

An overview of global lobster production and international trade: 2024 edition

October 2024



Western
**ROCK
LOBSTER**

World leading sustainable fishery



About us

Western Rock Lobster (WRL) is the peak body for the Western Rock Lobster industry, representing the interests of commercial licence holders as well as the industry more broadly. WRL's mission is to support a confident, sustainable and well-respected Western Rock Lobster industry. For more information about WRL, its objectives, and its activities, please visit the WRL website (www.westernrocklobster.org).

About this document

This report was prepared for the WRL Total Allowable Commercial Catch (TACC) Committee by Daniel Fels (WRL Economist) and Chris King (WRL Data Analyst). The report provides an overview of global lobster production and international trade, with a focus on the international customers and competitors for Western Rock Lobster. It is intended that this report will support informed decision making within industry, as well as influencing future research priorities.

Acknowledgements

The preparation of the report forms part of project '2022-060 Understanding the Economics and Markets of the Western Rock Lobster industry' which is being undertaken by WRL with funding provided through its Industry Partnership Agreement with the Fisheries Research and Development Corporation.

WRL would like to thank members of the TACC Committee for their input during the preparation of this report. The TACC Committee brings together representatives from along the Western Rock Lobster value chain, including fishers, processors, and international marketers, fisheries scientists and managers, and independent experts.

WRL would also like to sincerely thank former WRL Market Analyst & Economist, Chris Price, who assisted in past iterations of this report.

Disclaimer

This report has been prepared for general information purposes only. WRL, its employees and advisers disclaim all liability, including liability for negligence, and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication.

Contents

Contents	i
Table of figures	iv
Executive summary	v
1.0 Introduction	1
1.1 Content and structure of this report	1
1.2 Scope of analysis	1
1.2.1 Types of lobster	1
1.2.1 Economic scope	2
1.2.2 Timeliness	2
2.0 Overview of global production	3
2.1 Global production is dominated by American lobster	3
2.2 European lobster contributes relatively little to global production	4
2.3 Spiny lobster production is widely dispersed and diverse	4
2.4 A note regarding Marine Stewardship Council (MSC) certification	7
2.5 Aquaculture is presently only a minor part of global production but will grow	7
3.0 Summary of international trade	9
3.1 Patterns of trade in part reflect seasonal availability and logistical considerations	9
3.2 Canada and the US are the most significant exporters (including for extra-regional trade)	9
3.3 Europe is a minor producer and net importer of lobster	10
3.4 China is the major destination for extra-regional trade	10
3.4.1 Demographic factors and economic development have driven an increase in demand	10
3.4.2 China has accounted for most of the growth in the international trade in lobster over the past decade	10
3.4.3 The China market is really many markets	12
3.4.4 The long-term outlook for demand in China is generally positive, structural challenges notwithstanding	14
3.4.5 Increasing competition from other high value crustaceans	14
3.5 The Americas is a significant source of spiny lobster from international markets	15
3.6 Trade for other spiny lobster producers tends to be more concentrated	15
4.0 Australia and New Zealand rock lobster	16
4.1 Western Rock Lobster accounts for the majority of production	16
4.2 There are significant differences but also interdependencies between fisheries	17
4.3 Industry prosperity has been driven in recent years by live exports to China	18
4.3.1 China is the largest and highest-paying market	18
4.3.2 Preferential trade agreements have supported increases in direct trade with China	18
4.4 The importance of air freight capacity for export markets	19
5.0 COVID-19, trade disruption and the Western Rock Lobster industry	20

5.1 COVID-19.....	20
5.2 Disruption of trade with China	20
5.3 Changes in trade flows into China	22
5.4 Alternative international markets for Western Rock Lobster.....	25
5.5 Changes to trade flows of Australian Lobster	27
5.6 Increased supplies of Western Rock Lobster for the domestic market.....	29
Outlook for Western Rock Lobster markets.....	30

Table of figures

Figure 1: Global lobster production by type, 2002–2022.....	3
Figure 2: Global production volume of spiny lobster by type and/or region, 2022	5
Figure 3: Distribution of Caribbean spiny lobster	6
Figure 4: Caribbean spiny lobster and other spiny lobster production in the Americas, 2002–2022	6
Figure 5: China urban population by income group, 2010 and 2020	10
Figure 6: Intra-regional trade and extra-regional exports, by value, 2002–2023	11
Figure 7: Lobster exports from any origin to the greater China region plus Vietnam, 2013–2023.....	11
Figure 8: China imports of lobster, value by product type and origin, 2023	12
Figure 9: Value of lobster imports for China, and population, by administrative division, 2022	13
Figure 10: Map of China with administrative divisions	13
Figure 11: China urban and rural population and income groups, projection to 2050	14
Figure 12: Lobster production in Australia and New Zealand, by state/country, 2012–13 to 2021-22	17
Figure 13: China imports of lobster, value by product type, monthly	20
Figure 14: Western rock lobster processing, cumulative percentages by Year, Tails	21
Figure 15: Western rock lobster processing, cumulative percentages by Year, Whole Raw.....	22
Figure 16: China imports of non-frozen spiny lobster, quantity by origin, monthly.....	24
Figure 17: China imports of non-frozen spiny lobster, value by origin, monthly.....	24
Figure 18: China imports of non-frozen spiny lobster, unit value by origin, monthly.....	25

Executive summary

A broad range of lobster species support significant and high-value fisheries all around the world. Owing to their high market value as a sought-after food, lobster makes up a disproportionate share of the value of the world's seafood.

