is fixed, so if there are costs that not covered by the budget the Department will absorb these accordingly.
- Although Leith may not be working in Fish Eye after the end of the year, any questions can be directed to Tyson Lyon at the Help Desk, during office hours Monday-Friday.
- Leith agrees that the ID code and pin should not have to be reset unless an individual wants to change them, and he would raise this issue at the next Fish Eye Meeting.

### **Compliance Update**

Ron Shepherd provided a Compliance Update (Attachment 5), discussing:

- Risk assessment
- Integrity within the Fishery
- Integrity within quota system
- 2013 season catch outcome and overview
- Water loss assessment
- 2013 season catch quota balances and compliance
- Serious Offences Unit
- Whale entanglement mitigation

In response to questions from various attendees, Ron noted that;

- Anyone 30 kilograms over quota will be prosecuted, as it is written in the Act as a 'serious offence'.
- Ron agreed that breakdowns should not be subject to a time limit, however he has already tried unsuccessfully to have this amended. He encouraged License Holders to raise this issue with the Western Rock Lobster Council.

It was noted by one of the Fisheries Officers that the Fisheries Act is a Regulatory Act not a Government Act and accordingly a permanent criminal record will not be recorded.

Angus closed the Departmental Update section of the AMM at 13:10.

END OF DEPARTMENTAL UPDATE SECTION OF AMM

***Action Items Attached***

**Chair:** 

**Date: 1<sup>st</sup> October 2014**

### Action Items

<b>Item</b>	<b>Subject</b>	<b>Action</b>	<b>Officer/ Department</b>	<b>Status</b>
1	Research Data	Simon De Lestang to develop a 'Cumulative Catch - Whole Fishery' figure using the data from all zones combined.	Simon De Lestang, DoF	

## Attachment 8

[Web Version](#) | [Update preferences](#) | [Unsubscribe](#)[Forward](#)**Western Rock Lobster Council Inc.**

## 2016 Annual Management Meetings (AMM's) Debrief

5 July 2016

*This message is from John McMath, CEO to all WRLC members and PFAs, please disseminate further as appropriate*

Congratulations to all concerned in making the 2016 Annual Management Meetings a great success. The high level of attendance and participation are appreciated, as is the professional way in which the meetings were convened and hosted by Angus Callander and Megan Cundy of the Industry Consultation Unit (ICU).

The summary below was prepared by Angus Callander.

Kind regards

John McMath

CEO

### **Western Australia Rock Lobster Industry Annual Management Meetings (AMM's) & Western Rock Lobster Council (WRLC) Industry Forum**

The combined WA Rock Lobster Annual Management Meeting (AMM) and Western Rock Lobster Council (WRLC) Industry Engagement meetings were recently held in Fremantle and Geraldton. Both venues were filled to capacity and facilitated by the Industry Consultation Unit (ICU).

The Department research presentations by Dr Simon de Lestang and Dr Jason How indicated the industry is in extremely positive territory, in terms of sustainability and it was refreshing to hear so many attendees acknowledge the valuable work the Department continues to do and has done over many years supporting the industry with first class research.

The Department presentations also included a Management, Fisheye, MSC and Compliance updates and John Harrison provided an overview of WAFIC's activities over the past twelve months. The Department provided pre-meeting background information and the ICU wish to thank Nathan Harrison, Department of Fisheries Western Rock Lobster Manager for arranging these necessary papers.

The afternoon session provided an industry forum for the WRLC Directors to engage with their



constituents and hear their views on TACC settings for 2016/2017 season.

Prior to these discussions the scene was set by the WRLC who provided attendees with an overview of two excellent projects the WRLC has undertaken in engaging Peter Cooke (Agriculture Consultant) and Peter Rogers (former Executive Director of Fisheries ) through their Industry Partnership Arrangement (IPA) with the Fisheries Research & Development Corporation (FRDC).

These projects included initial findings of an Industry Risk Management Analysis by Peter Cooke and an overview from Peter Rogers of the work he has undertaken visiting various fishing ports up and down the coast hearing first hand information from MFL Holders on their views on future TACC setting arrangements.

The WRLC Board and CEO John McMath are to be commended with initiating both these projects, as they represent a significant transitioning of the Rock Lobster Industry from an operational focused entity to a far more strategic and forward thinking organisation, securing the future through best practice industry planning and management.

It is worth mentioning against the backdrop of recent discussions associated with foreign investment and a significant shift in industry ownership away from owner operator to passive and institutionalised investments, the WRLC Board has two current Directors, Peter Bailey and Clay Bass, who are both third generation active fisherman continuing the family tradition in representing the industry in various leadership positions.

The meetings were well attended by major financial institutions. The ANZ Bank must be acknowledged for hosting the very important post meeting fellowship where the day's presentations and discussions were digested and old friendships were renewed.

It is fair to say the introduction of the quota management system has produced it's fair share of challenges for the WA Rock Lobster Industry over the past five years but that all said and done the benefits far outweigh any perceived negatives with the most notable achievement being the industry has regained the pre-eminent position it has held for so many years as the single most valuable wild harvest Fishery in Australasia and to be the first ever fishery to be awarded the internationally recognised Marine Stewardship Certification (MSC).



Annual Management Meeting  
at Fremantle



Annual Management Meeting  
at Fremantle. Kim Colero,  
Chair of WRLC opening  
remarks



Annual Management Meeting  
at Geraldton

**WEST COAST ROCK LOBSTER MANAGED FISHERY  
MANAGEMENT MEETING – DEPARTMENTAL UPDATE**

Tuesday 13<sup>th</sup> June 2017

Fremantle Sailing Club, 151 Marine Terrace, Fremantle

**Meeting Summary**

**1. Welcome & Introduction – Minister for Fisheries, Hon. Dave Kelly**

Mr Angus Callander declared the 2017 Department of Fisheries Annual West Coast Rock Lobster Managed Fishery (WCRLMF) meeting open at 8:56 a.m. He invited Mr Kim Colero, the Chairman of the Western Rock Lobster Council (the Council) to formally welcome attendees. Mr Colero acknowledged Ms Brayford, Director General Department of Fisheries (the Department); Mr Ogg, WAFIC; Mr Lissiman, the Council Deputy Chair and all Council Board Members. Mr Colero noted industry is in an excellent position with great dialogue between the catching sector, the Ministers office and the Department’s research and management teams. Mr Colero welcomed the Minister for Fisheries, the Honourable Dave Kelly to address the meeting.

The Minister acknowledged and thanked the Department of Fisheries and Heather Brayford for her work over several years as the Deputy Director and expressed his appreciation to the Council for the invitation to address the meeting. The Minister noted the Labor Governments’ announcement that from 1 July 2017 the Department of Fisheries will be amalgamated with Department of Agriculture and Food, Department of Regional Development and Regional Development Commissions to form the new Department of Primary Industries and Regional Development.

The Minister emphasised the State Governments plan to diversify the Western Australian economy and stated that the WCRLMF will be an important part of this requirement. He stated the WCRLMF is a well-established industry and noted the Labour Government will endeavour to support industry growth. He noted the need for the fishery to explore new markets and to be vigilant in ensuring industry growth and development for future planning requirements.

The Minister stated the WCRLMF has many achievements to be proud of, such as being the first fishery in the world to attain MSC certification and the subsequent re-certifications since 2000. The Minister noted his support for the continuation Local Access to Lobster Trial to assist in addressing the industry’s social licence to operate and current difficulty for West Australian consumers to access affordable WRL. He noted the Council have developed a strategic plan to address issues such as industry’s reliance on the Chinese market as a sole export partner.

The Minister announced that the Council were successful in their bid to host the 12<sup>th</sup> International Conference and Workshop on Lobster Biology and Management in Perth in 2020 noting it is a great opportunity for preeminent lobster personnel to discuss the growth of the industry and commended the work the Council has done to ensure such an important event is held in WA.

The Minister reiterated that the new Government will continue close collaboration with industry and is committed to diversifying the WA economy with increased exports and employment.

**3. Research Report**

*Stock Assessment Update*

Dr Simon de Lestang and Dr Jason How provided a research report on the West Coast Rock Lobster Managed Fishery (Attachment 1 and 2) which included:

Dr de Lestang reported on the following:

- 2016 Season Summary
- Puerulus
- High Grading
- IBSS
- New Stock Assessment structure
- Biomass Dynamics
- Integrated Model
- Risk Matrix

- The historical catch (kg) and effort (potlifts x 1,000,000) trend since 1975; Dr de Lestang noted the significant decline in catch and effort when the fishery moved to a quota system, he explained catch has steadily increased since 2010 as the TACC incrementally increased, effort has remained low.
- Historical standardised catch rates (standardised for high grading, depth and month) in Zone A, B and C; Dr de Lestang explained standardised catch rates are at a record high noting the progressive increase in biomass and management changes allowing setose and maximum size lobsters to be retained.
- Catch and effort is distributed throughout fishery with several hotspots.
- Catch and effort distribution changes from 2015 to 2016; Dr de Lestang explained that the figures highlight changes in the fishery and noted that there are no extreme changes.
- Fortnightly catch rates in management zones (unstandardised); Dr de Lestang noted in C Zone the catch rates for 2017 have been at or above catch in previous years. Catch rates have been at their highest rates across all zones since 2013 and have increased every year with increases in biomass and 2013/2014 high level puerulus settlement entering fishery.
- Cumulative quota comparison; Dr de Lestang noted the total landed quota for 2017 is ~300 t lower (<10%) than in previous years due to the historical high landings in March/April period which did not occur this year, he suggested this possibly correlates with beach prices.
  - A Zone: >50% of quota landed, below quota landed this time in previous years
  - B Zone: >50% of quota landed, was above quota landed at this time in 2013 and 2014, however catch has recently slowed.
  - C Zone: >50% of quota landed, below quota landed this time in previous years
- Rate of high-grading (from commercial monitoring and CDR/logbook data); Dr de Lestang noted there is a progressive increase in the trend to a 20% level of high grading (of catch). He highlighted the importance of recording high grading in CDRs.
- Undersize standardised catch rates; Dr de Lestang highlighted the significant decrease in catch rates of undersize lobster associated with the increased size of the escape gap on pots. The spike in 2013/14 puerulus are apparent in current undersize catch rates and will likely to enter the fishery in 2017.
- Number of fishing vessels; Dr de Lestang noted the current rate of reduction in vessels is the same as the historic declining trend, the trend is likely to continue. The significant decline in effort coincides with the decrease in vessels.
- Annual puerulus settlement; Dr de Lestang noted there has been a spike in puerulus settlement in 2016/2017 season, this cohort will enter fishery in 3-4 years. The Abrolhos Islands had received the best settlement since early 2000s.
- Latitude of puerulus settlement; Dr de Lestang noted the unusual area of settlement beginning in 2007/08 (following recruitment failure), although the current season settlement fits with old relationship and puerulus have settled just south of Dongara. He explained latitude of settlement is strongly associated with the strength of the Leeuwin Current i.e. puerulus wont travel as far south with a weak Leeuwin current as settle around Dongara. Strong Leeuwin Currents and high sea levels force puerulus further south to Jurien Bay.
- Timing of puerulus settlement; Settlement has been occurring later than average in mid-November, although has recently started to return to historic trends of mid-October. Dr de Lestang noted that it is unknown whether later settlement is more valuable to lobster.
- ENSO watch; currently in a neutral state, however an El Nino event is expected which Dr de Lestang noted is likely to cause weaker settlement.
- Timing of spawning; Dr de Lestang explained late spawning might be a response to water temperature and mating, and subsequently might be a cause of puerulus recruitment failure. He noted timing of spawning is moving back to historical average which should result in historic puerulus settlement trends.
- Independent Egg Production Index; Dr de Lestang noted the apparent spikes appear to be a result of increases in catchability of lobsters. There have been significant declines in egg

production in Lancelin and Dongara. Dr de Lestang noted the poor 2008/09 puerulus settlement are entering the breeding stock population now.

- Examining growth; Dr de Lestang noted the significant increase in lobster biomass (i.e. lobster density) and increase in water temperatures over last 50 years may potentially affect lobster productivity.
- To determine what affects lobster productivity, Dr de Lestang noted the tag-recapture study was used to investigate growth rates against water temperature, lobster density, sex, habitat and time-at-liberty.
- An inverse-logistic growth relationship was identified as the best fit with the actual growth of lobster. Models for release length (slide 25), growth curves (slide 26), weight of lobster and fecundity (slide 28) with several influencing factors overlaid such as sex, density, water temperature and habitat (i.e. islands vs. coast) were presented. Dr de Lestang noted most factors had significant influences:
  - High density had the greatest impact to growth rate over water temperature, it potentially stunts growth;
  - Female lobster growth occurs faster in warmer temperatures and hit maturity earlier, they do not grow as large;
  - Males and females grow at similar rates when small, females halt growth at maturity and invest energy into producing eggs. Males continue growth.
  - Warmer waters reduced the weight of male and female lobster at age 10 but increased fecundity (egg production) of female lobster at age 10 until the population became densely populated in mid-2010s and subsequently decreased fecundity.
- Dr de Lestang outlined and explained several other alternate models:
  - Biomass Dynamics Model (slide 30 & 31) – fits with commercial and IBSS catch rates. Model projects the residual biomass and harvest rates to be maintained at 6500 t
  - 2017 Integrated Model Assessment – integrates all data sources  
**Catch rate projections** for Zones A, B and C with 4 TACC scenarios (slide 33). Model projects a great increase in CPUE for 2020 due to high 2016/17 puerulus settlement. If TACC were increased to 7000 tonnes the model projects catch rates would remain or slightly increase;  
**Egg production projections** for north, central, Abrolhos Islands and south regions with 4 TACC scenarios. Model projects 2017/18 or 2018/19 breeding stock will have increased egg production. In all regions and for all scenarios the egg production is above threshold.
  - Weight of Evidence Risk Matrix – the WCRLMF is considered to be at very low risk to stock sustainability

In summary, Dr de Lestang noted standardised catch rates are at record high, egg production and biomass levels are high and all are expected to continue increasing. Recruitment continues to be anomalous, however is showing signs of returning to historic trends. The stock is healthy and the TACC can be varied with no concerns to sustainability of the stock.

In response to several industry questions Dr de Lestang noted

- Biomass at Big Bank and Leeman increased rapidly however has recently plateaued, potentially because the areas are at carrying capacity (i.e. high density). Dr de Lestang noted this can lead to a fishery with high natural mortality.
- Projections for models are more conservative than last year and highlighted models are refitted with current data annually.
- The Department is looking at tag-recapture study to investigate the high grading value of 20% as industry noted is seems too high. Dr de Lestang highlighted that the statistic is based on log-book data. He noted the Department will investigate the idea of independent monitoring on fishing vessels although noted it is unlikely to be within the budget.

Dr Jason How reported on the following research projects:

- Bait
- Big Bank
- FRDC Projects
  - Completed – Whales, Tagging Project
  - Commencing – Shallow Water Areas, Catchability (Leeman Close Area)
  - In consideration – Oceanographic Array

#### *Bait*

Dr How reported that in the recent MSC re-certification, the only condition was to review the use of blue mackerel (from New Zealand) as a bait source as it constitutes more than 5% of what is landed and is 'likely' to be above the 'soft limit'. Dr How noted the need to ensure bait is sustainably sourced and outlined three options to address the issue with blue mackerel:

1. Modify the 5% MSC criteria
2. Re-assess the Blue Mackerel Fishery (by the New Zealand industry, the Department or an independent contractor)
3. Reduce the use of blue mackerel (by  $\sim\frac{2}{3}$ )

Dr How noted the Department have queried MSC on what the 5% value is based on. Other options will be run predominantly by the Council.

#### *Big Bank*

The conditions to fish under an Exemption in Big Bank were outlined (slide 6, attachment 2). Dr How noted 5 vessels fished within Big Bank in 2017 and landed a total of 37.6 tonnes. Dr How presented the distribution of legal catch, undersized and breeding lobsters.

