



FRDC

FISHERIES RESEARCH &
DEVELOPMENT CORPORATION

Understanding the markets for Western Rock Lobster

Phase 1

Matt Taylor, Chris Price and Daniel Fels

November 2020

FRDC Project No **2017-137**

© 2020 Fisheries Research and Development Corporation.
All rights reserved.

ISBN 978-0-6488948-1-0

Understanding the markets for Western Rock Lobster: Phase 1

2017-137
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 Western Rock Lobster (Western Rock Lobster Council Inc.).

This publication (and any information sourced from it) should be attributed to Taylor, M., Price, C. & Fels, D., Western Rock Lobster (Western Rock Lobster Council Inc.), 2020, *Understanding the markets for Western Rock Lobster: Phase 1*, Perth, Western Australia, November. CC BY 3.0

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

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 reader's 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 (CEO, Western Rock Lobster Council Inc.)
Address: 28 Mews Rd
Fremantle WA 6160
Phone: 08 9432 7721
Fax: 08 9432 7730
Email: 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
Web: www.frdc.com.au

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

Contents

Contents	iii
Acknowledgments.....	iv
Executive summary	v
Introduction.....	1
Objectives.....	2
Method	3
Results, discussion, and conclusion	4
Implications	7
Recommendations	8
Extension and adoption.....	9
Project materials developed	10
Appendices	11

Acknowledgments

This project was funded by the Fisheries Research and Development Corporation (FRDC).

Thanks go to all co-investigators for collaborating on the project and reviewing this report.

The authors would like to thank all members of Western Rock Lobster's Total Allowable Commercial Catch (TACC) Committee, who took the time to attend meetings and provide valuable input and feedback.

Executive summary

This report outlines work completed by the Western Rock Lobster (WRL) Council within the FRDC funded project 2017-137 *Understanding the Markets for Western Rock Lobster (Phase 1)*. Data has been gathered from a number of sources (across several general categories of market information (e.g. production, trade, prices, economic activity) to create a comprehensive and continuously updated collection of reliable datasets which are a baseline for current and future effort to enhance market development including assessment of current and potential markets.

The objective was to analyse available data on the production, export and markets for WRL and competitor products to ensure that the WRL industry has sufficient market intelligence to remain economically sustainable, reduce risk and improve overall income and profitability.

The deliverables of this project include a comprehensive collection of reliable datasets, which are available for interrogation, to support effective decision-making by the WRL Total Allowable Commercial Catch (TACC) Committee and Board. The intended outcome is a more informed industry, with a particular focus on those involved in making TACC recommendations. Additionally, updated information is extended to WRL members as part of a monthly publication.

Data provision arrangements were established for each general category of market information (e.g. production, trade, prices, economic activity, etc.). Market information has been sourced and compiled, informed by the principles of comprehensiveness and consistency.

Over the life of this project, the data collected and analysed have informed TACC recommendations, and have also been valuable in considering industry risks and opportunities, as well as industry responses to specific issues such as the impacts of the COVID-19 pandemic.

The work completed by this project has increased industry knowledge, through the dissemination of information and insights that were not previously available to industry members and other stakeholders.

It is recommended that the data sourcing, management and extension practices established as part of this project be maintained and further developed/refined, in support of the ongoing *Understanding the markets Phase 2 Project*, (FRDC 2017-138). It is also envisaged that these activities will continue beyond the life of the *Understanding the markets* projects, as a general 'industry good', supported by WRL resources.

Keywords

Western Rock Lobster (*Panulirus cygnus*); rock lobster; spiny lobster; lobster; markets; export; trade

Introduction

The West Coast Rock Lobster Managed Fishery comprises around 240 owner operator businesses, located mainly in regional areas and spread over more than 1,000km of Western Australian coastline. The fishery is managed as an Individually Transferrable Quota system, where the Total Allowable Commercial Catch is determined via consultation between industry and government.

The WRL Council, the peak industry body representing the interests of the WRL fishery, implements an ongoing strategic approach to the future setting of the Total Allowable Commercial Catch (TACC) for the commercial Western Rock Lobster fishery by providing professional evidence-based advice on future TACC settings and on-going leadership in managing broader issues, risks and opportunities for a better industry future.

Following the "Rogers TACC Review report" (FRDC Project No 2015-236) in 2016, WRL formed a TACC Committee bringing together representatives from the value chain including fishers, processors, international marketers, scientists, managers and Dr Peter Rogers as the author of the TACC Review report. The role of this Committee is to obtain and consider the due diligence necessary to underpin sound recommendations on future TACC settings.