Global production of lobster is dominated in volume terms by American lobster, while spiny lobster is generally a higher value product (especially live). Spiny lobster production is also more globally dispersed and more species diverse.

Exports from Northern America dominate international markets with the rise in production of American lobster over recent years. Spiny lobster production and trade, meanwhile, is smaller and has not increased over time. Spiny lobster supply is dominated by wild-caught product, as aquaculture confronts and gradually conquers the issues of puerulus collection and transport, complicated larval cycles and disease management in culture systems. In the case of Australian and New Zealand wild-caught live rock lobster, long term and significant price premiums apply over live American lobster, and live spiny lobster of other origins, into the major export market: China.

Demographic factors and economic development have seen China emerge as the major destination for the international trade in lobster. China has accounted for much of the growth in international trade over the past decade or so, and accounts for a particularly large share of the global market for live spiny lobster – it is the largest and highest-paying market. China's recent political tensions with trade partners have resulted in trade sanctions and other actions being implemented across a range of commodities from various nations. The impact on lobster imports from Australia, in particular, has been severe, with no live product in the product mix, and import volumes and unit prices significantly lower than the period before COVID-19 and disruption to Market access in October 2020. The Australian live lobster trade has instead been diverted to various countries near China since late 2020. China's trade restrictions on Australian lobster create more favourable market conditions for lobster from a range of alternative sources to compete in the China market.

The main potential competitors for live spiny lobster from Australia and New Zealand appear to be Caribbean and Florida sourced spiny lobster, and Vietnamese and other Asian sourced Tropical Rock Lobsters. The logistical challenges of supplying live spiny lobster from the waters off the Americas and Southern Africa have, to date, prevented meaningful volumes being transported by air to China. How quickly and significantly live supplies from these regions develop will depend on a range of factors including trade agreements, within-country processing, transport, infrastructure and regulatory constraints, as well as quality and species-specific issues. The opportunity afforded by the absence of Australian lobster from the direct market into China, owing to market access issues, continues to encourage developments in this space. In particular, export trends of wild-caught Caribbean-sourced spiny lobster merit ongoing monitoring, as do developments in lobster aquaculture technology and husbandry, notably in South-East Asia.

The COVID-19 pandemic brought considerable disruption to the global economy and uncertainty as to the future, and the lobster trade has not been unscathed. Volumes of Western Rock Lobster exports recovered from the hiatus early in the pandemic, and beach prices also recovered. However further disruption to all Australian lobster exports occurred in late 2020, with a hiatus in the direct to China trade forcing a rapid shift to identify and develop alternative markets, both domestic and export. This hiatus continues and, while diplomatic and bureaucratic messages are encouraging the timing of a resumption of live trade remains unknown.

Beach prices of Australian lobster will continue to reflect the volume and price points of alternative markets, and also the increased supply chain costs associated with post-pandemic supply chains and disruptions to the direct China market. With caveats including a return to "non-pandemic" global economic conditions including normalisation of supply chain costs, and a warmer political relationship between Australia and China, the longer-term outlook for the lobster trade remains positive.

1.0 Introduction

This report provides an overview of global lobster production and international trade, with a focus on the international customers and competitors for Western Rock Lobster. It is intended that this report will support informed decision making within industry, as well as influencing future research priorities.

The data and analysis underlying this report are being maintained by WRL, and it is intended that this report will be updated on an annual or biennial basis. This will provide opportunities to incorporate refinements as well as introducing topical issues as appropriate.

1.1 Content and structure of this report

The contents of this report have been based on a review of previous studies and existing resources,¹ insights uncovered through data analysis and through qualitative investigation, and knowledge contributed by industry participants.

There is an emphasis within the body of this report on identifying themes and developing ideas, rather than providing a comprehensive, data-based profile of global lobster production and international trade. Readers with a specific interest in detailed statistical information may wish to refer to the appendix.

The remainder of this introductory chapter clarifies the scope of analysis. Thereinafter, dedicated chapters provide, in turn:

- an overview of global lobster production;
- a summary of international trade in lobster;
- a profile of rock lobster in Australia and New Zealand;
- information regarding post-coronavirus (COVID-19) pandemic conditions and impacts on the Western Rock Lobster industry; and,
- information regarding recent developments in trade with China, resultant changes in trade flows, and an introduction to some alternative markets for Western Rock Lobster.