#### *Completed FRDC Projects*

##### *Whale Entanglements*

Dr How advised the FRDC Whale Entanglements report is being finalised which reports on gear modification effectiveness and spatial and temporal information on whale migrations and new practices incorporated in the Code of Practice. He reported that the gear modifications modelling presents a  $\sim 70\%$  reduction in whale entanglements, identified the 0-9 fathom area as not being associated with whale entanglement and that whales are more susceptible to entanglements during their northern migration.

Dr How reported on the timing of whale migrations noting whales generally reach the coastline during the same time each year (around early September) except in 2006 and 2013 when they began early migration in mid-August when fishers would have still been in fishing, consequently these years had higher entanglement rates.

An animation of tagged whales migrating north and south was presented. Due to industry interest, Dr How noted the Department had overlaid Leeuwin Current movements with whale migration patterns. Results showed whales remained closer inshore during northern migration to avoid the Leeuwin Current and during the southern migration movements were associated with the southward flowing Leeuwin Current. Dr How reported the strength of the Leeuwin current is likely to impact migration and rate of entanglements.

In terms of the Code of Practice, Dr How was pleased to note that industry overall have a far better understanding of appropriate practices when they see an entanglement. To summarise, Dr How reiterated that the current arrangements are appropriate, however the whale population is expected to continue increasing (by  $\sim 10\%$  per annum). Thus, both industry and the Department must be proactive and future-proof to ensure minimal entanglements.

##### *Entanglement Tracking*

Dr How noted the Department have received funding from the Federal Government to develop a low-cost entanglement tracking buoy to assist with disentanglement responses and increase disentanglements. Dr How advised industry to consider supporting this initiative to improve the perception of this industry.

### *Tagging study*

Mr How reported that from 41,190 tags, 2066 have been returned from 336 both recreational and commercial fishers. He noted the results are susceptible to biases including tags losses due to shedding, mortality and especially non-reporting from fishers. He noted that based on aquaria trial results, ventral tags are more robust and cause less impact to the lobster over time, although are not as visible to fishers.

Mr How informed industry on the results from the pot salting project. He noted less than 20% of fishers from each region reported captured lobsters with tags. In summary, Mr How noted that a tag-recapture study can be a robust technique if fishers report tags and other biases are accounted for. Mr How presented ways in which fishers can report tags and the recipients of prizes for most returned tags. It noted that the reporting app should be modified to be able to record when legs are removed during handling.

### *Commencing FRDC Projects*

#### *Low Catch-Rates in Shallow Water Areas*

Mr How advised industry that to identify the cause of low catch rates in shallow waters, a multi-faceted approach will be taken. He noted the industry workshop to identify key areas of concern to industry. On top of the existing puerulus collectors, 40 more collectors have been added in Jurien Bay to monitor puerulus settlement. In addition, juvenile surveys, catch rate studies (including investigation into historical data) and surveys of habitat and food will be undertaken.

#### *Leeman Closure*

Regarding the Leeman closure, Mr How noted the closure had been extended until 14 September 2017, consideration from industry is required as to whether it should remain closed or re-open. The Department have advised Leeman remains closed as it may take up to 10-15 years to see the effect of no fishing pressure to lobster, finfish and habitat. Additionally, it was noted that the removal of closure before the deep-water ecosystem effects are understood may reinstate MSC P2 conditions.

#### *Catchability*

Dr How explained the two clear peaks in CPUE in Leeman closure, Big Bank, Lancelin, Dongara and Jurien Bay (slide 48, attachment 2) noting that fishers were catching a greater proportion of lobsters in these years. He noted the Department are in the process of determining catchability factors by conducting interviews with fishers (including both environmental (water temperature etc.) and biological factors (over-sized males and females etc.)). Dr How explained once the factors have been identified and quantified with aquaria trials, pot seeding and Leeman breeding stock surveys then the Department can adjust and standardise the indices for stock assessments.

### *Considered FRDC project*

There is a Ph.D project in development investigating high frequency arrays to provide a predictive capacity understanding of ocean currents and sea surface temperatures for the next 5 days through an interactive website. This will aid fishers in planning fishing, assist fishers in gaining an understanding of environmental conditions and how environmental factors affect catchability.

## **4. Management and Compliance Report**

Mr Nick Blay and Mr Graeme Baudains provided a Management Report (Attachment 3) on the following:

- Management Arrangements
- Leeman Area
- Big Bank
- Local Lobster Access Trial
- Access Fees
- ARMA
- Harvest Strategy
- TACC

Mr Blay noted:

- The WCRLMF is managed under the South West Bioregions and managed by Mr Nick Blay, Mr Graeme Baudains with Mr Tim Nicholas as the Manager of the South West Bioregions;
- Mr Blay outlined several key Management Plan and FRMR amendments (slide 4 and 5, attachment 3) noting that the FRMR amendments will be finalised prior to the gazettal of the new ARMA Regulations, scheduled for 2019
- The Leeman area remains closed to fishing until 14 September 2017, Mr Blay added that the Department are seeking to retain this closure noting the rationale of implementation approval of a research program with FRDC in conjunction with the Council;
- Big Bank is currently open under Research Exemption for 2017 season. Mr Blay noted the Council's recommendation to the Minister to open Big Bank via a Research Exemption was accepted, with the Research Development Advisory Group undertaking subsequent discussions with the Department to identify the closed area, nomination and data collection requirements (see slide 7, attachment 3);
- The Local Lobster Supply Trial was well received, Mr Blay provided a breakdown of the type of sales undertaken (slide 9, attachment 3) noting a high proportion was sold to restaurants and to public although ~27% was retained for personal use;
- Preliminary data of the total weight landed, the average price per kg in each region, and place of purchase were presented (slide 10 and 11, attachment 3). The Department and Council acknowledged the issues of the trial noting its implementation on short notice and noted several aspects will be improved and outlined the next steps for the trial;
- Access Fees as a percentage of GVP and fees per unit for 2017/2018 season were presented, Mr Blay noted the total does not include the Fisheye component of \$0.51 per unit;

Mr Baudains noted:

- The Aquatic Resource Management Act (ARMA) will replace the current *Fish Resource Management Act 1994*. It has not yet been proclaimed. Mr Baudains explained the structure of potential management pathways including the potential transition to use of an ARMS and Aquatic Resource Use Plan(s) (ARUPs) and noted industry will be consulted during transition to ARMS and ARUPs. In response to an industry query, Mr Baudains confirmed that if there were to be WCRL Aquaculture any broodstock would likely be taken out of commercial allocation of the resource.
- The current Harvest Strategy requires a review as the Maximum Economic Yield (MEY) cannot be calculated any more as the TACC is set significantly below the MEY. Thus, preliminary discussions on removing the MEY in house will be undertaken;
- The Harvest Strategy planned to be implemented for the first quarter of 2018 and the Department will commence consultation in second half of 2017 through the Council. Mr Baudains noted further information is available on Harvest Strategies within the draft guide being developed with the Department and WAFIC titled – 'Harvest Strategies and You';
- Following consultation with industry, the Council's Board submits its TACC recommendation to the Minister for approval. Mr Baudains noted the indicative TACC for 2017/18 and 2018/19 of 6,300 tonnes. The Department have not received any correspondence from the Council regarding TACC.
- The meeting discussed property rights in the new ARMA. Mr Nicholas noted there is a clear intention from the Department that the transition to ARMA will not change the Rock Lobster allocations or existing access rights, it was noted that the intention of ARMA is to strengthen access rights and management under an ARMS will provide that.

## 5. Fisheye Report

Mr Bruno Mezzatesta provided a Fisheye Report (Attachment 4):

Mr Mezzatesta outlined the elements of Fisheye for the WCRLMF and the usage by licence holders associated with each element. He noted the primary method of fishing nominations and catch reporting should be via the CatchER application or Fisheye online services. Bruno also noted:

- An online function has been implemented allowing licence holders to apply for CFLs online;
- The online function for temporary transfers is immediate, there are very few who use the function;
- Processors have not bought into Fisheye yet, there has been a new function added called 'Kraken' in which processors can upload documents in bulk and the Department can have catch information relayed to industry within 48 hours;
- The Department will not support paper forms or IVR nominations as primary reporting mechanism although they will be retained as back up;
- The Department will not provide E1 forms, catch balances are on the online system; and
- The Department will work with industry to ensure the transition is smooth by providing assistance with the registration process, training and help desk support.

In response to several industry questions, Mr Mezzatesta noted:

- A new version is soon to be released allowing licence holders to edit crew lists if needed, it will not remove the crew member from online history; and
- Errors in catch reports will require a statutory decision, an independent analysis will need to be undertaken and if the weight of evidence indicates an error then the Director General will make the executive decision. Licence Holders will be sent a letter regarding the outcome of change.

***The Departmental section of the Management Meeting was formally closed at 12:39.***



**WEST COAST ROCK LOBSTER MANAGED FISHERY  
MANAGEMENT MEETING – DEPARTMENTAL UPDATE**

Thursday 15<sup>th</sup> June 2017

African Reef Hotel, 5 Broadhead Ave, Geraldton

**Meeting Summary**

**1. Welcome & Introduction**

Mr Angus Callander declared the 2017 Department of Fisheries Annual West Coast Rock Lobster Managed Fishery (WCRLMF) meeting open at 8:57 a.m. He invited Mr Kim Colero, the Chairman of the Western Rock Lobster Council (the Council) to address the meeting. Mr Colero acknowledged Mr Tim Nicholas, Manager South West Bioregions; Mr Lissiman, Council Deputy Chair and all Council Board Members. Mr Colero announced that the Council were successful in their bid to hold the International Conference and Workshop on Lobster Biology and Management in Perth in 2020. He also announced the WCRLMF had attained MSC re-certification for a third time and urged industry to embrace MSC certification as it will differentiate their product in the market. Mr Colero noted the industry is in an excellent position with great dialogue between the catching sector, the Ministers office and the Department's research and management teams.

Mr Colero welcomed and thanked Westpac Bank for sponsoring beverages following the meeting.

**2. Research Report**

*Stock Assessment Update*

Dr Simon de Lestang and Dr Jason How provided a research report on the West Coast Rock Lobster Managed Fishery (Attachment 1 and 2) which included:

Dr de Lestang reported on the following:

- 2016 Season Summary
- Puerulus
- High Grading
- IBSS
- New Stock Assessment structure
- Biomass Dynamics
- Integrated Model
- Risk Matrix

**2016 Season Summary**

- The historical catch (kg) and effort (potlifts x 1,000,000) trend since 1975; Dr de Lestang noted the significant decline in catch and effort when the fishery moved to a quota system, he explained catch has steadily increased since 2010 as the TACC incrementally increased, effort has remained low.
- Historical standardised catch rates (standardised for high grading, depth and month) in Zone A, B and C; Dr de Lestang explained standardised catch rates are at a record high noting the progressive increase in biomass and management changes allowing setose and maximum size lobsters to be retained.
- Catch and effort is distributed throughout fishery with several hotspots.
- Catch and effort distribution changes from 2015 to 2016; Dr de Lestang explained these figures highlight changes in the fishery and noted that there are no extreme changes.
- Fortnightly catch rates in management zones (unstandardised); Dr de Lestang noted in C Zone the catch rates for 2017 have been at or above catch in previous years. Catch rates have been at their highest rates across all zones since 2013 and have increased every year with increases in biomass and 2013/2014 high level puerulus settlement entering fishery.
- Cumulative quota comparison; Dr de Lestang noted the total landed quota for 2017 is ~300 t lower (<10%) than in previous years due to the historical high landings in March/April period which did not occur this year, Dr de Lestang suggested that this possibly correlates with beach prices.
  - A Zone: >50% of quota landed, below quota landed this time in previous years
  - B Zone: >50% of quota landed, was above quota landed at this time in 2013 and 2014, however catch has recently slowed.

- C Zone: >50% of quota landed, below quota landed this time in previous years
- Rate of high-grading (from commercial monitoring and CDR/logbook data); Dr de Lestang noted there is a progressive increase in the trend to a 20% level of high grading (of catch). He highlighted the importance of recording high grading in CDRs. He noted the Department will re-analyse mortality estimates of lobster. The meeting discussed the escape gap on pots.
- Undersize standardised catch rates; Dr de Lestang highlighted the significant decrease in catch rates of undersize lobster associated with the increased size of the escape gap on pots. The spike in 2013/14 puerulus are apparent in current undersize catch rates and will likely to enter the fishery in 2017.
- Number of fishing vessels; Dr de Lestang noted the current rate of reduction in vessels is the same as the historic declining trend, the trend is likely to continue. The significant decline in effort coincides with the decrease in vessels.
- Annual puerulus settlement; Dr de Lestang noted there has been a spike in puerulus settlement in 2016/2017 season, this cohort will enter fishery in 3-4 years. The Abrolhos Islands had received the best settlement since early 2000s. Dr de Lestang noted that it is unknown why puerulus rarely settlement on Islands and proposed it may be habitat preference, their physiology or environmental factors.
- Latitude of puerulus settlement; Dr de Lestang noted the unusual area of settlement beginning in 2007/08 (following recruitment failure), although the current season settlement fits with old relationship and puerulus have settled just south of Dongara. He explained latitude of settlement is strongly associated with the strength of the Leeuwin Current i.e. puerulus wont travel as far south with a weak Leeuwin current as settle around Dongara. Strong Leeuwin Currents and high sea levels force puerulus further south to Jurien Bay.
- Timing of puerulus settlement; Settlement has been occurring later than average in mid-November, although has recently started to return to historic trends of mid-October. Dr de Lestang noted that it is unknown whether later settlement is more valuable to lobster.
- ENSO watch; Currently in a neutral state, however an El Nino event is expected which Dr de Lestang noted is likely to cause weaker settlement.
- Timing of spawning; Dr de Lestang explained late spawning might be a response to water temperature and mating, and subsequently might be a cause of puerulus recruitment failure. He noted timing of spawning is moving back to historical average which should result in historic puerulus settlement trends.
- Independent Egg Production Index; Dr de Lestang noted the apparent spikes appear to be a result of increases in catchability of lobsters. There have been significant declines in egg production in Lancelin and Dongara. Dr de Lestang noted the poor 2008/09 puerulus settlement are entering the breeding stock population now.
- Examining growth; Dr de Lestang noted the significant increase in lobster biomass (i.e. lobster density) and increase in water temperatures over last 50 years may potentially affect lobster productivity.
- To determine what affects lobster productivity, Dr de Lestang noted the tag-recapture study was used to investigate growth rates against water temperature, lobster density, sex, habitat and time-at-liberty.
- An inverse-logistic growth relationship was identified as the best fit with the actual growth of lobster. Models for release length (slide 25), growth curves (slide 26), weight of lobster and fecundity (slide 28) with several influencing factors overlaid such as sex, density, water temperature and habitat (i.e. islands vs. coast) were presented. Dr de Lestang noted most factors had significant influences:
  - High density had the greatest impact to growth rate over water temperature, it potentially stunts growth;
  - Female lobster growth occurs faster in warmer temperatures and hit maturity earlier, they do not grow as large;
  - Males and females grow at similar rates when small, females halt growth at maturity and invest energy into producing eggs. Males continue growth.