The TACC Committee agreed to commence a work program to advance the collection of data and relevant information to facilitate achievement of its primary objective: to maximise the commercial industry benefit to the state, taking into consideration sustainable production, maximising licence earning capacity and diversifying market risks/market portfolios. This required extending WRL's scope of research to include trade and consumer data analysis as well as stock assessment and industry consultation to better understand the Western Rock Lobster market.

WRL's Strategic Plan 2017-2021 identifies the need to have a far greater understanding of markets in order to achieve at least one of its Objectives, namely: "The Western Rock Lobster industry is professionally managed to sustain its economic contribution to the WA economy." The stated strategy to achieve this objective is to:- "Collaborate and invest in targeted research for future resource security", of which one of the priority tactics is to:- "Invest in improving understanding and analysis of market, trade and industry data, broader trends and impacts for the WRL industry." There is a clear understanding by the industry that it needs to have market intelligence if it is to remain economically sustainable, reduce its risk and improve overall income and profitability.

In late 2017 the TACC Committee determined a scope of works and through WRL commissioned an independent analyst to collate Phase 1 trade and production data (2017-137 *Understanding the Markets*). The objective for this research was to provide a range of data relevant to understanding supply trends in the global lobster market and the position of Australian and Western Australian lobster exports within it. The Phase 1 report simply focusses on where product is going, and for how much.

The analysis undertaken in Phase 1 focussed on four areas of global significance in the global lobster market: American lobster (*Homarus americanus*), cold water spiny rock lobster (*Jasus* spp.) and tropical and temperate spiny lobster (*Panulirus* spp. or *Palinurus* spp.). Western Rock Lobster (*Panulirus cygnus*) and Southern Rock Lobster (*Jasus edwardsii*) are a focus while trade flows of other tropical and temperate rock lobster are monitored closely in terms of the regions from which they are exported and their destination markets. In the medium-term, keeping abreast of development in aquaculture as well as the grow out of wild caught puerulus throughout the world requires ongoing monitoring, particularly tropical rock lobster (*Panulirus ornatus*).

Objectives

Objective 1: Analyse current data on the production, export, and markets for WRL and competitor products

The output from this objective is a comprehensive collection of reliable datasets, which are available for interrogation, in support of relevant deliberations by the Total Allowable Commercial Catch (TACC) Committee and the WRL Board. The intended outcome is a more informed industry, with a particular focus on those involved in making TACC recommendations.

Objective 2: Conduct in-country surveys to determine the final destinations for Western Rock Lobster

This objective involves an in-depth examination of the final destinations and demand for Western Rock Lobster, a consideration of ways in which current markets may be more profitably serviced, and the potential identification of valuable opportunities in new markets. Having a greater understanding of markets for Western Rock Lobster will allow industry to better assess market risks (e.g. regarding exposure to the China market) and may facilitate strategic planning at an industry level.

Objective 3: Create comprehensive market dashboard for the Western Rock Lobster industry

The industry and market dashboard will present comprehensive, accurate and timely information regarding markets for Western Rock Lobster and its competitors. The dashboard is to be maintained by WRL Council (most probably on the WRL website). As is the case for the other objectives of this project, the intended outcome is a better-informed industry.

A note regarding the second and third objectives

The second and third objectives of this project are objectives shared with FRDC project no. 2017-138, *Understanding the markets for Western Rock Lobster: Phase 2*. Together, 2017-137 and 2017-138 constitute the *Understanding the markets* program of work (a.k.a. the *Understanding the markets* initiative). While the realisation of the shared objectives is expected with the completion of Phase 2, much of the groundwork is expected to have been established by work completed in fulfilment of Phase 1 (i.e. this project). With some elements of 2017-138 being unique to that project, work on Phase 1 and Phase 2 has been undertaken concurrently.

Method

The initial step in planning for the completion of this project was identifying information requirements and considering the availability of said information. This process started during the funding application process, as reflected within the project agreement, and continued through the initial stages of the project. This initial stage included reviewing previous projects relating to the Western Rock Lobster industry, such as FRDC 2006-213¹ and FRDC 2015-236².

Regarding each general category of market information (e.g. production, trade, prices, economic activity, etc.), the general approach taken was as follows:

- investigate data availability and options for provision.
- establish arrangements for data provision, including registrations/subscriptions but also relationships of goodwill relating to the free provision of data.
- undertake the initial compilation and treatment of data, including identifying any issues therein, and ‘mapping’ data elements if/for combining data across multiple sources.
- commence exploratory data analysis, to turn information into insight (but also to identify issues further to those identified in the previous step); and,
- create notes regarding data provision arrangements and the maintenance of core datasets.