1.2 Scope of analysis

1.2.1 Types of lobster

The scope of this report is framed with an emphasis on global economic relevance rather than taxonomical completeness or consistency. In general, the report's focus is on two commercially-significant lobster groupings:

- **Homarid lobsters (hereinafter generally referred to as clawed lobster or as American/European lobster)**, being lobster of the *Homarus* genus within the *Nephropidae* family. The only two extant species of homarid lobster are *H. americanus* (American lobster) and *H. gammarus* (European lobster).²
- **Spiny lobsters (sometimes also referred to as rock lobster)**, being lobster of various genera within the *Palinuridae* family – chiefly *Jasus*, *Palinurus* and *Panulirus*. Global production of spiny lobster is more widely dispersed and more diverse than is the case for clawed lobster.

¹ This report is intended for industry stakeholders rather than an academic audience, and so the academic standard for referencing has not been observed. A list of selected resources may be able to be provided on request.

² *Homarus* spp. once also included Cape lobster (*H. capensis*) but this is now considered to form a separate, monotypic genus (*Homarinus*).

Homarid lobster and spiny lobster together account for around 80 per cent of global production reported for all species falling within the definition of lobster under the International Standard Statistical Classification of Aquatic Animals and Plants.

Lobsters other than the species described above are excluded from this report. The overwhelming majority of what remains is accounted for by Norway lobster (*Nephrops norvegicus*) - often referred to as scampi (along with the closely-related *Metanephrops* spp.), these are true lobsters in the sense that they are members of the *Nephropidae* family. However, Norway lobster and other scampi are typically considered as being in a separate market category to that of American/European lobster or spiny lobster. Certainly, Norway lobster does not directly compete on international markets with a premium product such as Western Rock Lobster. By a similar rationale, the scope of this report also excludes other species within the *Nephropidae* family, slipper/fan lobster and bugs of the *Scyllaridae* family, and assorted other minor species of various genera and families.

1.2.1 Economic scope

The focus of this report is on commercial fishing and international markets. Future work as part of the 'Understanding the Markets for Western Rock Lobster' initiative will extend the analysis to consider more components of the value chain. Note that any lobster being traded internationally is likely to have been caught as part of a commercial enterprise but also that it is not always possible to clearly demarcate commercial and non-commercial production. This is especially so when it comes to cases of artisanal, small-scale fisheries and subsistence production.

1.2.2 Timeliness

As a practical matter, this report generally considers the latest available period for which relevant data are available (as well as any significant trends of recent years). Obviously, the availability lag for 'official' statistics can be considerable, especially when it comes to globally-comprehensive datasets collated by international organisations.³ For certain cases within this report, data are presented for selected countries (sourced directly from the relevant national agencies) even though comprehensive global statistics are not yet available for the same period. Further, this report includes some even more timely information, based on anecdotal evidence from market sources.

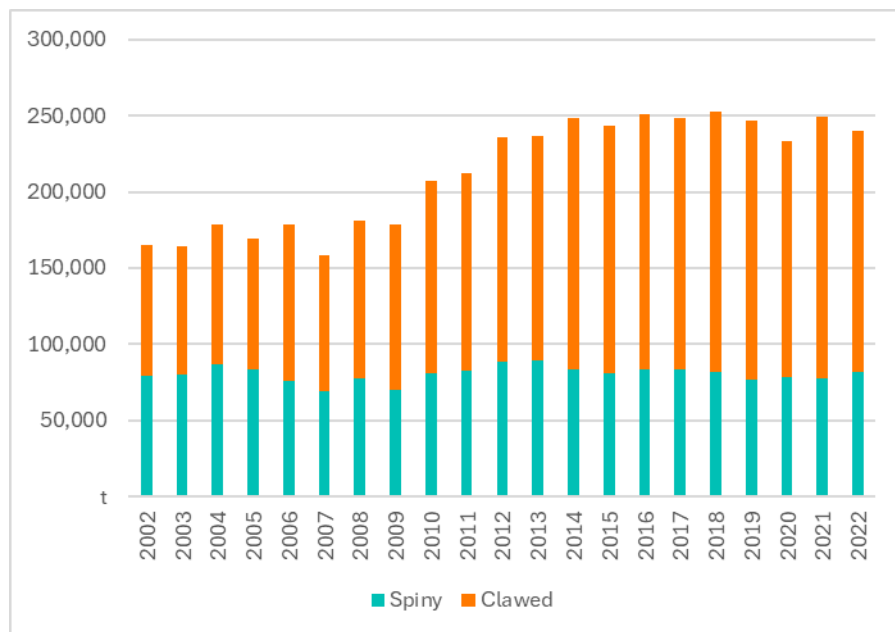
³ For example, consider that comprehensive global production data for 2022 are the latest available from the FAO (the Food and Agriculture Organization of the United Nations) at the time of publishing this document.

2.0 Overview of global production

2.1 Global production is dominated by American lobster

Global production of lobster is dominated by catches of clawed American lobster (*Homarus americanus*) along the Atlantic coast of Canada and the north-east of the United States. This relatively small area accounts for more than 60 per cent of the global production of lobster and has accounted for essentially all of the observed growth in such over an extended period of time.