- Warmer waters reduced the weight of male and female lobster at age 10 but increased fecundity (egg production) of female lobster at age 10 until the population became densely populated in mid-2010s and subsequently decreased fecundity.
- Dr de Lestang outlined and explained several other alternate models:
  - Biomass Dynamics Model (slide 30 & 31) – fits with commercial and IBSS catch rates. Model projects the residual biomass and harvest rates to be maintained at 6500 t
  - 2017 Integrated Model Assessment – integrates all data sources  
**Catch rate projections** for Zones A, B and C with 4 TACC scenarios (slide 33). Model projects a great increase in CPUE for 2020 due to high 2016/17 puerulus settlement. If TACC were increased to 7000 tonnes the model projects catch rates would remain or slightly increase;  
**Egg production projections** for north, central, Abrolhos Islands and south regions with 4 TACC scenarios. Model projects 2017/18 or 2018/19 breeding stock will have increased egg production. In all regions and all scenarios egg production is above threshold.
  - Weight of Evidence Risk Matrix – the WCRLMF is considered to be at very low risk to stock sustainability

In summary, Dr de Lestang noted standardised catch rates are at record high, egg production and biomass levels are high and all are expected to continue increasing. Recruitment continues to be anomalous, however is showing signs of returning to historic trends. The stock is healthy and the TACC can be varied with no concerns to sustainability of the stock.

Dr Jason How reported on the following research projects:

- Bait
- Big Bank
- FRDC Projects
  - Completed – Whales, Tagging Project
  - Commencing – Shallow Water Areas, Catchability (Leeman Close Area)
  - In consideration – Oceanographic Array

#### *Bait*

Dr How reported that in the recent MSC re-certification, the only condition was to review the use of blue mackerel (from New Zealand) as a bait source as it constitutes more than 5% of what is landed and is 'likely' to be above the 'soft limit'. Dr How noted the need to ensure bait is sustainably sourced and outlined three options to address the issue with blue mackerel:

- Modify the 5% MSC criteria
- Re-assess the Blue Mackerel Fishery (by the New Zealand industry, the Department or an independent contractor)
- Reduce the use of blue mackerel (by  $\sim\frac{2}{3}$ )

Dr How noted the Department have queried MSC on what the 5% value is based on. Other options will be run predominantly by the Council.

#### *Big Bank*

The conditions to fish under an Exemption in Big Bank were outlined (slide 6, attachment 2). Dr How noted 5 vessels fished within Big Bank in 2017 and landed a total of 37.6 tonnes. Dr How presented the distribution of legal catch, undersized and breeding lobsters.

#### *Completed FRDC Projects*

##### *Whale Entanglements*

Dr How advised the FRDC Whale Entanglements report is being finalised which reports on gear modification effectiveness and spatial and temporal information on whale migrations and new practices incorporated in the Code of Practice. He reported that the gear modifications modelling presents a  $\sim 70\%$  reduction in whale entanglements, identified the 0-9 fathom area as not being associated with whale entanglement and that whales are more susceptible to entanglements during their northern migration.

Dr How reported on the timing of whale migrations noting whales generally reach the coastline during the same time each year (around early September) except in 2006 and 2013 when they began early migration in mid-August when fishers would have still been in fishing, consequently these years had higher entanglement rates.

An animation of tagged whales migrating north and south was presented. Due to industry interest, Dr How noted the Department had overlaid Leeuwin Current movements with whale migration patterns. Results showed whales remained closer inshore during northern migration to avoid the Leeuwin Current and during the southern migration movements were associated with the southward flowing Leeuwin Current. Dr How reported the strength of the Leeuwin current is likely to impact migration and rate of entanglements.

In terms of the Code of Practice, Dr How was pleased to note that industry overall have a far better understanding of appropriate practices when they see an entanglement. To summarise, Dr How reiterated that the current arrangements are appropriate, however the whale population is expected to continue increasing (by ~10% per annum). Thus, both industry and the Department must be proactive and future-proof to ensure minimal entanglements.

#### *Entanglement Tracking*

Dr How noted the Department have received funding from the Federal Government to develop a low-cost entanglement tracking buoy to assist with disentanglement responses and increase disentanglements. Dr How advised industry to consider supporting this initiative to improve the perception of this industry.

#### *Tagging study*

Mr How reported that from 41,190 tags, 2066 have been returned from 336 both recreational and commercial fishers. He noted the results are susceptible to biases including tags losses due to shedding, mortality and especially non-reporting from fishers. He noted that based on aquaria trial results, ventral tags are more robust and cause less impact to the lobster over time, although are not as visible to fishers.

Mr How informed industry on the results from the pot salting project. He noted less than 20% of fishers from each region reported captured lobsters with tags. In summary, Mr How noted that a tag-recapture study can be a robust technique if fishers report tags and other biases are accounted for. Mr How presented ways in which fishers can report tags and the recipients of prizes for most returned tags. It noted that the reporting app should be modified to be able to record when legs are removed during handling.

#### *Commencing FRDC Projects*

##### *Low Catch-Rates in Shallow Water Areas*

Mr How advised industry that to identify the cause of low catch rates in shallow waters, a multi-faceted approach will be taken. He noted the industry workshop to identify key areas of concern to industry. On top of the existing puerulus collectors, 40 more collectors have been added in Jurien Bay to monitor puerulus settlement. In addition, juvenile surveys, catch rate studies (including investigation into historical data) and surveys of habitat and food will be undertaken.

##### *Leeman Closure*

Regarding the Leeman closure, Mr How noted the closure had been extended until 14 September 2017, consideration from industry is required as to whether it should remain closed or re-open. The Department have advised Leeman remains closed as it may take up to 10-15 years to see the effect of no fishing pressure to lobster, finfish and habitat. Additionally, it was noted that the removal of closure before the deep-water ecosystem effects are understood may reinstate MSC P2 conditions.

##### *Catchability*

Dr How explained the two clear peaks in CPUE in Leeman closure, Big Bank, Lancelin, Dongara and Jurien Bay (slide 48, attachment 2) noting that fishers were catching a greater proportion of lobsters in these years. He noted the Department are in the process of determining catchability

factors by conducting interviews with fishers (including both environmental (water temperature etc.) and biological factors (over-sized males and females etc.)). Dr How explained once the factors have been identified and quantified with aquaria trials, pot seeding and Leeman breeding stock surveys then the Department can adjust and standardise the indices for stock assessments.

#### *Considered FRDC project*

There is a Ph.D project in development investigating high frequency arrays to provide a predictive capacity understanding of ocean currents and sea surface temperatures for the next 5 days through an interactive website. This will aid fishers in planning fishing, assist fishers in gaining an understanding of environmental conditions and how environmental factors affect catchability. In response to industry questions, Dr How noted:

- The data from the mesh pot trial is still being collected as it extremely valuable, though other priorities (whales) have taken precedent. This data is about to be analysed by the Department
- A peer-reviewed paper has been released that suggests the reclassification of whales to not endangered, he noted that whales are still protected (being a migratory species and a cetacean) and re-classification won't affect fishers' need to reduce entanglements
- There is not much industry interest to fish in Big Bank and no one has been denied the exemption to fish there.

### **3. Management and Compliance Report**

Mr Nick Blay and Mr Graeme Baudains provided a Management Report (Attachment 3) on the following:

- Management Arrangements
- Leeman Area
- Big Bank
- Local Lobster Access Trial
- Access Fees
- ARMA
- Harvest Strategy
- TACC

Mr Blay noted:

- The WCRLMF is managed under the South West Bioregions managed by Mr Nick Blay and Mr Graeme Baudains with Mr Tim Nicholas as the Manager of the South West Bioregions;
- Mr Blay outlined several key Management Plan and FRMR amendments (slide 4 and 5, attachment 3) noting that the FRMR amendments will be finalised prior to the WCRLMF transitioning to the Aquatic Resource Management Strategy (ARMS; scheduled to commence on 1 January 2019);
- The Leeman area remains closed to fishing until 14 September 2017, Mr Blay added that the Department are seeking to retain this closure noting the rationale of implementation approval of a research program with FRDC in conjunction with the Council. Industry consultation and an amendment to the Management Plan is required;
- Big Bank is currently open under Research Exemption for 2017 season. Mr Blay noted the Council's recommendation to the Minister to open Big Bank via Research Exemption was accepted, with the Research Development Advisory Group undertaking subsequent discussions with the Department to identify the closed area, nomination and data collection requirements (see slide 7, attachment 3);
- The Local Lobster Supply Trial was well received, Mr Blay provided a breakdown of the type of sales undertaken (slide 8, attachment 3) noting a high proportion was sold to restaurants and to public although ~27% was retained for personal use;
- Preliminary data of the total weight landed, the average price per kg in each region, and place of purchase were presented. The Department clarified the prices were per kg. The Department and Council acknowledged the issues of the trial noting its implementation on short notice and noted several aspects will be improved and outlined the next steps for the trial (slide 10 and 11, attachment 3);

- Access Fees as a percentage of GVP and fees per unit for 2017/2018 season were presented, Mr Blay noted the total does include the Fisheye component of \$0.51 per unit but not the industry levy of \$300 per licence holder;
- It was noted that the access fees presented at the Geraldton meeting were different to the values presented at the Fremantle meeting earlier that week. Mr Blay noted this is a result of updated information being made available just prior to the Geraldton meeting.

Mr Baudains noted:

- The Aquatic Resource Management Act (ARMA) will replace the current *Fish Resource Management Act 1994*. It has not yet been proclaimed. Mr Baudains explained the structure of potential management pathways including the potential transition to use of an ARMS and Aquatic Resource Use Plan(s) (ARUPs) and noted industry will be consulted during transition to ARMS and ARUPs.
- Mr Baudains noted that there will be like for like access and entitlement under the new Act. A WCRL ARMS will establish stronger access rights than the current Management Plan and the ARMA will strengthen property rights. It was noted that Exemptions will transition to the new Act also.
- Mr Baudains provided the meeting with four key documents to read on the Department's website which will provide a good introduction to the ARMA.
- The current Harvest Strategy requires a review as the Maximum Economic Yield (MEY) cannot be calculated any more as the TACC is set significantly below the MEY. Thus, preliminary discussions on removing the MEY in house will be undertaken;
- The Harvest Strategy planned to be implemented for the first quarter of 2018 and the Department will commence consultation in second half of 2017 through the Council. Mr Baudains noted further information is available on Harvest Strategies within draft guide being developed with the Department and WAFIC titled – 'Harvest Strategies and You';
- The meeting discussed the 5% allocation of the resource for the recreational sector. Mr Colero noted the recreational sector is not managed by strict guidelines, therefore the Department must determine exactly how much the recreational sector catches. He noted the Department need to work harder to bring this issue to a close. Mr Tim Nicholas noted in the development of the WCRL ARMS and during consultation with industry on the Harvest Strategy, the Total Allowable Recreation Catch (TARC) must be explicitly set. Mr Nicholas also stated in developing an ARMS for Rock Lobster the Department has no intention of existing changing existing allocations.
- Following consultation with industry, the Council's Board submits its TACC recommendation to the Minister for approval. Mr Baudains noted the indicative TACC for 2017/18 and 2018/19 of 6,300 tonnes. The Department have not received any correspondence from the Council regarding TACC yet.

#### 4. Fisheye Report

Mr Bruno Mezzatesta provided a Fisheye Report (Attachment 4):

Mr Mezzatesta outlined the elements of Fisheye for the WCRLMF and the usage by licence holders associated with each element. He noted the primary method of fishing nominations and catch reporting should be via the CatchER application or Fisheye online services. Bruno also noted:

- An online function has been implemented allowing licence holders to apply for CFLs online;
- The online function for temporary transfers is immediate, there are very few who use the function;
- Processors have not bought into Fisheye yet, there has been a new function added called 'Kraken' in which processors can upload documents in bulk and the Department can have catch information relayed to industry within 48 hours;
- The Department will not support paper forms or IVR nominations as primary reporting mechanism although they will be retained as back up;

- The Department will not provide E1 forms, catch balances are on the online system; and
- The Department will work with industry to ensure the transition is smooth by providing assistance with the registration process, training and help desk support.

In response to several industry questions, Mr Mezzatesta noted:

- There is no intention for the CatchER application to be effective on Android phone, however it can be used on Tablets and IOS phones.
- He will take on notice the fact that the automatic tags ranges function has been removed from the CatchER application.

***The Departmental section of the Management Meeting was formally closed at 12:46.***

# 2018 Management Meetings valuable opportunity to engage with our many members and stakeholders

Posted on 27 July 2018

**Western Rock Lobster (WRL) would like to thank all of our members and stakeholders who attended the 2018 West Coast Rock Lobster Management Meetings (MMs), facilitated by the Industry Consultation Unit (ICU), on 17 July 2018 in Fremantle and 19 July 2018 in Geraldton.**

The meetings were a valuable opportunity to engage with our many members and stakeholders to discuss important issues relevant to the western rock lobster fishery, including science, management, safety and WRL activities.

The day's proceedings were divided into two sessions with the morning program focused on the Department of Primary Industries and Regional Development (DPIRD). This included presentations from Dr Simon de Lestang and Dr Jason How on the latest research and science including the outcomes from the independent peer review of the model and science. Mr Graeme Baudains and Ms Pia Dobson provided information on the latest management issues relevant to the western rock lobster fishery, including the transition to the *Aquatic Resources Management Act* in 2019 (ARMA).



AMSA's Liaison Officer, Mr Chris Battel provided a detailed presentation highlighting that in June 2018 key activities previously provided by state and territory marine safety agencies transferred to a National System administered by AMSA. Unfortunately Mr Battel was unable to attend the Geraldton meeting due to last minute travel disturbances however, his presentation can be found below for further information.

The afternoon program was dedicated to the important work WRL has been undertaking across several areas. WRL Chairman Mr Kim Colero provided an overview of WRL's key achievements over the past 12 months, including how industry levy funds are being spent across a diverse range of activities.



In addition, WRL CEO Matt Taylor described the evolution of the organisational structure of the WRL Council including the work undertaken by the various committees and working groups. Mr Taylor also provided an update on the establishment of a WA based Australasian Institute for Spiny Lobster Research and how it will benefit industry.

The TACC Committee report and recommendations were presented by Dr Peter Rogers followed by an extensive open forum on the TACC setting. Following these discussions, and as part of the consultation process on TACC setting, Members will be receiving a TACC Survey from WRL shortly.

The minutes from the Management Meetings will be distributed to Members in the coming weeks however in the meantime, please click the links below to access the presentations for further information.

WRL would also like to thank the Industry Consultation Unit (ICU) for facilitating and organising these meetings.

## **AM session DPIRD Presentations**

[DPIRD Research and Science presentation – Dr de Lestang and Dr How](#)

[DPIRD Management presentation – Mr Graeme Baudains](#)

[DPIRD ARMA presentation – Ms Pia Dobson](#)

## **PM session WRL and AMSA Presentations**

[WRL Council presentation – Mr Colero and Mr Taylor](#)

[AMSA presentation – Mr Chris Battel](#)

[TACC Committee presentation – Dr Peter Rogers](#)





### Doing Business in WA

1. Regional Offices across Australia can be found using the service outlet map on the AMSA website. Offices in Western Australia are located in Fremantle, Geraldton, Karatha and Port Hedland.
2. 110 nominated Australia Post outlets will conduct proof of identification processes to complete applications for Certificate of Competency. A list of these outlets can also be found on the service outlet map.
3. AMSA Conned is available for general enquiries and can escalate more complex queries to the appropriate technical team member (bars of enquiry).
4. Appointments will need to be made for face-to-face meetings at some regional locations.



**Sustainable**  
The world's first marine  
Stewardship Council-certified  
Sustainable Fishery

ROBINSON  
RANK &  
LEWIS



# 2019 Management Meetings

Posted on 1 November 2019

**Western Rock Lobster (WRL) would like to thank all who attended the 2019 Annual Management Meetings for our rock lobster industry. The meetings were held on 16 October 2019 in Geraldton and 18 October 2019 in Fremantle and both were well attended by industry.**

The meetings provided a valuable opportunity to engage with our many members and stakeholders to discuss important issues relevant to the western rock lobster fishery, including science, management, safety and Western Rock Lobster (WRL) activities.