The way in which market information has been sourced and compiled has been informed by the principles of comprehensiveness and consistency, while noting that these principles are often in opposition to each other as a practical matter. A further consideration throughout this project has been the price and value of data subscriptions. This is important, as WRL is committed to maintaining the core datasets and products indefinitely (i.e. beyond the completion of this project and the related provision of IPA funds).

Project resourcing

The Total Allowable Commercial Catch (TACC) Committee is the steering group for the *Understanding the markets* initiative, with oversight of the work completed.³

Matt Taylor (WRL CEO) acts as the principal investigator for the *Understanding the markets* initiative, supported by the work of Chris Price (WRL Market Analyst and Economist) and Daniel Fels (WRL Economist). WRL has resourcing equivalent to one full-time employee dedicated to the *Understanding the markets* program of work.

Also, in the initial stages of this project (2017-137), WRL engaged Dr Paul McLeod of Economic Research Associates to produce a preliminary report, *A graphical analysis of recent trends in global lobster markets with related data bases*, attached in this document as Appendix 3.

¹ FRDC 2006-213: *Expand and develop the WA specific global lobster market database for strategic planning by Australian rock lobster industries*

² FRDC 2015-236: *Establishing a low risk incremental approach for setting TACCs (changing quotas) in the Western Rock Lobster Fishery, considering maximum economic yield and other objectives*

³ For details of the membership of the TACC Committee and information about its role and responsibilities, refer to the appendix.

Results, discussion, and conclusion

Objective 1: Analyse current data on the production, export, and markets for WRL and competitor products

Results

WRL has collated a collection of relevant datasets. Arrangements are in place for the ongoing supply of data from selected providers, including a process for maintaining the core datasets (usually involving monthly updates).

The categories of information gathered include but are not limited to production, trade, prices, and economic activity. The contents of the datasets collated address the matters set out in the 'Method' section of the project agreement and are summarised in what follows.

Production

Regarding Australian lobster production, WRL sourced long run series from ABARES (the Australian Bureau of Agricultural and Resource Economics and Sciences), for comprehensive and consistent data, and have supplemented this with more detailed information directly from the organisations involved in fisheries management within each relevant jurisdiction (e.g. the Department of Primary Industries and Regional Development (DPIRD) in the case of the Western Rock Lobster fishery).

Regarding global production, reasonable comprehensive data over a moderately long timeframe have been sourced from the global production database of the FAO (the Food and Agriculture Organization of the United Nations). Data from national sources have been used as complementary information, and as a check on the FAO data.

International trade

A global dataset of international trade data has been compiled from sources including but not limited to: UN Comtrade (United Nations Statistical Division), ITC (International Trade Centre) Trade Map, the Australian Bureau of Statistics (ABS), Export to China (ETCN), the General Administration of Customs of the People's Republic of China (GACC), and Stats NZ. Several other sources including FAO's Globefish were also explored as part of the process of establishing this dataset.

National sources of international trade data have been used to fill gaps in global datasets, such as those sourced from UN Comtrade and ITC Trade Map, but have also been used in the creation of more detailed datasets for particular exporters (e.g. Australia and New Zealand) and importers (e.g. China). These more-detailed datasets are crucial in addressing many of the research questions included in the project proposal and agreement, while the global datasets are useful for identifying broad trends.

Prices

The production and trade data described above include both quantity and value, allowing calculated unit values (i.e. weighted-average prices in the context of a particular category and period). Unit values are very useful as an objective and comprehensive measure of returns, but they also have limitations. Notably, unit values can be skewed by composition effects, and only relate to a particular point along the value chain. WRL has started to collect a range of other (direct) pricing series, including beach prices for Western Rock Lobster, and retail lobster prices in the domestic and overseas markets.

Economic activity, etc.

To understand demand drivers, a significant amount of statistical information relating to demographics and economic activity within China has been compiled. In particular, indicators relating to retail sales and the food services sector are relevant to understanding short-run fluctuations in demand, while demographic factors and overall levels of wealth (and wealth distribution) are relevant to understanding demand prospects for the medium-to-long run.

Discussion and conclusion

This initial phase of the *Understanding the markets* initiative has delivered a comprehensive collection of reliable datasets, which will be maintained during the completion of Phase 2 and beyond.

The information gathered has been available for interrogation, in support of relevant deliberations by the Total Allowable Commercial Catch (TACC) Committee and the WRL Board. Some of the information and insights produced during Phase 1 are also being shared with the broader industry, through a variety of channels (see 'Extension and adoption' section).