Figure 1: Global lobster production by type, 2002–2022



Source: FAO FishStatJ

Canada accounts for over half of the American lobster catch, with the largest lobster populations found around Nova Scotia and the southern Gulf of Saint Lawrence. For the US, lobster abundance increases from south to north, with almost all of the catch attributable to Maine and the rest of the New England region. However, landings have been recorded as far south as North Carolina. The commercial fishing of American lobster is almost entirely through the use of baited traps, though trawling has been demonstrated to be commercially feasible (especially in southern parts of the range of the species).

The significant increase in the American lobster catch during the late-2000s and early-2010s was attributable to a combination of factors. The collapse of groundfish stocks (particularly cod) in the 1990s provided the potential for a gradual increase in lobster biomass, while more recent warming of waters in the Gulf of Maine has bolstered populations throughout much of the fishery (even as the same phenomenon has led to more disease and lower populations for southern New England and Long Island Sound). However, the continued warming of waters over the coming years and decades has resulted in the “centre of gravity” of lobster catch has been shifting northwards – and is expected to result in significant declines in American lobster populations in the longer term.

Differences in the timing of catches throughout its range support the year-round availability of American lobster. Canada generally prohibits lobster fishing between July and September, and catches usually peak in December and again during April–June. In contrast, the US allows year-round fishing in the major fishing areas but catches are generally low during the winter and spring followed by an abrupt shift into a period of high landings in early summer. The existence of lobster holding pounds further supports the year-round availability of live American lobster, with hard shell lobster able to be held for considerable periods of time.

2.2 European lobster contributes relatively little to global production

European lobster (*Homarus gammarus*) is the other extant species of clawed lobster. It is substitutable with American lobster to a considerable degree, though European lobster is usually at a significant price premium (especially within Europe). This price premium is attractive enough to spur re-seeding efforts and the development of aquaculture systems capable of commercially cultivating the species.

In contrast to the globally-dominant position of American lobster, European lobster accounts for just 2 per cent of global lobster production, and relatively little of this finds its way to markets outside of the general region of production.

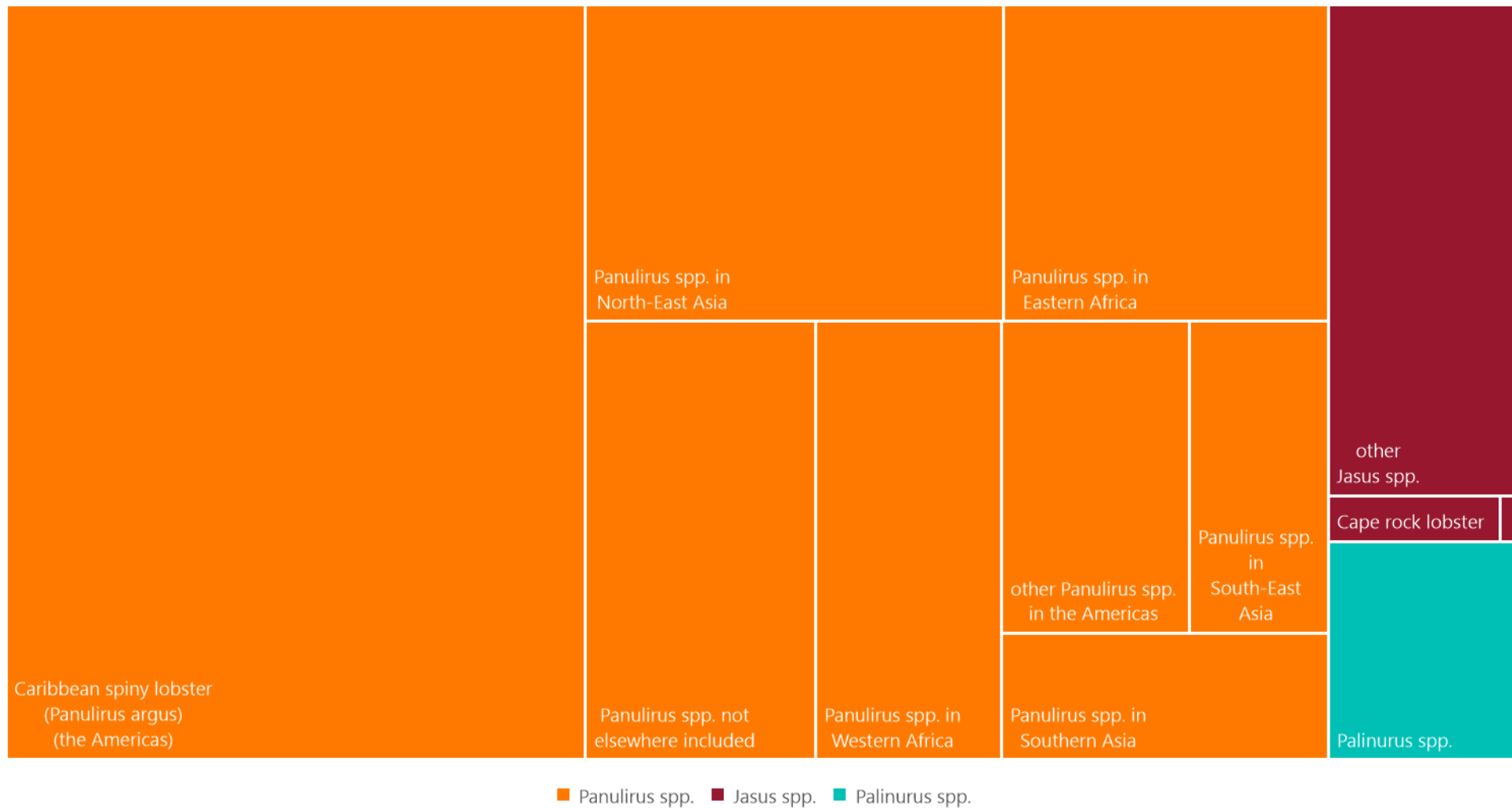
The range for European lobster extends along coastlines of the north-eastern Atlantic, from north-western Norway, south to the Azores and the Atlantic coast of Morocco, and also includes parts of the Mediterranean and the Black Sea. However, the majority of the commercial catch is attributable to the United Kingdom, Ireland, and France.