The day's proceedings were divided into two sessions with the morning program focused on the Department of Primary Industries and Regional Development (DPIRD) science and management updates. The afternoon sessions were dedicated to industry issues and the important work WRL has been undertaking across several areas including resource access security, research and development, whale mitigation and the new Aquatic Resource Management Act.

WRL also utilised the industry forum to seek endorsement to progress a WRL Board approved a package of principle level initiatives around local supply, independent funding of WRL by industry and resource access security.

The proposed principle level initiatives were well supported by both Annual Management Meetings. WRL will continue to update and consult with industry as it now commences the process of introducing the principle level initiatives to government and developing each initiative in more detail.

WRL would also like to thank the Industry Consultation Unit (ICU) for facilitating and organising these meetings.

Please click the links below to access the presentations for further information.

## **AM session DPIRD Presentations**

[DPIRD Research and Science presentation – Dr de Lestang and Dr How](#)

[DPIRD Management presentation – Mr Graeme Baudains](#)

[DBCAs Whale Entanglement Program – John Edwards](#)

## **PM session WRL and AMSA Presentations**

[IPA Powerpoint and Whale Mitigation Slide by CEO Matt Taylor](#)

AMSA Presentation by Chris Battel

ARMA Part 3 Presentation 2019 – WRL Submission on Property Rights by Peter Rogers



## **SAFETY MANAGEMENT SYSTEM**

**FOR A CLASS 3B OPERATION - FISHING R/L**

**Rock Lobster Vessel :**



## INTRODUCTION

### Legislation Framework

The *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* (the Act) provides a single national framework for ensuring the safe operation, design, construction and equipping of domestic commercial vessels (DCVs).

The Act imposes safety obligations on owners and masters of DCVs to 'so far as is reasonably practicable' ensure the safety of their vessels, marine safety equipment that relates to the vessel and the operation of the vessel. DCV owners and masters must implement and maintain safety management systems on their vessels to comply with their statutory safety obligations.

The Australian Maritime Safety Authority (AMSA) as the National Regulator administers the Act and manages a framework for verifying the sufficiency of DCV safety management systems. Documented Safety Management Systems (SMS) are one way in which DCV owners can demonstrate that they comply with the safety management system requirements of the Act.

The Act gives effect to the National Standard for Commercial Vessels (NSCV), which establishes recognised standards for the design, construction, equipping, operation and crewing of DCVs. NSCV Part E identifies the minimum requirements for the safe operation of DCVs.

AMSA as the National Regulator has developed this Safety Management System (SMS) to help DCV owners and operators meet their obligations under NSCV Part E and the Act.

### Introduction to SMS

This SMS is a documented safety system of a Class 3B operation (Commercial Fishing - WA Rock Lobster)

DCVs and their operations within Australia are extremely diverse as are the circumstances and environments in which they operate. This means that safety systems for DCVs must be tailored to suit their unique commercial operations and account for any associated organisational and operational risks. This SMS has been developed to provide DCV owners and masters with a document that:

- May assist them to develop their own operational SMS or equivalent safety system that may be used to demonstrate compliance with the requirements of NSCV Part E and the Act.
- May assist them to review and as necessary revise a safety system they have already established to more closely align it with the requirements of NSCV Part E and the Act.

Wherever possible, DCV owners are encouraged to involve their vessel masters and crews in the development, evaluation and review of the DCV's safety system whether they take the form of a documented SMS or an equivalent approach that satisfies NSCV Part E and their requirements under the Act.



## 1. Vessel information and contact details

VESSEL DETAILS						
<b>Vessel Name:</b>		<b>Unique Identifier No:</b>				
<b>Vessel Type:</b>	Rock Lobster Fishing Vessel	<b>Vessel Length:</b>	Metres			
<b>NSCV Service Category</b>	3B	<b>Vessel Beam</b>	Metres			
		<b>Vessel Draught</b>	Metres			
DESIGN & GENERAL LAYOUT						
<b>Main Engine</b>		<b>Auxiliary</b>	<b>Fire Detection and Protection</b>		<b>Decks</b>	
	kW		Machinery	Space Smothering	Fixed Fire	
OPERATION SUMMARY						
<b>Operating Area</b>	<b>Activity</b>	<b>Voyage Duration</b>	<b>Core Complement</b>			<b>Appropriate Crew</b>
			<b>Master</b>	<b>Engineer</b>	<b>D/Hand</b>	<b>Certified</b>
Offshore Waters	Commercial Rock Lobster Fishing	Approx. hrs/day	<b>Dual Qualified</b> Master / Skipper Grade MED			<b>xDeckhand uncertificated</b>
CONTACT DETAILS						
<b>Vessel Owner:</b>	<b>Name</b>	<b>Address</b>	<b>Telephone</b>	<b>Email or Fax</b>		
<b>Designated Person:</b>						

## 2. Risk Assessment

....., vessel owner and designated person of the fishing vessel ....., has conducted an assessment of risks associated with the vessel ..... and its commercial lobster fishing operations in accordance with the requirements of Part E of the National Standard for Commercial Vessels (NSCV). Forms used by the company to assist with the identification, assessment and management of risks are attached at Appendix A.

All risks recorded in the register have been individually assessed and controlled and this process has been documented. The Risk Assessment includes an assessment of the appropriate crew for the vessel.

The risk assessment will be reviewed at least annually or as required through unscheduled reviews or as a result of any follow up on any hazardous occurrences or non-conformances. Any update to the risk assessment or SMS will be recorded on the revisions page (Appendix B).

### 3. Owners responsibility and authority statement

Vessel Owner	Contact Details

..... is the vessels owner. The owner is responsible for ensuring:

- The supply and maintenance of marine safety equipment onboard
- There is a process of implementation and maintenance of the vessel's SMS
- Maintaining the vessel as fit for purpose
- Ensuring the master conducts instruction, training and supervision of crew/persons onboard the vessel
- Ensuring the vessel stores and associated supplies are sufficient for intended voyages

### 4. Designated Person

..... is the Designated Person responsible for monitoring the safety and pollution prevention of the vessel and ensuring appropriate resources and support are provided to the vessel.

### 5. Master's responsibility and authority statement

..... of ..... - is the Master of the vessel ..... The Master is responsible for implementing and complying with this SMS. **The Master at all times has overarching responsibility and authority for the safety of the vessel and the crew.**

The Master is responsible for the following:

- Command of the vessel and its safe operation.
- Implementing and complying with the SMS including:
- Delivery of crew training and induction
- Taking timely and reasonable measures to eliminate or effectively control any risk that is identified.
- Maintaining the vessel's logbook

### 6. Resources and Personnel

The training and induction program in relation to the vessel ..... is contained in Appendix C.

Mr ....., as Master of the vessel, will provide all training and induction. All training, induction and drills will be recorded in Appendix D - Record of Induction Training and Drills.

The Crew list is located in appendix E which contains the contact details of each crew member.

#### Appropriate Crew

The appropriate crew determination forms part of the Risk Assessment in Appendix A.

## **7. Procedures for on-board operations**

The required procedures for onboard operations are identified as part of the Risk Assessment for the vessel's operations and are contained in Appendix F.

## **8. Emergency Preparedness**

The emergency response plans are identified through the risk assessment and contained in Appendix G.

## **9. Follow up on hazardous occurrences and non-conformances**

Any incident or non-conformance will be noted in the vessel's log. The Master and the Designated Person will investigate each incident and note in Appendix K, any corrective action taken to prevent re-occurrences. The SMS will be updated as appropriate and the correction noted in the SMS revisions pages, Appendices B and L

## **10. Maintenance of vessel and equipment**

The programmed inspection and maintenance for the vessel, its machinery and equipment is contained in Appendix H. All records of daily checks will be noted in the daily log and the inspection and maintenance log contained in Appendix I.

## **11. Log book**

A log book containing sheets in the form specified in Appendix J, shall be kept on board the vessel. The Master will record the following details in the log book:

- Details of all voyages undertaken
- Details of the crew on board for each voyage
- Details of any incident, accident or near miss
- Details of any unusual occurrences
- Any communication messages sent or received
- Details of any training undertaken by crew members
- Details of anything else considered necessary in the circumstances

The logbook shall remain on board the vessel at all times.

All records shall be kept for a minimum of five years.

## **12. Verification, review and evaluation**

The revisions page for this SMS is contained in Appendices B and L. (B is for revisions, L is for annual review)

The Master, in consultation with the Designated Person and the Crew, shall review this SMS annually. The review shall include a review of the risk register, all SMS documentation including all operational and emergency plans and procedures.

The results of the annual review shall also be recorded in the revisions page.

## APPENDIX A - RISK ASESMENT AND MANAGEMENT

### AMSA – IMPORTANT NOTICE

The following guidance material has been prepared to assist vessel owners, masters and crew to better understand the risk assessment and management provisions of NSCV Part E.

The intent is to present express important aspects of the risk management methodology in a user friendly manner based around matters that need to be considered for compliance with Schedule 2 of NSCV Part E and the Act.

Importantly, for any risk assessment and management process to be effective within the context of commercial vessel operations, it must be personalised to the vessel and its unique operation. Vessel owners have a responsibility to implement and maintain a safety management system that ensures that the vessel and the operations of the vessel are, so far as is reasonable practicable, safe. In addition Masters have a duty to implement and comply with a safety management system for the vessel and the operations of the vessel

The vessel owner has used the provisions of AS/NZS ISO 31000:2009 as guidance to establish the following tables to assist with the identification, assessment and control of risks associated with the vessel and its commercial operations.

### LIKELIHOOD

Category	Explanation
1. Remote	Never heard of but not impossible.
2. Rare	May occur in exceptional circumstances.
3. Unlikely	Uncommon, but has been known to occur.
4. Possible	May occur from time to time.
5. Likely	Will occur from time to time
6. Almost certain	It is expected to occur

## CONSEQUENCE

Category	Human injury	Financial cost	Work income and reputation	Environment
1. <b>Insignificant</b>	No injuries	Negligible financial loss	No effect on work	Negligible environmental damage
2. <b>Minor</b>	First aid treatment — minor cuts bruises or bumps	Notable financial loss	Slight production/ achievement disruption	Minor environmental damage
3. <b>Moderate</b>	Disabling injury requires medical treatment	Significant financial loss — rescue of vessel required	Significant production/achievement disruption	Significant environmental damage
4. <b>Major</b>	Fatality	Extensive financial loss	Major disruption to operations	Major environmental damage
5. <b>Catastrophe</b>	Multiple fatalities	Loss of vessel	Operations halted/end of income	Extensive environmental damage

## LIKELIHOOD and CONSEQUENCE – RISK RATING Matriix

Likelihood	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
<b>Almost Certain/frequent</b>	High	High	Extreme	Extreme	Extreme
<b>Likely</b>	Medium	High	High	Extreme	Extreme
<b>Possible</b>	Low	Medium	High	Extreme	Extreme
<b>Unlikely/very remote</b>	Low	Low	Medium	High	Extreme
<b>Rare/improbable</b>	Low	Low	Medium	High	High

## RISK TREATMENT/CONTROL RATING

The vessel owner has applied the following methodology to assist with determinations regarding the sufficiency of its risk treatment and control measures:

Risk Treatment Method	Risk Treatment Rating
1. Eliminate hazard/risk	( E ) Effective
2. Isolate hazard/risk or apply re-engineer or re-design solution	( A ) Adequate
3. Introduce administrative solution – (Staff training, Personal Protective Equipment, Cautionary Signage)	( W ) Weak

## Risk Register & Appropriate Crewing Assessment

Risk	Likelihood (without controls)	Consequence (without controls)	Risk Rating	Controls	Control Effectiveness E = Effective A = Adequate W = Weak	Likelihood	Consequence	Risk Rating	Implement Controls
crew struck by hooks and sinkers caught on pot lines	Possible	Minor	Medium	<ul style="list-style-type: none"> <li>Look for signs that pot has been moved</li> <li>slower winch retrieval in high risk areas</li> <li>Keep a lookout and stand clear of winch</li> <li>slower winch in holiday times</li> </ul>	Unlikely	Rare	Minor	Low..... ..... .....	Yes
Fire	Unlikely	Catastrophic	Extreme	<ul style="list-style-type: none"> <li>Machinery space detection and CO2 smothering system</li> <li>Smoke Alarms</li> <li>Smoking Policy with safe zone and disposal</li> <li>Daily visual checks of fuel/hydraulic pipes</li> <li>Serviced fire fighting equipment</li> <li>Emergency fire fighting and evacuation practiced procedures practised every 3 months</li> </ul>	Effective	Unlikely	Moderate	Medium	Yes
Injury due to unguarded machinery ie winches, belts, pulleys	Possible	Major	High	<ul style="list-style-type: none"> <li>Install machinery guard and hazard signage</li> <li>Only qualified personnel in engine room</li> <li>procedures training and pre sea Induction plus supervision</li> <li>Emergency Shut Off</li> </ul>	Effective	Unlikely	Moderate	Medium	Yes
Injury due to appendage being caught in line when shooting / hauling pots possible death	Possible	Major	Extreme	<ul style="list-style-type: none"> <li>Procedure training documented &amp; competency signed off</li> <li>PPE worn when directed &amp; entanglement risks assessed</li> <li>Guard on equipment installed plus hazard signage</li> <li>slow speed for pot setting</li> <li>Knives carried / readily available at work station</li> </ul>	Adequate	Unlikely	Moderate	Medium	Yes
Person overboard	possible	Catastrophic	Extreme	<ul style="list-style-type: none"> <li>MOB drill practised every 3 months</li> <li>knives readily available</li> <li>A Slimline PFD available for crew to wear</li> <li>Monitoring weather &amp; because of quota, dont fish rough days</li> <li>Boarding access inducted and defined/practised for rescue</li> <li>Man overboard &amp; recovery kit developed and easily accessed</li> </ul>	Adequate	Unlikely	Major	High	Yes

Risk	Likelihood (without controls)	Consequence (without controls)	Risk Rating	Controls	Control Effectiveness E = Effective A = Adequate W = Weak	Likelihood	Consequence	Risk Rating	Implement Controls
Grounding	Unlikely	Major	High	<ul style="list-style-type: none"> <li>Qualified and local knowledge</li> <li>Up to date navigation charts</li> <li>GPS Chart plotter / Echo sounder fitted</li> <li>Appoint watch keeper if skipper unable</li> <li>Fatigue Management strategy because of quota</li> </ul>	Adequate	Rare	Minor	Low	Yes
Medical Emergency Personal Injury	Possible	Moderate	High	<ul style="list-style-type: none"> <li>Qualified First Aider</li> <li>First Aid Kit</li> <li>SOPs</li> <li>Training and Induction and safety drills practiced</li> </ul>	Adequate	unlikely	moderate	Medium	Yes
Vessel Flooding	Possible	Catastrophic	Extreme	<ul style="list-style-type: none"> <li>SOPs and emergency drills practiced regularly</li> <li>Bilge Pumps and whale gusher identified to crew</li> <li>Pre start Vessel Inspections</li> <li>Lifesaving Equipment incl MOB kit and L'raft</li> <li>Surveyed Vessel and regular maintenance</li> </ul>	Adequate	unlikely	Moderate	Medium	Yes
Collision	Possible	Catastrophic	Extreme	<ul style="list-style-type: none"> <li>Experienced Master / watch keeper at all times</li> <li>AIS will be fitted within the near future</li> <li>predominantly daytime operations</li> <li>Operating mainly in low traffic areas</li> <li>Anchor and deck lights, spotlight</li> </ul>	Adequate	Unlikely	Moderate	Medium	Yes
Injury from poisonous or dangerous Species	Possible	Moderate	High	<ul style="list-style-type: none"> <li>SOPs</li> <li>Induction and safety awareness training</li> <li>PPE worn on deck</li> <li>2 crew experienced</li> <li>Experienced supervision of crew by master</li> </ul>	Adequate	Unlikely	Moderate	Medium	Yes





Unexpected weather/sea changes	state	Skipper's local knowledge, access to internet weather, proximity of safe havens in all wind and sea states - significantly reduces these risks
Mechanical Breakdown		In the unlikely event of a mechanical failure the vessel will be anchored or hove to while repairs are undertaken, The deckhand is inducted into the operations of the vessel including safe lookout. The vessel operates in coastal areas with low traffic density and nearby support services or other vessels are within radio contact.
Collision		24 volt anchor and deck lights, low traffic areas
Cray Operations	Fishing	The skipper (navigation) and deckhand (fishing gear) are considered adequate for the fishing operations of the vessel

#### ASSESSMENT

The Skipper and Deckhand are considered adequate for the risks associated with the operational activities of the vessel, however an extra deckhand is optional at times to reduce fatigue caused by increased workloads associated with withdrawing or shifting large amounts of gear, or fishing in deeper waters

#### STEP 4 MARINE INCIDENT RESPONSE CAPABILITY

INCIDENT TYPE		Crew Role	
		Navigation/Response	Response
FIRE	Engine	Skipper	Deckhand 1
	Other		
Collision		Skipper	Deckhand
Grounding		Skipper	Deckhand
Person Overboard		Skipper	Deckhand
Flooding		Skipper	Deckhand
Medical Emergency		Skipper	Deckhand
		Skipper	Deckhand

#### STEP 4 FINAL EVALUATION (STEPS 1-4)

The Dual Certified Skipper/Marine Engine Driver Grade 3 plus a properly inducted deckhand is considered appropriate for the operations of the vessel, however 2 deckhands are carried when needed

#### FINAL APPROPRIATE CREWING ARRANGEMENT

**Skipper: 1 X Skipper Grade**

**Deckhand: 1 x Certified or 1 X Uncertified, 2 deckhands by choice in heavy work periods**



## APPENDIX C - CREW INDUCTION & TRAINING & DRILLS

Any deckhand joining the vessel shall receive training in relation to the following.