In many cases, the data gathering and analysis as part of this project has provided evidence in support of the information coming from market participants. At other times, the information and insights generated have led to a re-appraisal of such anecdotal information or have added valuable nuance or context. (Of course, it is also the case that anecdotal information coming from market participants has helped guide the treatment, analysis, and interpretation of data as part of this project.)

The maintenance of core datasets beyond the life of this project will be of ongoing value in increasing industry knowledge but also in informing future industry deliberations and influencing further research priorities. Along a similar line, it can be noted that WRL has built up significant expertise within the organisation which will be of value during and beyond the completion of the *Understanding the markets* initiative.

Objective 2 and Objective 3: Conduct in-country surveys to determine the final destinations for Western Rock Lobster, and create a comprehensive market dashboard for the Western Rock Lobster industry

As explained in the 'Objectives' section of this report, the second and third objectives of this project are objectives shared with FRDC project no. 2017-138, *Understanding the markets for Western Rock Lobster: Phase 2*. Together, 2017-137 and 2017-138 constitute the *Understanding the markets* program of work (a.k.a. the *Understanding the markets* initiative). While the realisation of the shared objectives is expected with the completion of Phase 2, much of the groundwork is expected to have been established by work completed in fulfilment of Phase 1 (i.e. this project).

Regarding the second objective, China import data already obtained as part of 2017-137 are of considerable value in determining the final, in-country destinations for Western Rock Lobster. WRL has obtained statistical information from a combination of subscription and free sources, regarding points/ports of entry into China and the location within China of the importing businesses. These data provide an evidence base that complements the anecdotal information obtained from market participants, and informs the work being undertaken in the next phase of the *Understanding the markets* initiative.

Regarding the third objective, work undertaken during this project has largely addressed the information requirements – data acquisition and organisation - for the establishment of an industry and market dashboard. Further work as part of 2017-138 will be directed towards the design and implementation of the dashboard, formalising data permissions in relation to publication, and planning

for the continued maintenance and updating of the dashboard (beyond the life of the *Understanding the markets* initiative).

Implications

Being only the initial phase of the larger *Understanding the markets* initiative, it is difficult to properly assess the impacts flowing from the work completed to date. It may not be possible to fully appreciate the value of this work until after the delivery of project outputs under Phase 2, and it may take even longer for the benefits to become completely apparent.

WRL has confidence, however, that the information and insights produced to date are of considerable value and have already had impacts of significance:

- Having a shared, evidence-based understanding of markets has provided context for, and input into, deliberations of the Total Allowable Commercial Catch (TACC) Committee and the WRL Board. It has informed recommendations for the TACC and has supported the development of industry responses to events and issues such as the COVID-19 pandemic.
- Information and insights produced during Phase 1 are also being shared with the broader industry, through a variety of channels (see 'Extension and adoption' section). Annual surveys of WRL's membership demonstrate continued interest in better understanding markets, suggesting that industry engagement will be high and the benefits of extension great, as Phase 2 is progressed.

Finally, in relation to the impacts and benefits of this project, it should be noted that substantial subject-matter expertise has been acquired and developed within WRL. Notably, this enables work to continue towards the satisfaction of requirements for Phase 2 of the *Understanding the markets* initiative (i.e. 2017-138). In a more general sense, the knowledge and skills gained should be of value to WRL and industry, in the present and into the future.

Recommendations

It is recommended that the data sourcing and management practices established as part of this project be maintained and further developed/refined, in support of the ongoing *Understanding the markets* initiative (i.e. during Phase 2, 2017-138). It is also envisaged that these activities will continue beyond the life of the *Understanding the markets* initiative, as a general 'industry good', supported by WRL resources.

Further development

As part of Phase 2 of the *Understanding the markets* initiative (i.e. 2017-138), the information already assembled as part of this project (2017-137) will be applied and expanded upon in several important ways, including:

- conducting in-country surveys regarding the destination for Western Rock Lobster and its market positioning.
- creating a comprehensive industry and market dashboard for Western Rock Lobster; and,
- developing an assessment of MEY in the Western Rock Lobster fishery, as guidance for the deliberations of the Total Allowable Commercial Catch (TACC) Committee and the WRL Board.

Extension and adoption

Industry has been informed with market data output from this project via the WRLC communications program including markets content in monthly newsletters to Members (see link www.westernrocklobster.org/knowledge-hub-categories/category/reports/) coastal meetings and Annual Management Meetings.