2.3 Spiny lobster production is widely dispersed and diverse

While most of the respective catches of American and European lobster are relatively concentrated geographically (particularly in the case of American lobster), spiny lobster production is much more widely dispersed, occurring in many tropical, sub-tropical and temperate seas around the world. There is considerably greater biological, environmental and technological diversity among spiny lobster fisheries than is the case with the clawed lobster fisheries.

Caribbean spiny lobster (*Panulirus argus*) is easily the most commercially-significant species of spiny lobster by volume, though there are many other species of importance. These include Western Rock Lobster (*Panulirus cygnus*) along the coast of Western Australia, and Southern/red rock lobster (*Jasus edwardsii*) off south-eastern Australia as well as New Zealand. There is also substantial spiny lobster production through much of South-East Asia (e.g. *Panulirus ornatus*, *Panulirus homarus*) and along various parts of the coastline of Sub-Saharan Africa.

Figure 2: Global production volume of spiny lobster by type and/or region, 2022



Source: FAO FishStatJ

Caribbean spiny lobster (*Panulirus argus*) is fished practically throughout its range, which extends well beyond the Caribbean region—including the entire Gulf of Mexico and the Caribbean Sea, and extending as far north as Bermuda and the east coast of the United States at North Carolina, and along the South American coast to Rio de Janeiro, Brazil. Caribbean spiny lobster accounts for more than 40 per cent of global spiny lobster production and around 90 per cent of spiny lobster production within the Americas.⁴

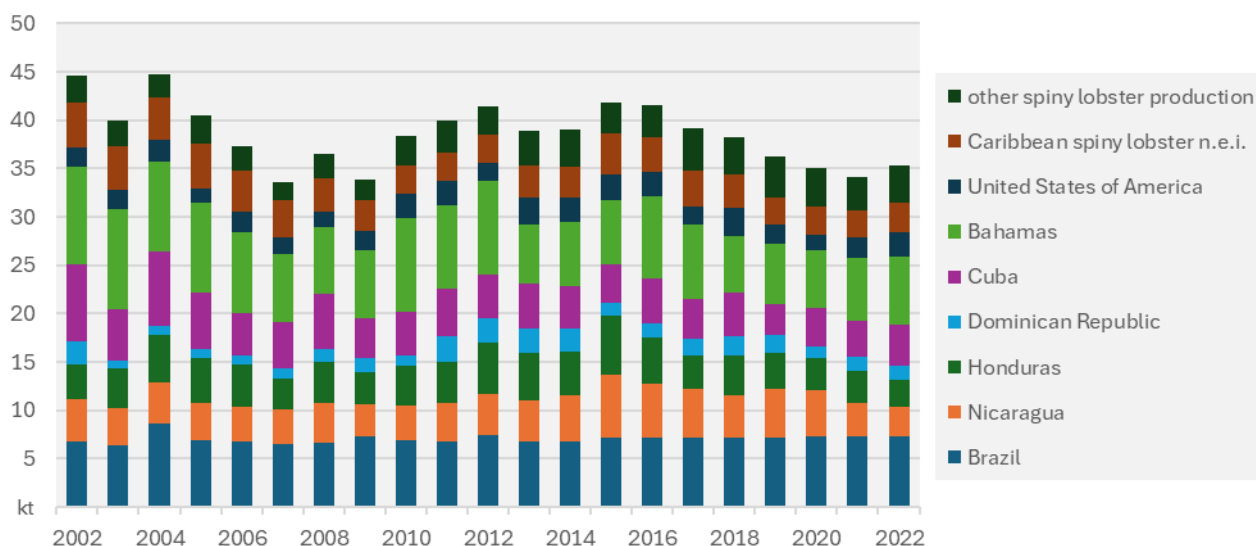
The main producing countries of Caribbean spiny lobster are Brazil, Cuba and Bahamas. The Caribbean lobster fisheries are generally artisanal or small-scale, with the exception of Honduras, Nicaragua and Cuba, where the fisheries are mainly industrial. Globally, there are an estimated total of 60 000 professional fishers in addition to over 100 000 recreational fishers. In some areas, the lobster fisheries are the key economic livelihood of communities in the Caribbean, who have no other means of subsistence. The average production per year of lobster per commercial fisher in this part of the world is as low as 500 kg per year.