Requirement	Item
<b>Vessel Overview</b>	<ul style="list-style-type: none"> <li>SMS - Standard Operating Procedures and Policies</li> <li>General vessel layout incl. restricted areas</li> <li>Location of EPIRB, grab bag, water supply</li> <li>Location and operation of Lifejackets</li> <li>Location and operation of life rings</li> <li>Location and deployment of life raft</li> <li>Location of First Aid Kit</li> <li>Operation of VHF, HF and Sat phone</li> <li>Anchor and/or Winch location and procedure</li> <li>Location of fire extinguishers / fire blanket and operation of auto fire detection and smothering systems</li> <li>Non smoking and smoking permitted areas</li> <li>Engine start up and shut down</li> <li>Genset start up and shut down</li> <li>Electrical System Overview</li> <li>Operation of GPS, MOB button and Autopilot</li> <li>Operation of helm and engine controls</li> <li>Engine room induction</li> <li>Operation of bilge pumping manifolds and whale gusher/lever</li> <li>Operation of deck wash / fire hose</li> <li>Location of fire buckets</li> <li>Location of fuel shutoffs</li> <li>Location of fire flaps</li> <li>Pot winch start up and shut down</li> <li>Standing orders, special requirements, access on and off vessel</li> </ul>
<b>Issue of Equipment (if applicable)</b>	<ul style="list-style-type: none"> <li>Issue and operation of SOLAS &amp; slimline inflatable PFD</li> <li>location and use of MOB kit and specialised 1st aid equipment</li> <li>Issue of recovery equipment, harnesses, specialised equipment</li> <li>Issue of Spotlight / Flares / decklights</li> <li>Use of knives/lanyard locations</li> <li>Issue of wet weather gear / PPE</li> </ul>

Drills shall be conducted as a minimum according to the following schedule:

Item	Frequency
Person overboard	On joining the vessel and three monthly
Fire	As above and Quarterly
Abandon Ship	As above and Quarterly
Flooding	As above and Quarterly





# APPENDIX F - STANDARD OPERATING PROCEDURES & POLICIES

## Standard Operating Procedures

### REFUELLING

#### HAZARDS:

- Fire onboard
- Fuel Spill

#### CONTROL MEASURES:

- Ensure no one in the vicinity is smoking and no other sources of ignition present
- Shut down engines and position 1 crew at the emergency stop button on the supply
- Place bucket under the fuel tank breather and be ready to clean up minor spills
- Ensure vessel is properly/appropriately secured
- All non – essential people should be off the vessel
- Everyone should be aware of the location of onboard fire extinguishers

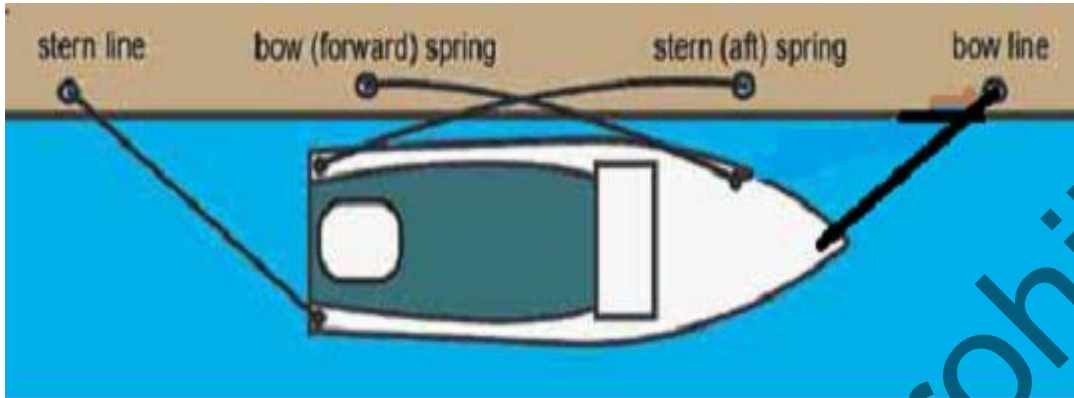
#### SAFE WORK PROCEDURE:

- Ensure vessel securely moored
- Shut down engines, electronics are upstairs so little risk considered
- Prepare deck fittings, PPE worn
- Ready spill material / extinguisher, Check fuel tank breathers clear
- Hold filling nozzle upright as getting hose passed from attendant, carefully place in fuel pipe without spilling fuel and ground nozzle against fuel pipe during filling
- Monitor filling and clean up any spills, ensure filler is upright when handing back
- Re-secure tank caps and deck fittings. Check bilges and tanks for leaks

## Standard Operating Procedures - Cont'd

### BERTHING

Study the following illustration



*Note that the 'forward' spring line is made fast to the forward part of the ship. Spring lines are often mixed up by some deck hands. In addition to the above berthing lines, 'breast lines' may also be used. These travel directly from the bow and stern of the vessel to the wharf at virtually right angles, but must be closely monitored in tidal situations and non floating wharfs.*

How the berth is approached and the order in which berthing lines are to be passed ashore is entirely dependent on the Master, and may change with different circumstances and vessels. However some general rules for the crew member will apply at all times.

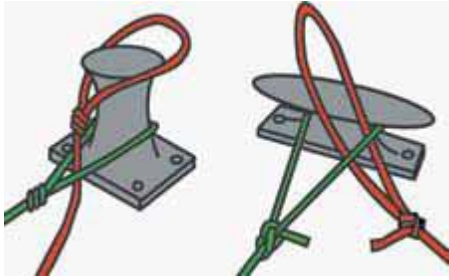
Fenders will always be required. Make sure that these, as well as all berthing lines, are ready well before they are needed. A smooth berthing depends largely on preparation, and any last minute running around just as the vessel is approaching the wharf will not impress the Master, or help him concentrate on the task at hand.

Don't leave the ship! A thoroughly professional crew should be able to berth their vessel without making 'leaps of faith' between the safety of the deck and the hard wharf.

Ideally, someone will be on the wharf to pass a line to, or the competent deckhand can throw a line with sufficient accuracy that the bollard on the wharf can be 'lassoed' with the assistance of a large eye spliced or tied (bowline) in the end. Make sure the working ends of all berthing lines remain on board. If any mooring line drops into the water, retrieve it as soon as possible so that it does not foul the propeller.

Stand out of the way of the Master's line of vision as the wharf is approached! A well-briefed crew will secure the ship in the manner the Master has requested it be done. Unless the Master tells you otherwise, obey his directions rather than those who may be on the wharf.

Be sure to 'Dip the Eye' as illustrated.



This ensures that any line can be removed from the bollard or cleat in any order, and is good etiquette with neighbouring vessels that may also be sharing that bollard, and may want to depart before you.

### **SAFE WORK PROCEDURE:**

- Select areas with fender position/ deploy fenders if required
- Position 2 crew, 1 aft and 1 amidships
- Usually a Springer is secured 1<sup>st</sup>, then bow and stern ropes but your vessel will probably have it's own procedure and order. Make sure you know it!
- On command from the skipper, lines are adjusted and engine is shut down
- LEAVING THE WHARF:
  - The Skipper will have different procedures and orders depending on ther berth and the conditions ie wind, tide etc. Make sure you have discussed this with the skipper beforehand and are aware of the hazards and know the procedure.

### **MOORING:**

#### **HAZARDS:**

- Mutilation of hands and fingers from being caught in the bight of the rope tightening
- Falling off the vessel - being dragged overboard as vessel is drifting with the wind
- Falling off the vessel – leaning out over the bow rail
- Damage to the vessel being pushed onto other moored vessels in high winds or tide

#### **CONTROL MEASURES:**

- Crew to have grapple and rope attached, ready before coming up to mooring
- Skipper and Crew to have agreed as to what ropes are to be secured and in what order
- Do not stretch/lean out over the rail to throw the grapple. Ensure you stay safely behind the rail and use it for stability if necessary
- Never climb out or position yourself outside a rail, no standing or sitting on rails
- Wait until you are in the best position, close to the mooring ropes before throwing



the grapple. Be aware that the vessel may well drift quickly in the wind once taken out of gear

- Wear a Yolk style PFD if you feel the situation is risky ie moderate to high winds or tide, unfamiliar mooring, bad light
- Skipper to choose the best position to have full supervision of the task ie flybridge if applicable

### SAFE WORK PROCEDURE:

- Both deckhands to proceed to bow, pull out the fairlead pin and start directing skipper.
- Skipper slowly approaches the mooring and stops when the deckhand directs so
- 1<sup>st</sup> crew grapples the mooring and passes the grapple and dinghy line to the 2<sup>nd</sup> crew
- 1st crew passes the mooring line through the fairlead and quickly positions the mooring line over the Samson post. Put the fairlead pin back into place
- GETTING OFF THE MOORING:
- 1<sup>st</sup> deckhand approaches the bow and indicates the mooring line position and the skipper engages gear to get the tension off the rope
- the deckhand then removes the mooring line off, secures the dinghy line to the mooring rope and throws away from the vessel

### ANCHORING:

Setting an anchor securely and effectively is of paramount importance to the safety of the ship. Crew should be familiar with the often neglected skill of anchor work, so that any problems are quickly identified and the Master is assisted in every aspect of this important manoeuvre. Like so many aspects of seafaring, the crucial elements are often those that are not seen.

Once an anchor is dropped into the water and rests on the sea bed, it is out of sight but must never be out of mind. Understanding how an anchor works is the foundation of the safety of the ship while the crew sleep or the ship is unmanned.

### ANCHORING TERMINOLOGY

- **Aweigh** As soon as the anchor has broken out of the sea bed, it is 'aweight'.
- **Bitter end.** The very end of the anchor cable, where it is attached to the ship. When at the 'bitter end', there is no more cable to let out.
- **Dragging** When the anchor is not holding the bottom it is 'dragging'.
- **Catenary** The curve formed by the anchor line. Settled at anchor, the rode should have a catenary, and not be a taut or straight line. If it does, the anchor may be dragging, or the rode is too short.
- **Fouled anchor** When the anchor has caught on an obstruction or the rode has tangled around the anchor. The latter can happen if the ship is stationary rather than having slight sternway as the anchor is dropped.
- **Freshen the nip** To prevent chafe on the anchor cable, especially in foul weather, the cable should be let out slightly (veered) regularly so that the cable is not

damaged or chafed at the point where it touches the vessel. The same applies to tow ropes and mooring lines. Alternatively, the line should be 'parcelled' (protected by wrapping it in canvas or rags for example) at the chafe point.

- **Kedging.** Moving a ship by using the anchor. A ship aground may be 'kedged' off a sandbank by laying out an anchor in deeper water, and winching the vessel towards it. In this instance the anchor is referred to as a 'kedge'.
- **Rode** The anchor line between the attachment on the ship (the bitter end), to the anchor itself.
- **Scope** The ratio between the length of cable deployed when the ship rides at anchor, to the depth of water available. A ship anchored in ten metres of water, with 50 metres of cable deployed, has a scope of 5: 1.
- **Short stay** A small scope usually means a 'short stay'. That is, the cable will lead steeply down from the vessel. When weighing anchor, the anchor is at 'short stay' just before it breaks out of the ground.
- **Surge** To let a cable (or any other line) run out without using power. This may apply to mooring lines as well as anchor cables.
- **Veer** To let a cable (or any other line) run out using power, and not let it run free. This may apply to mooring lines as well as anchor cables.
- **Weigh anchor** The process of heaving in cable until the anchor has broken out of the ground. When this point is reached, the anchor is 'aweigh'.

## DROPPING ANCHOR:

### CONTROL MEASURES

- The Master will take many things into account before the order is given to bring the ship to anchor. These factors might include:
  - The state of the tide – under keel clearance must be adequate at all states of the tide, so when anchoring 'at the top of the tide', this is particularly important!
  - The nature and contour of the bottom – does it drop away sharply? Does the chart indicate any smooth rock or coral heads?
  - The current and forecast weather. The ship should never be exposed to a potential 'lee shore'.
  - The presence of hazards, nearby channels and other vessels with regard to the scope required and subsequent swinging room.
- During the manoeuvre, the master must supervise & ensure the personal safety of the deckhand at all times, particularly if the rode is surged rather than veered out.
- Ensure the deckhand is wearing PPE at all times, plus eye protection if using chain
- Ensure adequate communication is established between the Master and crew, determine other crucial matters, such as how much chain to pay out. Ensure the crew are familiar with the markings on the chain. Are they at five metre intervals or ten, or 20M?

- If the vessel is equipped with one, the crew must be familiar with the operation of the anchor windlass. Controls should be clearly marked and the crew trained

**SAFE WORK PROCEDURE:** The skipper shall provide a briefing to the deckhand prior to any anchoring operations, alerting the deckhand to any localised hazards. The deckhand shall check with the skipper of anything unusual or not understood.

- 1<sup>st</sup> deckhand goes to the bow and unhooks the safety pin and block
- Deckhand shall wear safety gloves and other PPE as directed by the master and be careful as to where he is positioned in relation to the anchor rope and/or chain when it begins to feed out
- When advised by the skipper the deckhand shall prepare the anchor for release
- Upon command from skipper, the deckhand will release the anchor and let the rope and/or chain release to required fathoms of depth
- \* As the anchor comes to rest on the bottom, the ship should have slight sternway. If it does not, the rode will probably foul the anchor. The idea is to lay out the rode neatly behind the anchor so it does not catch on the flukes or stock.
- Skipper shall manoeuvre vessel astern as appropriate. When the required scope is reached, tie off the anchor rope or apply the anchor brake and communicate this to the Master. The Master may then 'set' the anchor using slight reverse propulsion. Any raising or dipping of the rode at this stage may indicate that the anchor has not set, but is dragging.
- **Note:** If the vessel has one, anchor windlasses are designed to raise and lower the ground tackle and anchor – not as a strong point to secure the vessel. The strain should be taken off the windlass and transferred to the chain stopper/ safety chain inserted between the links at the top of the Hawser pipe.
- Observe your position with regard to other vessels, landmarks or transits, and always remain vigilant for a dragging anchor.
- Skipper shall activate vessel radar and gps anchor watch alarms

## **WEIGHING ANCHOR:**

### **CONTROL MEASURES:**

- Often, it will be a crewman who 'calls the shots' when weighing anchor. How the rope or chain feeds out is not visible from the helm, so once again, good communication is essential. The Master's actions with throttle and helm will often be dictated by the hand signals received from the crewman on the foredeck.
- Your strength pulling the vessel forward must never be used to bring the ship to short stay without also using the ship's main propulsion. Remember your back is not a strong point! Wherever possible, raise the anchor using the anchor or pot winch and do not try to haul manually as injury will most likely occur sooner or later

Instead, the ship should be motored gently towards or along the lay of the rope or chain as you or the winch brings it aboard.