Market data collection, interpretation and extension to industry will continue after this project finishes.

The results of the project are delivered to exporters via the channels available to industry generally, as well as in material supplied to the Total Allowable Commercial Catch Committee. This was particularly pertinent in informing deliberations of the Total Allowable Commercial Catch (TACC) Committee and responding to the COVID-19 crisis in early 2020. Similarly, the project has enabled the provision of timely and relevant market price and depth information to guide TACC Committee and broader industry discussion and decision-making in the wake of disruptions to the trade with China in late 2020.

Future extension of the results will be incorporated into the export planning of individual enterprises and inform policy at the industry, State and Federal levels. Future market data will be critical to the decision-making process around setting the TACC associated with maximum economic yield, (as identified in FRDC project 2015-236 *Optimum GVP and industry enterprise profitability*).

Processors, exporters, and traders are expected to take an active interest in the project throughout its life, including Objectives 2 and 3 which are incorporated in the ongoing FRDC project 2017-138 *Understanding the markets*.

Evidence of price correlation within Australian lobster species in export markets over time suggests there is a relatively close substitutability with Western Rock Lobster, hence the output from this project bears strong applicability and relevance to the other Australian lobster fisheries.

Project materials developed

Much of the focus during this project has been on sourcing the information and gaining the understanding necessary for the development of tangible output during the second, more substantial phase of the *Understanding the markets* initiative. With that having been said, there are some materials that have already been developed as part of this project:

- A preliminary report prepared by Dr Paul McLeod of Economic Research Associates, *A graphical analysis of recent trends in global lobster markets with related data bases*. Attached as Appendix 3.
- A report by the Total Allowable Commercial Catch (TACC) Committee, prepared as part of the TACC setting cycle for the 2019/2020 season, but which also includes preliminary versions of some of the Phase 1 market information and further develops the scope of the *Understanding the markets* initiative. Attached as Appendix 4.
- A comprehensive markets report, *An overview of global lobster production and international trade*, has been developed and will be updated on an annual basis, as part of the TACC setting cycle. Publication is pending for the inaugural edition, with a copy to be provided with the upcoming milestone report for Phase 2 (2017-138). Attached as Appendix 5.
- Monthly market reports for WRL members, which are also available on the WRL website. As examples, the [May 2020](#) and [August 2020](#) editions are linked here.

Appendices

Appendix 1: List of researchers and project staff

Matt Taylor, WRL CEO

Chris Price, WRL Market Analyst and Economist (Industry Research Programs)

Daniel Fels, WRL Economist (Industry Research Programs)

Dr Paul McLeod, Economic Research Associates Pty Ltd

Total Allowable Commercial Catch (TACC) Committee:

The Committee brings together representatives from along the Western Rock Lobster value chain (e.g. fishers, processors, and international marketers), as well as including fisheries scientists and managers. Membership as of November 2020 was as follows:

- Terry Lissiman, WRL Chair, and Chair of the TACC Committee
- Fedele Camarda, WRL Deputy Chair
- Matt Taylor, WRL CEO
- George Stavrinos & Ngongo Mwanangoi, Bluwave
- Matt Rutter, Geraldton Fishermen's Co-operative
- Dave Thompson & Joe Watson, Indian Ocean Rock Lobster
- Ryan Fuller, KB Food Co
- Greg Hart, Wild Oceans
- Dr Peter Rogers, independent expert
- Graeme Baudains, Department of Primary Industries and Regional Development (non-voting member)
- Dr Simon de Lestang, Department of Primary Industries and Regional Development (non-voting member)
- Liam O'Connell, Department of Primary Industries and Regional Development (non-voting member)

The Committee considers a wide variety of biological and economic data to provide expert, evidence-based advice to the WRL Board regarding future TACC settings in the Western Rock Lobster fishery. More broadly, the Committee provides leadership in responding to industry issues, and in managing risks and opportunities, for a better industry future. In this capacity, the Committee acts as the steering group for the *Understanding the markets* initiative. It has also acted, as and when required, as a deliberative body for coordinating responses to industry issues as they arise (e.g. impacts of the COVID-19 pandemic).

Appendix 2: Final Report FRDC Project No 2015-236

“Establishing a low risk incremental approach for setting TACCs (changing quotas) in the Western Rock Lobster Fishery, taking into account maximum economic yield and other objectives”

Appendix 3: A graphical analysis of recent trends in global lobster markets with related data bases

Appendix 4: Total Allowable Commercial Catch Committee Report 2018

Appendix 5: An overview of global lobster production and international trade 2020