Figure 3: Distribution of Caribbean spiny lobster



Source: FAO Aquatic Species Distribution Map Viewer

Figure 4: Caribbean spiny lobster and other spiny lobster production in the Americas, 2002–2022



Source: FAO FishStatJ

As is the case with clawed lobster, many species of spiny lobster are commercially caught through the use of baited traps. However, some of the tropical species are taken by diving or by use of artificial shelters (sometimes referred to as ‘casitas’) which are used to concentrate the lobsters typically living in shallow seagrass habitats. Nets are used to take the lobsters sheltering under casitas, when they are lifted or disturbed

⁴ The sub-tropical waters of the Eastern Central Pacific account for most of the remaining production. California spiny lobster (*Panulirus interruptus*) is particularly significant, although blue spiny lobster (*Panulirus inflatus*) and other species are also fished on a commercial basis.

and the lobsters leave their shelter. Spiny lobster species are also taken by trammel netting and sometime as trawl bycatch.

Note that the method of capture will reflect a confluence of biological, environmental and economic factors, which in turn affect the economics of fishing; and together with the supply chain affect the potential international competitiveness of lobster from a particular fishery. These fisheries range from artisanal or small-scale fisheries, with labour-intensive fishing, sometimes on a subsistence basis, to fisheries that are operated on a very much commercial and industrial basis.

2.4 A note regarding Marine Stewardship Council (MSC) certification

The MSC is the world's most respected independent fisheries sustainability certification standard, which reviews fisheries based on stock assessment and harvest strategy, the impact of the fishery on the wider ecology, and management and consultation arrangements. Third-party accreditation can be an important point of differentiation in international markets.

The major American lobster fisheries have been MSC certified, however, the Gulf of Maine lobster fishery had its MSC certification suspended for a period until being reinstated effective September 2021. The MSC had determined that the fishery was potentially jeopardizing the survival of the critically-endangered North Atlantic right whale.

Relatively little of the global production of spiny lobster production comes from fisheries that have been MSC certified. The Western Rock Lobster fishery was the first fishery in the world to achieve MSC certification, in 2000, and has maintained the certification through periodic reviews since. Other significant spiny lobster fisheries to achieve MSC certification include the California spiny lobster fishery of Mexico Baja California (2004) and the Caribbean spiny lobster fishery of the Bahamas (2018).

2.5 Aquaculture is presently only a minor part of global production but will grow

Aquaculture production is estimated to account for less than 1 per cent of global lobster production, and perhaps 2 per cent of global spiny lobster production. Unlike many other crustacean groups there is little aquaculture production of spiny lobster due to their typically long and complex larval stages. While the life cycle for many lobster species has been closed, most aquaculture production is currently from near-shore sea cage grow-out of wild-caught juveniles of tropical species, mostly *Panulirus ornatus* and *P. homarus*, in Vietnam and Indonesia. In these cage systems, a 5cm juvenile takes 18-24 months to grow out to a 1kg harvest sized animal (or less, for smaller sized animals). If or when breeding and hatchery technology advances to the point of being able to supply large quantities of healthy juveniles, these industries can be expected to grow rapidly.

China import data indicates that the Vietnamese ranch industry may be of a significantly larger scale than previously estimated. Recent trade data shows that imports of live spiny lobster into China from Vietnam reached high levels in 2020, and again in 2022, which may indicate that the aquaculture industry is indeed generating significant volumes of high-quality product. While this represented the lowest-priced live lobster imported into the China market in 2020, unit prices were significantly higher in 2022 – perhaps reflecting market acceptance of quality characteristics.

Interrogating another data source, FAO aquaculture production data indicates that in 2021 Indonesian production of lobster of 3,633 tonnes exceeded Vietnam's 2,422 tonnes. However the indicated value of Indonesia's production at USD56 million was lower than Vietnam's USD67 million. The pronounced difference in unit pricing could be attributed to differences in the mix of species grown and market acceptance of the aquacultured product.

There is pilot scale aquaculture production of the European lobster, *Homarus gammarus*, in northern Europe; based on Recirculating Aquaculture System technology. Growth to 250gram plate-size animals takes around 24 months, and the economics would be difficult given that individual cages are required owing to the species' cannibalistic tendencies. Proponents of this technology suggest that production could reach 1000 tonnes per year by 2027.

Closer to home, the Tasmanian-based company Ornatas has developed technology closing the life-cycle for Ornate Rock Lobster, *Panulirus ornatus*. This species has a relatively short larval cycle duration compared to

other rock lobster, a quick growth rate to market size, and high-value export markets. The company plans to commercialise Ornate Rock Lobster aquaculture in Australia with a breeding program located in Tasmania; hatchery and nursery phases and grow-out trials in ponds at a former prawn farm in northern Queensland, and further grow-out trials in sea cages in the Kimberley. The company suggests that the Australian farmed industry could eventually produce 1000 tonnes annually.