- The rope and or chain may need coiling or flaking into the anchor locker below as it comes aboard. This prevents it 'mounting up' under the spurling pipe as well as ensuring a 'clean run out' the next time the vessel is anchored.

- Have a well-understood set of signals to communicate with the helmsman. These should include the amount of rope or chain that has come aboard, the direction of the anchor and when you are above the anchor

- \* Ensure that the anchor is properly secured once it is up and home. Do not rely on the anchor winch brake or 1 method to ensure the anchor stays in place!  
An extra securing device should be used ie devils claw or safety chain

#### **SAFE WORK PROCEDURE:**

- Deckhand shall wear PPE as directed by the Master ie gloves, goggles with chain
- Deckhand will approach the bow and indicate the anchor direction. Skipper will engage gear and drive slowly in direction of rope, chain and/or anchor whilst hauling in the anchor chain using the hydraulic or electric winch
- If you dont have an anchor winch, once the master has taken enough length and the weight off the rope, the deckhand should quickly bring the end of the rope back to the winch area on deck and place in the winch ready to start hauling
- The master or Crew will then operate the hydraulic lever to retrieve the anchor rope as required and advise skipper of any issues
- The anchor will be retrieved into the vessel and can be positioned correctly and secured upon instructions from the master
- The deckhand secures the anchor as per instructions from the master

## POT PULLING / RETRIEVAL

### HAZARDS:

- Crew entangled in winch or ropes or grapple rope
- Floats or Recreational fishing gear swinging around the winch
- Winching up too fast or snagged pot making rope “jump out of the winch”
- Rough weather causing risk of man overboard when swinging pot around for landing on tipper
- Crowded and unorganised deck due to too many pots stacked
- Overhead lifting hazard (back injury) when pots are stacked more than 3 high

### Note: Fouled Pot

- A fouled cray pot is a hazardous event.  
The cray pot line under strain has the ability to quickly take charge. Both skipper and deckhand need to remain vigilant and remain well clear of the pot line and floats that are under strain.

### CONTROL MEASURES:

- Establish an agreed system with crew for how pots, ropes, floats are to be stacked and an awareness for possible emergencies ie fishing gear entanglements, snagged pots, winch jamming on, trip not locked etc
- Maintain a reasonable speed for winching pots, giving due consideration to the experience of the crew, the length of working hours and the weather conditions.
- Keep well clear of the immediate winch area whilst winching and keep a lookout over the side
- Skipper to maintain supervision of crew member when winching (if applicable)
- Keep area clear behind the person throwing the grapple

### SAFE WORK PROCEDURE:

- Check the tipper is locked into position  
When the vessel is within easy reach of the floats, throw the grapple, haul the floats aboard and position rope onto the winch. Note: sometimes it is necessary to place the rope between the floats onto the winch to assist retrieval if the vessel is being pushed away by the wind. Position the floats off to one side away from the winch area. Start coiling the rope  
Keep a lookout and slow the rate of retrieval when the pot approaches the tipper.
- If necessary stop winching and position the pot correctly to retrieve onto the tipper, release the trip and slowly slide the pot onto the landing rail aboard the vessel

- Remove the rope from the winch plate, empty the lobster, assist in sorting and grading the catch and slide the pot over to the “skinning position” Remove old bait and debris and re-bait the pot
- Slide the pot down the rail towards the stacking position whenever possible and if applicable and/or use the rolling motion of the boat to assist you in lifting the pot off the rail. Note: check with your skipper as to the best method and grips for lifting pots to avoid back injury. There are several “recommended methods” for lifting and moving pots, it depends upon whether you are lifting the pot from the rail, from the stack or from the deck. It may require modified grips and techniques to safely complete the task – ask your skipper. Consider a back brace to minimise back strain
- Stack the ropes and floats in the agreed method, developed in co-operation with the skipper and crew

## POT SETTING

### HAZARDS:

- Inexperienced crew, arm or torso entanglement - or stepping in/on ropes or floats
- Setting pot before checking that other crew is not ready
- Setting pots at a fast speed above 8 knots
- Rough weather causing higher risk of accidents, near misses and man overboard
- Crowded and unorganised deck due to too many pots or pots stacked too high
- Overhead lifting hazard (back injury) when pots are stacked more than 3 high

### CONTROL MEASURES:

- Establish an agreed system with crew for how pots are to be set and an agreed system for emergencies or entanglements. Skipper AND crew to crosscheck each other and be in communication, providing constant supervision.
- Maintain a reasonable speed for setting pots, giving due consideration to the experience of the crew, their physical ability, the length of working hours and the weather conditions on the day. This is the skippers duty of care responsibility
- Keep feet well clear of ropes when setting pots and position body so as not to be trapped by ropes
- Crew to cross check each other before setting ie position of ropes and feet
- Throw ropes and floats downwind and towards the water when setting
- Keep a knife in a scabbard close to the pot setting location on the vessel

- Don't set the pot unless everyone is safe and ready
- Skipper to maintain close watch of crew member/s when setting the pots

### **SAFE WORK PROCEDURE:**

- If the pot is on the deck, with a straight back, lift the end of pot by the bridle/ends so it is resting against your thighs. If the pot is on the stack, it may be necessary to hold the pot close to your body with a different grip position first and then position onto the rail or back onto the deck. Check with your skipper or watch a more experienced crew as to the best lifting method to protect you from back injury. Consider a back brace!
- Lean back and swing the pot onto the rail, using the rolling motion of the vessel to assist you and take away some of the weight. Again, watch the experienced crew
- Place the bridle over the top of the pot and feed some rope out over the side to give you some time before the main rope coil starts feeding out when you release the pot over the side.  
Check your feet for possible entanglement and then check your body position to
- ensure you are in the correct position so as to not be possibly trapped against the rail by the ropes
- Cross check the other crew (if applicable) or then check where your coil/floats are
- When the order is given, slide the pot over the rail and into the water
- Quickly throw the ropes and then throw the floats, being sure not to entangle your hands in the coil. Do not throw them high up into the wind in case they are blown back and entangle you. Try to fan out the ropes as you throw them, or pick up smaller sections of rope in larger coils to ensure against the rope becoming tangled as the pot sinks. A tangled rope mean a lost pot and no product to be paid on!

## APPENDIX F Cont'd - POLICIES

### Smoking

Smoking is only permitted on the open deck in a secure location that has been agreed. The smoker should have no risk of Man Overboard. All butts are placed in a wet metal bucket and disposed of in the garbage onshore. No smoking is permitted in any enclosed spaces of the vessel.

### Alcohol

Crew members should not be under the influence of alcohol during operational hours and must at all-time carry out their duties and responsibilities in a safe manner. Authorisation for individual crew members to bring alcohol on board for personal consumption is at the discretion of the Skipper. At no time will alcohol be tolerated during fishing operations or when a person is required for other duties such as watch keeping, deck work etc.

Alcohol is to be consumed on board only when at anchor or alongside or when all work has been completed. Boarding or disembarking the vessel is not to be attempted while under the influence of alcohol and crew do so at their own risk. Alcohol abuse can lead to dangerous situations for the person, the crew and the vessel. Abuse may contribute to reduced productivity and ill feeling amongst the crew. Long term abuse will lead to personal health problems. Continued alcohol abuse will be considered adequate ground for contract termination

### Drugs

Commitment to ensuring the health, safety and welfare of all crew members and to prevent and reduce harm associated with people being impaired by drugs or alcohol at work. Illegal drugs of any kind (marijuana is an illegal drug) are absolutely prohibited on board. Crew members found possessing or using illegal drugs on or around the vessel will have their contact terminated without compensation.

The objectives of this policy are to:

- \*Provide clear and documented guidelines regarding the stance on drug issues on vessels
- \*Maintain the good welfare of crew
- \*Ensure a safe working environment

It is the Skipper's responsibility to:

- \*Ensure this policy is enforced on a day to day basis
- \*Direct any crew reasonably suspected of being under the influence of drugs away from the operational work areas
- \* Counsel crew who are found to be in breach of this policy

It is the crew member or passengers responsibility to comply with this policy

Drug Abuse: Crew members must not be under the influence of drugs when onboard and must at all-time carry out their duties and responsibilities in a safe manner. The use of drugs other than prescribed drugs listed and contained in the First Aid Kit is prohibited on board. Use or possession of such drugs is grounds for termination of contract.

The skipper shall monitor the issue and use of prescription drugs such as pain killers from the First Aid Kit. Crew member are to advise the Skipper if they bring prescribed medication on board. Boarding or disembarking the vessel is not to be attempted while under the influence of drugs and crew or passengers do so at their own risk.



## Personal Protective Equipment

Personal Protective Equipment can include PFD's, freezer gear and deck gear (gumboots, aprons, hats, sunglasses and gloves). For some specialist tasks and positions, other personal protective equipment may be required such as hearing protection (for engine rooms) and safety glasses (for cutting and grinding).

Personal protective equipment is issued for the safety of crew members, and is assigned for appropriate tasks or when specified in a Material Safety Data Sheet (MSDS) or prevailing conditions, or for the handling of chemicals. It is the responsibility of crew members to wear personal protective equipment as directed by the skipper. It is the crew member's responsibility to wear the appropriate personal protective equipment for the task if directed to do so. Refusal to wear safety gear may be grounds for dismissal.

It is the responsibility of crew members to maintain gear allocated to them.

## Entering the Engine Room

The engine room is a confined space, with multiple hazards, and crew are not permitted to enter this room, unless accompanied by the Engineer or Master. No smoking is permitted in the engine room. The hatch to the engine room must be closed at all times while vessel is at sea or underway.

## Entering Confined Spaces

Confined spaces on board include the engine room, freezers, tiller flat, chain locker, water tanks, oil tanks, double bottoms, bilges and any space with restricted access that is not considered a normal work place.

Never enter a confined space alone or without telling a responsible person. Ensure the area is "gas free" and sufficient oxygen is present. Supplied air systems may be required if sufficient oxygen levels cannot be maintained. Make sure there is a look out or sentry to observe you or monitor your activity in a confined space. Do not enter a confined space without adequate protective clothing. Entry to a freezer requires gloves, boots and freezer suit.

The entry hatch or opening to a confined space must be kept open when a person is inside. The freezer plug must be placed to one side away from the opening and the hatch left open. Do not immediately enter confined space to rescue an injured or unconscious crew. Raise the alarm immediately, advise another person and conduct a prepared and practiced emergency rescue drill, taking the necessary precautions to make sure you do not become the next affected victim.

## Garbage Disposal and Pollution

Discharge of garbage into the sea is prohibited. Garbage means all kinds of food wastes, domestic wastes and operational wastes including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse.

All garbage is to be stowed onboard for eventual disposal onshore

## Electrical Power Tools on Vessels

The purpose of this Procedure is to highlight the dangers of using 240-volt electric power tools on vessels where exposure to sea water is a risk factor.

Actions required:

1. Conduct a risk assessment to identify:

If any equipment to be used is designed to be used in the intended work environment. Possible safety hazards associated with the equipment and significance of the risk. What measures can be implemented to control or eliminate the risks. All equipment must have a current test and tag certification. Portable RCD must be used when operating any electrical equipment.

2. Portable electrical equipment must either be specifically designed for use in a marine environment or used in locations where they are not exposed to contact with water.
3. Portable mains powered electrical tools and extension leads must be kept away from water.
4. A residual current device (RCD) must protect all circuits used to supply portable electrical equipment.
5. Appropriate personnel protective equipment (PPE) must be worn at all times.

WHEN NOT TO USE ELECTRICAL TOOLS ON DECK:

Do not use electrical power tools if there is any water on the deck or likely to be any water across the deck. Check with skipper if there is likely to be any change in course and conditions. If the item can't be removed from a wet area some cutting alternatives are: wire cutters, oxy/acetylene cutting or bolt cutters

## Hazardous Substances

Prior to purchasing, all chemicals are assessed and Hazardous Substances are not introduced onto the vessel unless there is no practical alternative.

All Hazardous Substances on the vessel are appropriately labelled.

Material Safety Data Sheets are obtained and available onboard for all hazardous substances on the vessel.

Appropriate provision is made for emergency and first aid situations

Any personal protective equipment needed to secure health and safety in relation to the use of Hazardous Substances is provided to crew or available on board the vessel.

All accidents, incidents and near misses involving Hazardous Substances are reported, recorded, investigated, and appropriate corrective measures are taken.

Waste of Hazardous Substances and associated containers are disposed of safely and responsibly. Training is given before using any hazardous substance provided is used.

## Reporting Injuries and Accidents

The vessel owner/s are committed to ensuring the health, safety and welfare of all employees and to prevent and reduce harm associated with fishing operations. All accidents on board or ashore accidents that affect a crew member or operations and activities of the vessel shall be investigated and reported if necessary

Details of personal injury or illness or a mechanical defect or incident shall be investigated by the Skipper and/or the Health and Safety representative and recorded on an Accident / Incident Form. If the personal accident or illness requires time off duty, the appropriate Accident and Insurance forms shall be completed and forwarded in accordance with instruction on the forms.

In the event of serious incidents or accidents, the Skipper could arrange to have photographs taken of any key evidence that might be needed during an investigation. Also, obtain the names of all witnesses and/or crew that were on site and may have important facts relating to the accident/incident.

It is preferable to make arrangements to interview all witnesses and/or crew who have information (including the injured person if possible) as soon as possible. This should be submitted to the appropriate authorities and possibly, depending on the severity of the incident or accident, the National Regulators (AMSA and/or WorkSafe, Western Australia ) as an Incident Report.

A Skipper must notify the regulator (WorkSafe WA) as soon as they become aware of a death, serious injury or illness or dangerous incident that arises out of the conduct of the business or undertaking.

## Issue Resolution: Unsafe Work

Issue resolution procedures apply under the WHS Act if a matter about work health and safety arises at a workplace or from the conduct of a business or undertaking and the matter is not resolved after discussions between parties.

If the matter is not resolved, the relevant parties must make reasonable efforts to achieve a timely, final and effective resolution of the issue in accordance with an agreed procedure or the default procedure set out in the WHS Regulations.

A worker's representative i.e. a Health and Safety representative may enter the workplace for the purpose of attending discussions with a view to resolving the issue.

If the issue remains unresolved, any party may ask the national or state regulator to appoint an official inspector or investigator to attend the workplace to assist in resolving the issue.

While this process is underway workers may still exercise their right to cease unsafe work and Health and Safety representatives who have completed the approved training may continue to exercise their powers to issue a PIN or direct that unsafe work cease.

Inspectors will not undertake conciliation or mediation to resolve the issue but may exercise any of their compliance powers under the WHS Act to resolve any underlying work health or safety issues.

## Fatigue Management

There are many definitions of fatigue. Fatigue can be defined as the increasing difficulty in performing mental and physical activities as a consequence of inadequate restorative sleep. Fatigue leads to poor judgement, poor performance on skilled tasks and slower reaction times. Fatigue stops you appreciating how serious a situation has become. It is harder to undertake complex tasks when fatigued. Poor decision-making as a result of fatigue leads to accidents.