3.0 Summary of international trade

3.1 Patterns of trade in part reflect seasonal availability and logistical considerations

Seasonal availability and market demand, and logistical constraints inform the observed patterns of trade, particularly for exporting countries such as Australia which focus heavily on the trade in live lobster. Lobsters can be kept alive, out of water, in a high humidity environment for well over 24 hours (depending on the species and the method of export packing & handling). Current experience is that once handling and transport time increases beyond 24 hours, the mortality risk increases and can increase significantly as this time increases. However, ongoing R&D means that transport protocols continue to evolve and improve, so this “safe” time horizon continues to extend. Countries/producers with better management and production systems and access to reliable transport and processing systems to manage exports/imports are best placed to deliver live product to export markets in good condition. These factors impact the pattern of global trade as presented below. Caribbean lobster producers are most notably affected by some of these issues. Depending on their locations they have access to advanced transport systems out of the US (Florida) or are restricted to shipping frozen lobster due to a lack of suitable handling and air freight options. Seasonal trade flows are particularly noticeable for Vietnamese spiny lobster imported into China (see section 5.3)

3.2 Canada and the US are the most significant exporters (including for extra-regional trade)

Given the global dominance of American lobster production, it is not surprising that Canada and the United States are far and away the largest exporters of lobster in the world. However, a significant proportion of their respective exports are imports into the other (rather than exports to destinations outside of the region). This pattern of trade reflects the significant size and preferences of the respective domestic markets, as well as certain seasonal and logistical factors. In gross terms, the United States and Canada are the largest and third largest importers of lobster in the world - but most of these imports come from their neighbouring country.

In 2023;

- Lobster exports from Canada to USA were 18,736 tonnes of live lobster, and 13,452 tonnes of frozen lobster
- Lobster exports from USA to Canada were 15,409 tonnes of live lobster, and 485 tonnes of frozen lobster

Global trade from Canada plus USA combined in 2023 was 109,521 tonnes of live and frozen lobster, of which 48,082 tonnes with an export value of USD1.08 billion was traded between the two neighbours (as outlined above) and 61,439 tonnes with an export value of USD1.10 billion exported to the rest of the world. As the highest volume exporters, changes in American lobster production and export conditions affect lobster markets worldwide.

Even excluding intra-regional trade, Northern America is still the world’s main origin for the international trade in lobster. Extra-regional exports increased as production increased during late-2000s and early-2010s, with greater exports to China being of particular note. Other major destinations include the rest of North-East Asia as well as Europe.

3.3 Europe is a minor producer and net importer of lobster

Relatively little European lobster production finds its way to markets outside of the general region of production. That having been said, there is considerable international trade in such within Europe. Lobster supplies in Europe are bolstered by significant large volumes of imports of American lobster and spiny lobster. Since the entry into force, in late-2017, of the Comprehensive Economic and Trade Agreement between Canada and Europe, most of the American lobster imports have been from Canada rather than the United States.

Lobster imports are dominated by clawed lobster; with live imports around 12,000 to 16,000 tonnes per year, and frozen imports around 7,000 tonnes per year.

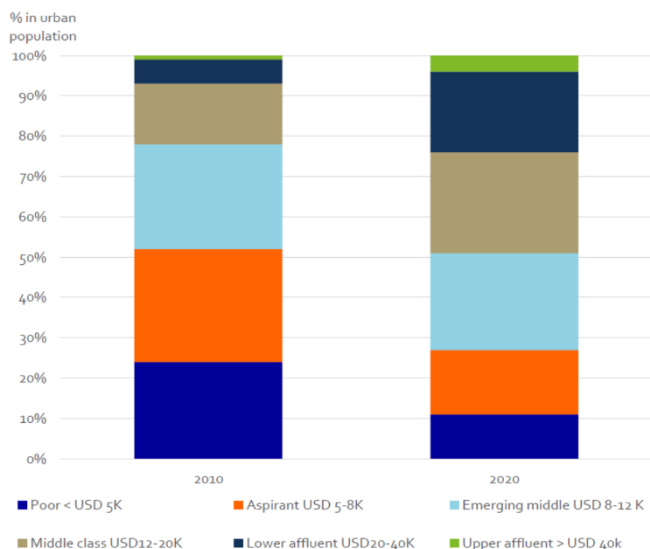
Of the spiny lobster imported into Europe, typical live volumes are around 1,000 - 1,500 tonnes per year mostly sourced from African or countries within Europe, while frozen volumes in the past decade show relatively large fluctuations around the 4,000 to 8,000 tonne levels, mostly sourced from Africa, Europe and Northern and Latin America. The relatively small volume of live spiny lobster imports from areas outside Europe command relatively low unit prices, while the frozen market appears to be reasonably price sensitive. These factors indicate that European markets have relatively limited potential to absorb significant volumes of high-value western rock lobster.