Fatigue management is a shared responsibility and should be managed by both individual crew members and the Skipper. The Master should ensure that all crew members have:

- \* a reasonable workload
- \* reasonable hours of work; and
- \* reasonable rest periods during working hours, having special regard to work which is strenuous, hazardous or monotonous.

Given the introduction of Quota in the industry and the provision of more days off work, crew members should ensure that:

- \* When opportunities for rest are made available they are used for rest;
- \* Social activities are planned to ensure sufficient sleep opportunity; and
- \* Alcohol is consumed in moderation, as excessive alcohol can disturb sleep.

## Swimming or Entering the Water from the Vessel

It is discouraged to enter the water as part of work activity or for recreational purposes, because of the risk of injury from marine organisms.

Definitely under no circumstances are crew permitted to enter the water whilst the main engine is running, due to risk of injury from propellers.

If a crew member enters the water (accidental or intentionally) the Skipper must be notified and a look out must be maintained immediately.

If crew members decide to enter the water from the vessel to swim, they are doing this at their own risk, and are encouraged to take precautions against marine organism stings and bites.

## Environmental Protection

The policy is to provide environmentally safe working conditions and to maintain safe and pollution-free operating practices that comply with national regulations and relevant standards, codes and guidelines.

All crew members are expected to comply with environmental safety and pollution prevention regulations and procedures at all times and to take the necessary precautions in the interests of human life, property and the marine environment.

## APPENDIX G – EMERGENCY PLANS & PROCEDURES

### PERSON OVERBOARD PROCEDURE

#### Crew Member on-board

- If caught in pot line, immediately assess the situation and render appropriate assistance as practiced
- If person is free immediately:
  - ❖ Throw life ring or MOB Lifesaver
  - ❖ Hold MOB button on plotter 3 seconds
  - ❖ Manoeuvre vessel to keep person in sight
  - ❖ Deploy boarding ladder if necessary
  - ❖ Recover person from water at rescue zone
  - ❖ Render first aid as appropriate
- If person out of sight:
  - ❖ Manoeuvre vessel in search pattern taking into account wind /tide
  - ❖ Issue PAN PAN on VHF/HF
  - ❖ Consider use of EPIRB

#### Person Overboard

- Yell “MAN OVERBOARD”
- If caught in line use knife to cut free
- If free inflate PFD
- Release sea dye marker
- Continue to Yell – use whistle
- Wave your arms and look for floats to swim to
- Activate PLB if available

### FIRE PROCEDURE

#### Engine Room

- Yell FIRE,
- Assess fire state
- Deactivate engine room equipment/fans
- Consider use of extinguisher in wheelhouse
- Activate deck wash / fire pump / use fire hose - if applicable in first instance
- Activate bilge pumps
- Close fire flaps, close emergency fuel shutoffs
- Re-assess the situation
- Notify any vessels in vicinity
- 
- Activate Fixed Fire Smothering System if not already activated
- Monitor Fire and situation
- Issue PAN PAN on VHF/HF or mobile / SAT phone
- Escalate to Abandon Ship if necessary

#### Galley

- Yell “FIRE”
- Consider use of portable extinguisher / fire blanket in wheelhouse
- Turn off gas / power / appliances

- Escalate as necessary to supplementary fire extinguishers / deck wash - fire hose
- Escalate to abandon ship if necessary

#### **Accommodation**

- Yell FIRE and account for all crew
- Consider use of portable extinguisher in accommodation / wheelhouse
- Shut down aux /gen set
- Isolate any appliances
- Escalate as necessary to supplementary fire extinguishers / deck wash - fire hose
- Escalate to abandon ship if necessary

#### **MEDICAL EMERGENCY – PERSONAL INJURY**

- Render first aid
- Use First Aid Kit as appropriate
- Escalate as appropriate
- Issue PAN PAN on VHF / HF / Sat Phone
- Use Sat Phone to call for assistance seek advice as appropriate
- Provide vessel location from GPS plotter.
- Keep casualty stable, comfortable and out of the elements

#### **HEAVY WEATHER / FLOODING**

- Don lifejackets and warm clothing
- Consider weather safe for pots to remain on deck
- If safe secure pots
- Secure rope bins and all lines
- Collect deck mats and securely lash
- Check anchor secure
- Check bilge / fire pumps
- Open fire pump suction to bilge
- Check scuppers clear
- Plot appropriate course to shelter / safest route
- Consider use of sea anchor
- Consider use of oil / hessian bag
- Activate fire pump suction to bilge
- Ready emergency grab bag
- Check life raft
- Use VHF/HF/ Phone to update Coast Radio with situation, current location and course details

#### **GROUNDING**

- Account for crew, administer necessary 1st aid
- Check bilges for signs of flooding
- Activate bilge pumps if required
- Open fire pump suction to bilge and activate pump
- Consider further damage control and repairs if necessary
- Escalate as appropriate after assessing situation over time
- Issue PAN PAN on VHF / HF / Sat Phone
- Escalate to Abandon Ship if necessary

## COLLISION

- Account for crew
- Check for injuries
- Render first aid as appropriate
- Check bilges for signs of flooding
- Activate bilge pumps if required
- Open fire pump suction to bilge and activate pump
- Consider further damage control if necessary
- Escalate as appropriate
- Issue PAN PAN on VHF / HF / Sat Phone
- Escalate to Abandon Ship if necessary

## ABANDON SHIP

- Account for all crew
- Don lifejackets and warm clothing
- Secure emergency grab bag (EPIRB, Portable VHF, knife, flares, rescue mirror, sea dye marker, compass, portable gps, EXTRA Water, food, first aid)
- Issue Mayday on VHF / HF / Activate DSC
- Secure and activate EPIRB
- Launch Life Raft
- Abandon ship to life raft and cut free of vessel
- Check EPIRB activation, induct crew, preparation for rescue

**APPENDIX H – CHECKS, INSPECTIONS & MAINTENANCE**

<b>VESSEL PRE-DEPARTURE / DAILY CHECKS</b>				
	DESCRIPTION	STATUS		COMMENTS
		SAT	UNSAT	
<b>NAVIGATION and COMMUNICATION EQUIPMENT</b>	Radar			
	GPS			
	AIS			
	Compass			
	Helm			
	VHF Radio			
	HF Radio			
	Sat Phone			
	Hailer			
	Navigation Lights			
	Autopilot			
	Horn			
<b>WARNINGS / ALARMS</b>	Fire Detection			
	Main Engine Oil Pressure			
	Gear Box Oil Pressure			
	Main Engine Temperature			
	Alternator Charge			
	Aux Oil Pressure			
	Aux Temp			
	Gas detector alarm test			
<b>PROPULSION MACHINERY and ASSOCIATED SYSTEMS</b>	Main Engine Lube Oil			
	Aux Lube Oil			
	Gear Box Lube Oil			
	Cooling Header Tanks			
	Main and aux belts			
	Fuel Tanks			
	Jet system clear of debris			
	Fuel Lines and Emergency Shut Off Valves, breathers			
	Exhaust			
	Gearbox Coupling			
	Shaft Seal			



<b>PROPULSION MACHINERY and ASSOCIATED SYSTEMS (cont)</b>	<b>Keel cooling hoses</b>			
	<b>Batteries (Main, Emergency and Radio)</b>			
	<b>Hydraulic Header Tank</b>			
<b>STEERING GEAR</b>	<b>Hydraulic Lines and Fittings</b>			
	<b>Steering Rams and seals</b>			
	<b>Emergency Steering</b>			
	<b>Rudder Stock Bearings</b>			
<b>BILGE AND FIRE PUMPS</b>	<b>Bilge Pumps</b>			
	<b>Bilge High Water Alarm</b>			
	<b>Bilge Suction Valves</b>			
	<b>Bilge Strainers</b>			
	<b>Main Engine Driven Fire/Bilge Pump</b>			
	<b>Fire Pump / Deck Wash Sea Water Suction Valve</b>			

Unauthorised use prohibited

**PLANNED INSPECTION & MAINTENANCE 2014**

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
<b>Safety Equipment</b>								
Lifejackets stowage & signage			✓					
Lifejacket lights			✓					
Lifebuoy Lights & buoyant line			✓					
Life Raft & Hydrostatic release						✓	Hydrostatic release due ?????	
Magnetic Compass	✓							
Charts				✓			Monthly Check NTM	
AIDS (Radar, GPS, AIS)	✓							
Torches			✓					
Barometer		✓						
Clock		✓						
First Aid Kit			✓					
Navigation Lights	✓							
Radios/ Aerials	✓		✓				Daily HF/VHF check, monthly radio check HF transmit, monthly check of aerials	
Radio Battery		✓					Weekly check of terminals, battery and electrolyte	

Unauthorized Use Prohibited

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
Hailer								
Horn			✓					
Day Shapes								
Code Flags				✓				
Pyrotechnics & container				✓			Weekly check of container, Flares due to be replaced as per expiry date	
EPIRB			✓				Monthly Check, battery to be replaced as per manufacturer expiry ?????	
<b>Anchoring &amp; mooring</b>								
Anchor, Chain and Shackles		✓						
Windlass inspect and grease								
Devils Claw			✓				Inspect grease monthly	
Bollards/Cleats			✓					
Sea anchor								
Mooring lines / fenders	✓							
<b>Machinery</b>								
Main Engine Oil & Filters (every 250 hours)							As per manufacturer	

Unauthorized Use Prohibited

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
Main engine and Aux belts	✓					✓	Replace annually	
Fuel Tanks - Primary Filters (every 200 hours)	✓		✓				Visual daily, replace filters every 200 hours, drain water from tanks regularly. Fuel additive regularly, inspection as per survey	
Engine Gearbox linkages	✓		✓				Daily visual, monthly inspection and grease	
Hydraulic lines and fittings	✓		✓				Daily visual, monthly thorough inspection, annual Denso tape	
Sea suction valve and piping	✓						Daily Check	
Engine bilge inspection / clean	✓						Daily inspection and replace oil sorbent sheets as required	
Engine guards	✓		✓				Daily visual, monthly inspection	
Exhaust lagging	✓						Daily visual, replaced maintained as required	
<b>Fuel System</b>								
Fuel tank filler/vents		✓					Weekly check	
Fuel lines	✓		✓				Daily visual, monthly inspection, annual Denso tape of fittings	
Remote fuel shut offs			✓				Monthly check and spray	

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
Fuel tank inspection (external)	✓						Daily visual, internal as per survey	
<b>Bilge System</b>								
Bilge pumps manual and power	✓	✓					Daily inspection, weekly test of operation and high water alarm	
Bilge piping		✓					Daily visual monthly inspection	
Bilge suction manifold valves			✓				Monthly inspection	
Non return valves					✓		6 monthly check	
<b>Stern Gear/Hull</b>								
Shaft Coupling and stern gland		✓					Stern tube re-packed annually	
Shaft Bearing						✓	Inspected tested annually	
Shaft						✓	Inspected annually, tested as per survey requirements	
Propeller						✓	Polished/inspected annually	
Rudder						✓	2 tear drop anodes replaced annually	
Rudder stock & bearings, pintles and bearing						✓	Daily test/inspection, annual inspection	
Emergency Steering						✓	Emergency tiller checked annually	
Anodes Hull						✓	Block anodes replaced annually. Tear drop anodes replaced on keel cooling and sea suction strainer	

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
Antifoul – hull protection						✓	Re-painted Annually	
Keel Cooling						✓	Cleaned & Inspected annually	
Sea suction valves	✓					✓	Daily visual, annual check of external/clean antifoul ext strainers	
Planking								
Hull / Bulwarks / rails		✓					Weekly inspection, annual re-painting of hull topsides and bulwarks	
Deck	✓					✓	Cleaned daily – annual re-pain non skid	
<b>Fire Protection</b>								
Fixed fire fighting system	✓					✓	Daily test, serviced annually	
Portable fire extinguishers (visual pressure gauge daily, shake dry chemical monthly, service all annually)		✓	✓			✓	(Visual pressure gauge daily, shake dry chem monthly, service annually)	
Fire pump and piping, hose and nozzle	✓						Tested daily as deck wash	
Smoke alarms		✓					Weekly test, battery replaced annually or as needed	

ITEM	Daily	Weekly	Monthly	Quarterly	6 month	Annual	Comments	Date / Initials
Fire Buckets			✓				Checked monthly	
Engine room fire flaps			✓				Checked monthly	
<b>Electrical System</b>								
Wiring	✓			✓			Daily general visual, annual service as required, inspection of wiring	
Switches						✓	Daily general visual, annual thorough inspection	
Distribution boards						✓	Daily general visual, annual thorough inspection	
Inverter	✓					✓	Daily Test – Annual check	
Lighting			✓				Monthly test of all lights	
Batteries / boxes, terminals, electrolyte levels, and cables	✓					✓	Daily visual, annual internal inspection	
Shore power						✓	Daily and annual	
RCD test		✓					Tested weekly	
240 V charger (test)			✓					
VHF Radio	✓							
Satellite Navigation/GPS	✓							

unauthorised use prohibited









**INCIDENT AND NON CONFORMANCE REPORT - Appendix K continued**

TIME		DATE			LOCATION		INCIDENT REPORT No	
<b>OCCURRENCE TYPE</b>					<b>CONTRIBUTING FACTORS</b>			
Complaint	Non Conformance	Personal Injury	Property Damage	Other	Unsafe Act	Training	Policy or Procedure	Other
<b>Details of the Incident</b>					<b>Details of any contributing factors</b>			
					1.			
					2.			
					3.			
					4.			
<b>CONSEQUENCE</b>								
<b>Personal Injury</b>			<b>Property Damage</b>			<b>Other</b>		
<b>INTERIM CORRECTIVE ACTION</b>								
<b>Type</b>				<b>Completion Date</b>	<b>Responsible Person</b>	<b>Verification of Effectiveness</b>		
1.								<b>DATE</b>
2.								
3.								
4.								

**APPENDIX L - SMS VERIFICATION, ANNUAL REVIEW AND EVALUATION**

SMS REVIEW, EVALUATION AND VERIFICATION							
REVIEW TYPE		DATE	REVIEW SCOPE		PARTIAL REVIEW TRIGGER		
Annual	Unscheduled		Full System	Partial Review	Incident Hazardous Occurrence	Non-Conformance	Improvement Opportunity
REVIEW DETAILS							
SMS Section		Issues		Actions		Change Ref No	
1	Vessel & Contact Details						
2	Risk Assessment						
3	Owners Responsibility and Authority Statement						
4	Designated Persons						
5	Master's Responsibility and Authority Statement						
6	Resources and Personnel						
7	Procedures for On-board Operations						
8	Emergency Preparedness						
9	Follow-up on Hazardous Occurrences and Non-Conformance						
10	Maintenance of Vessel and Equipment						
11	Documentation						
12	Verification, Review and Evaluation						



## IMPORTANT CREW OR PASSENGER SAFETY INFORMATION



### HOW TO DON YOUR LIFE JACKET

- 1.**  
Place the life jacket  
above your head



- 2.**  
Lower the lifejacket so that your  
head passes through the  
opening and rests on your  
shoulders



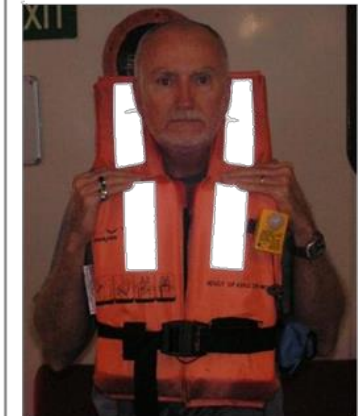
- 3.**  
Connect the straps on  
either side of the life jacket  
immediately in front of you



- 4.**  
Note that your lifejacket is  
fitted with a whistle and light



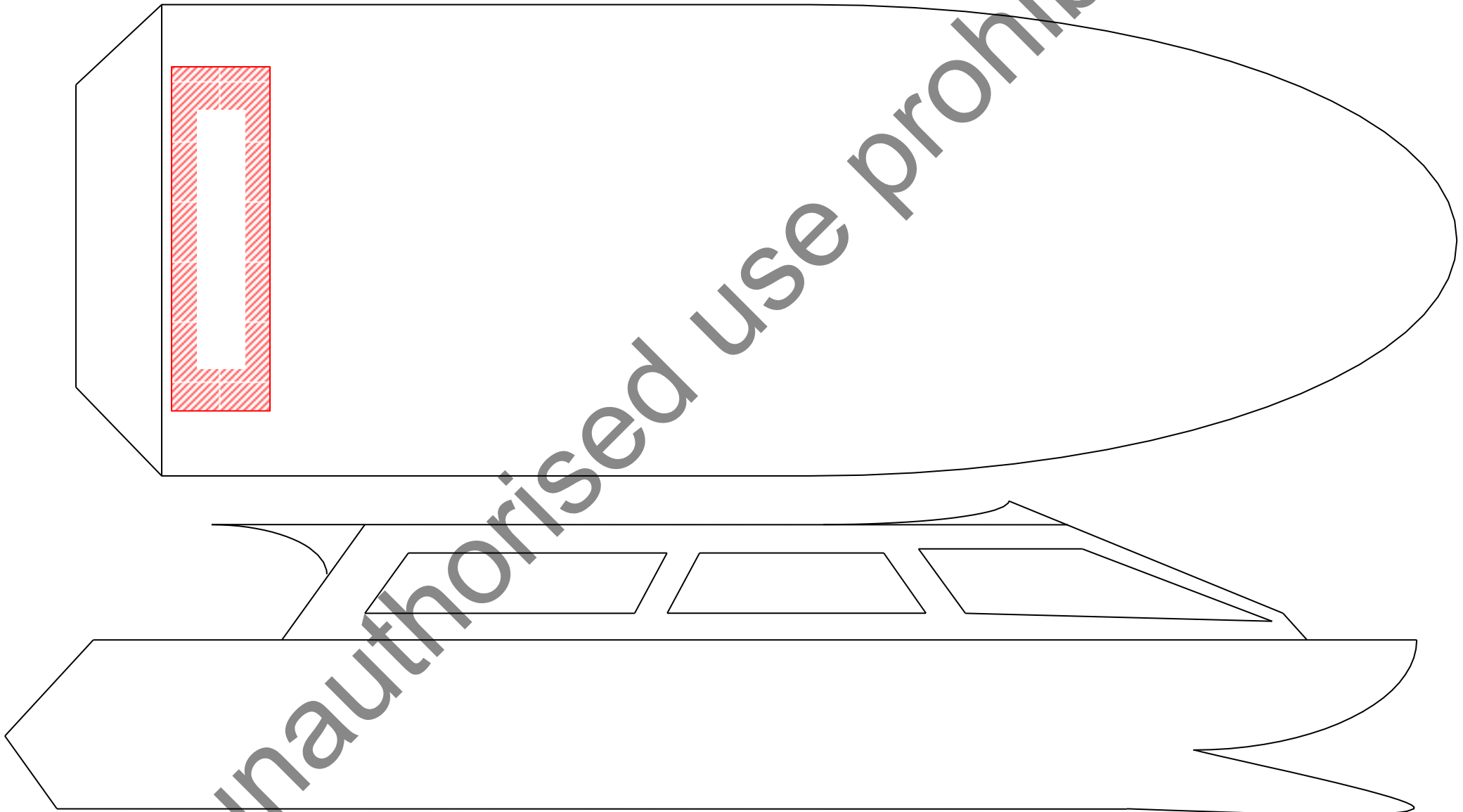
- 5.**  
Should you need to enter the  
water from a small height  
place your hands firmly on  
the lifejacket above your  
chest and bear down to hold  
the life jacket in place on  
entry



Unauthorized use or distribution is prohibited

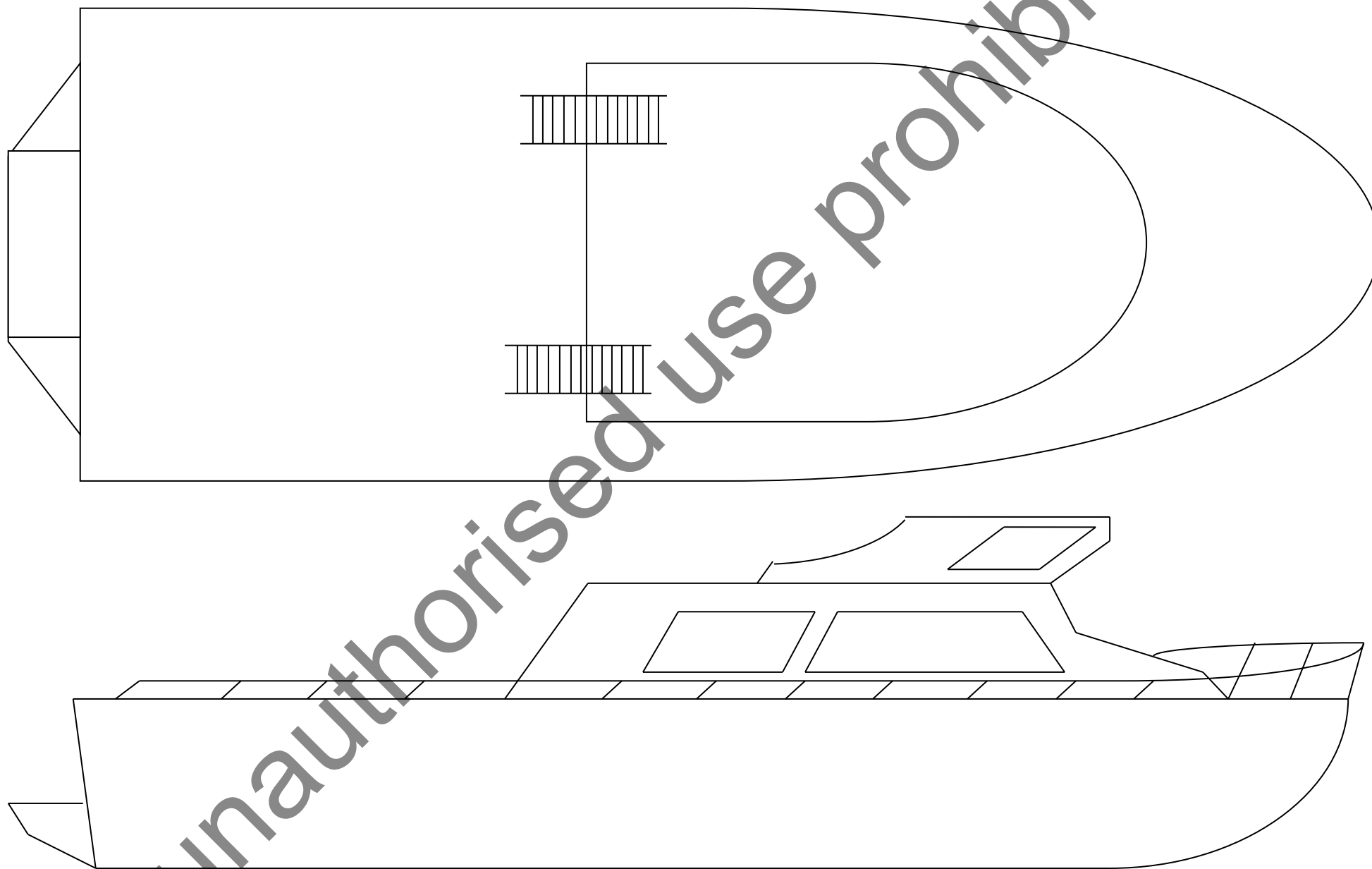
**EMERGENCY PLAN**

**ASSEMBLY STATIONS AND LOCATION OF EMERGENCY EQUIPMENT Non flybridge**



**EMERGENCY PLAN**

**ASSEMBLY STATIONS AND LOCATION OF EMERGENCY EQUIPMENT Flybridge**





# West Coast Rock Lobster Managed Fishery

## Code of Practice

### for

## Reducing Whale Entanglements

### Introduction

The Western Rock Lobster Council (WRLC) developed a Whale Entanglement Code of Practice (CoP) in 2007 in association with Government and non-government agencies to reduce interactions with whales in Western Australian waters. Through a consultation process involving a range of stakeholders it was recognised that a CoP was necessary. This CoP is specifically aimed at minimising entanglement of whales in rock lobster pot lines, although the strategies proposed will also minimise entanglements with other marine wildlife.

The CoP helps the industry to make progress against the following Government and management considerations:

- Fishing activities in which fishing gear is set, using trailing ropes or tethered buoys, is identified as a potentially threatening process, particularly for migrating Southern Right and Humpback whales which are protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Western Australian Wildlife Conservation Act 1950*;
- Whale entanglements are recognised as a management issue for the West Coast Rock Lobster Managed Fishery by both the WA and Commonwealth Governments;

### Benefits of the Code of Practice

1. As a conservation measure to assist in protecting whales from entanglement.
2. The profile of the rock lobster industry can be improved by:
  - their direct involvement in the reduction of whale entanglements by acknowledging best fishing practices at industry level; and their involvement in the disentanglement program.
3. Avoiding loss of gear and catch from lobster pots.
4. Safe working practice for boat crews to avoid injuries.
5. Safe working disentanglement network. The need exists for fast reporting of incidents so the disentanglement process can begin.

Please see overleaf for mandatory gear configurations  
Contact Jason How on 9203 0247 for any queries on  
Whale Sightings  
Contact WRL Management on 9482 7333 for any  
queries on gear modification requirements

To notify of an entanglement call:

08 9219 9840

or

*Wildcare Helpline* on 08 9474 9055

### What to do if encountering a whale entanglement

- **Report entanglements as soon as possible**

Rapid reporting ensures entanglement response teams have the best possible chance of successfully disentangling whales. Fishers should monitor entanglement situations, with due regard for the safety of the vessel and the whale, until assistance teams arrive.

- **Stand-by the entangled whale**

When possible this enables the disentanglement team to find the whale quicker and gain all the necessary information from the fisher prior to attempting disentanglement.

- **DO NOT attempt to cut the whale free**

The attached line allows a safe working line for the disentanglement team.

- **Be co-operative when responding to entanglements**

Fishers can voluntarily participate in Department of Parks and Wildlife training programs for involvement in disentanglement operations. This training will ensure that fishers are aware of procedures and are familiar with disentanglement team personnel.

Fishers should not attempt disentanglement of whales without the assistance of the WA Government's Whale Disentanglement Team

### Practices that reduce the risk of whale entanglements

#### Rock Lobster fishermen should:

- **Be aware of whales between May and November**
- **Adhere to the mandatory gear modifications**

(see overleaf) during the period 1 May to 31 October inclusive.

- **Participate in the Marine Fauna Sightings app**

To support researchers in better understanding the paths of migrating whales.

- **Dog boning of rope**

Dog boning of rope can occur if fishers wish to reduce rope on or near the surface when fishing with less than 32.9 m of rope.

- **Avoid setting pots in clusters**
- **Regularly check pots**

The Disentanglement teams have a greater chance of success if the entanglement is discovered quickly.

- **DO NOT leave pots in the water for prolonged periods**

(mandatory to pull pots with weighted ropes once every 7 days).

Pots should be retained on board or returned to shore when they are not fishing for prolonged periods.

- **Collect abandoned/lost or cut pot lines, rope or fishing gear**
- **Investigate all new technologies that may reduce entanglements**



## Gear modifications

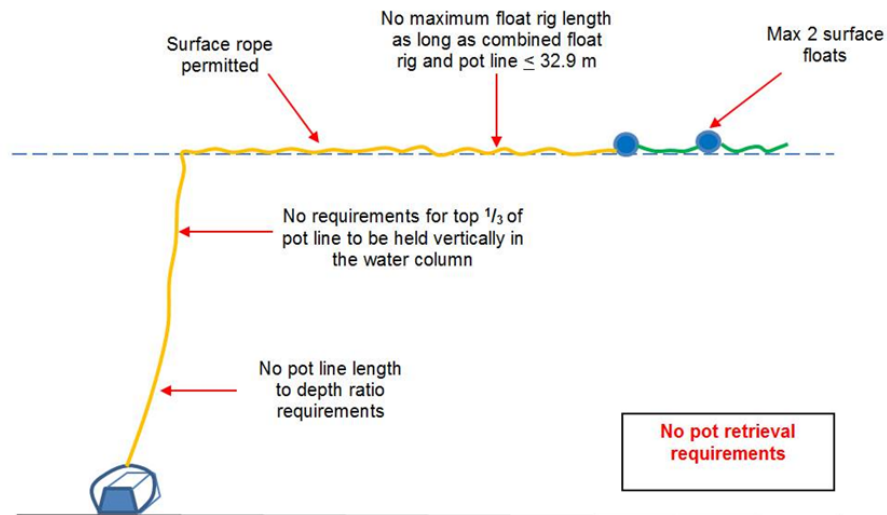
On 1 May 2016 new modified whale entanglement mitigation measures were implemented in order to reduce the risk of whale entanglements in the fishery during the whale migration season.

These measures will be in place from 1 May to 31 October inclusive each year. As part of these changes the 'whale zone', which was introduced in 2015, has been removed.

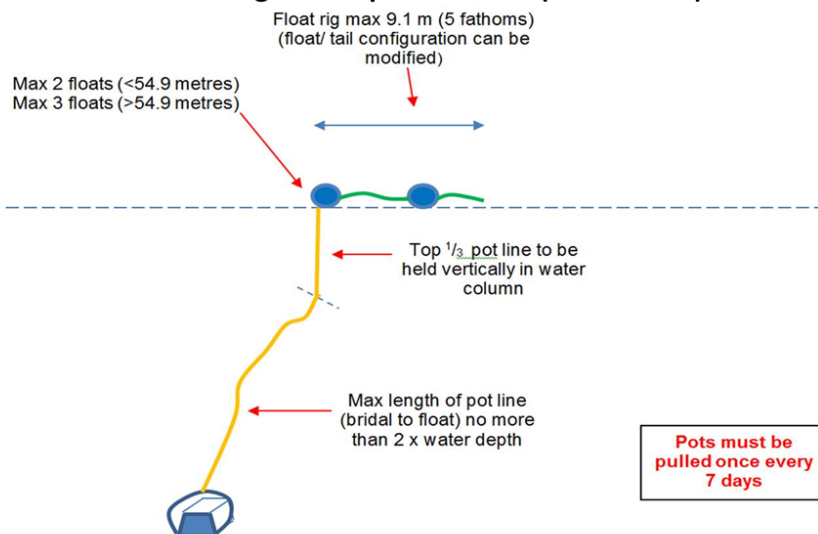
To simplify the requirements, fishers who use more than 32.9m (18 fathoms) of rope, are required to abide by the gear modifications which include restrictions on rope length and requirements of negatively buoyant rope and minimum pot retrieval requirements (*image below; not to scale, guide only*).

Specific details on the gear modifications can also be found at the Department of Fisheries website as well as the WRLC website.

### When fishing with ropes $\leq 32.9$ m (18 fathoms)



### When fishing with ropes $> 32.9$ m (18 fathoms)



## Whale App to help get the big picture on WA migration

A whale app is now available to encourage all fishers to assist with whale migration research by reporting sightings on their smart phone.

**Marine Fauna Sightings** can be downloaded for free and it enables all water users to submit their sightings of whales along the coast. The WRLC requests that all rock lobster fishers download and use this app to report all whale sightings.

To map the migration corridor of humpback whales, dedicated app users are required to log all sightings when returning to port in June and September.

If you are interested please contact Jason How (details overleaf).