3.4 China is the major destination for extra-regional trade

3.4.1 Demographic factors and economic development have driven an increase in demand

As urban populations and incomes rise, China has emerged as the major destination for the international trade in live lobster over the last decade. Chinese consumers, particularly the relatively affluent urban on the east coast, regard live imported seafood as luxury social symbols. The size of this demographic is increasing rapidly.

Figure 5: China urban population by income group, 2010 and 2020

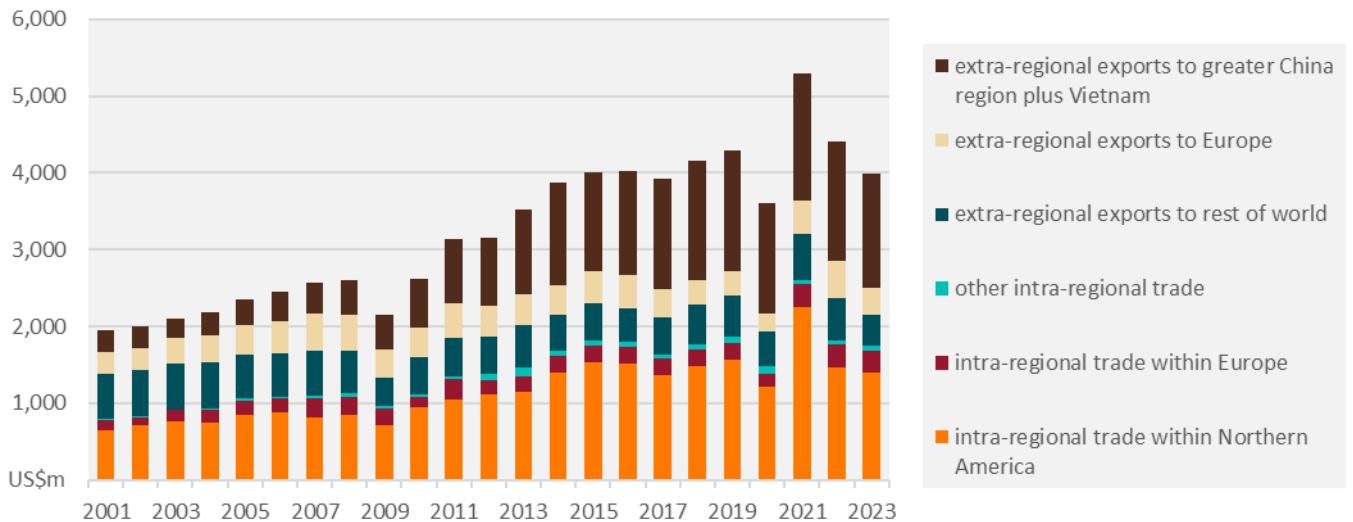


Source: Nikolik 2019

3.4.2 China has accounted for most of the growth in the international trade in lobster over the past decade

Demand in China has accounted for most of the growth in the international trade in lobster over the past decade. The prominence of China is particularly obvious if intra-regional trade is excluded (for example, the trade in American lobster between Canada and the United States). China's market dominance is even more notable with specific regard to the international trade in live spiny lobster.

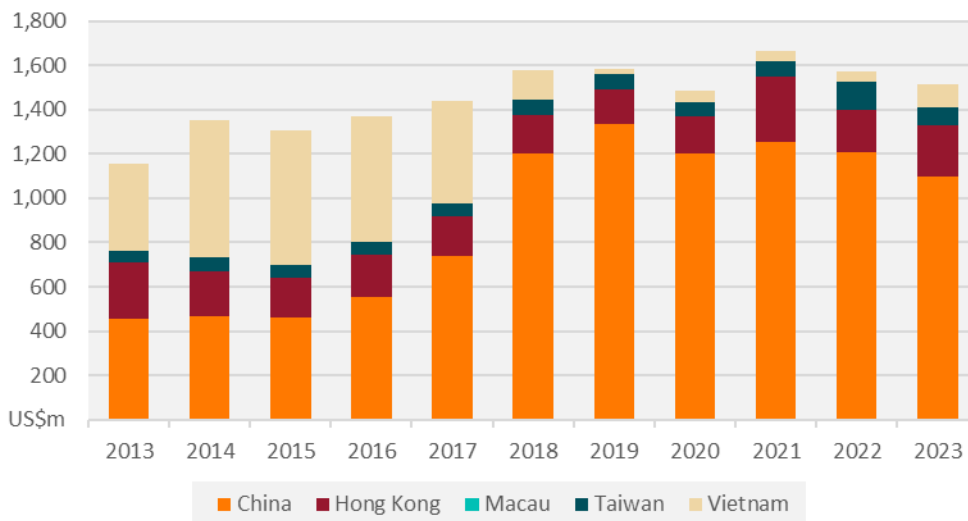
Figure 6: Intra-regional trade and extra-regional exports, by value, 2002–2023



Source: ABS; GACC; ITC Trade Map; Stats NZ; UN Comtrade

The implementation of preferential trade agreements with major trading partners (including New Zealand and Australia) has seen an increase in direct trade with China (and a decline in the so called ‘grey’ trade through Vietnam, Hong Kong and potentially other jurisdictions).

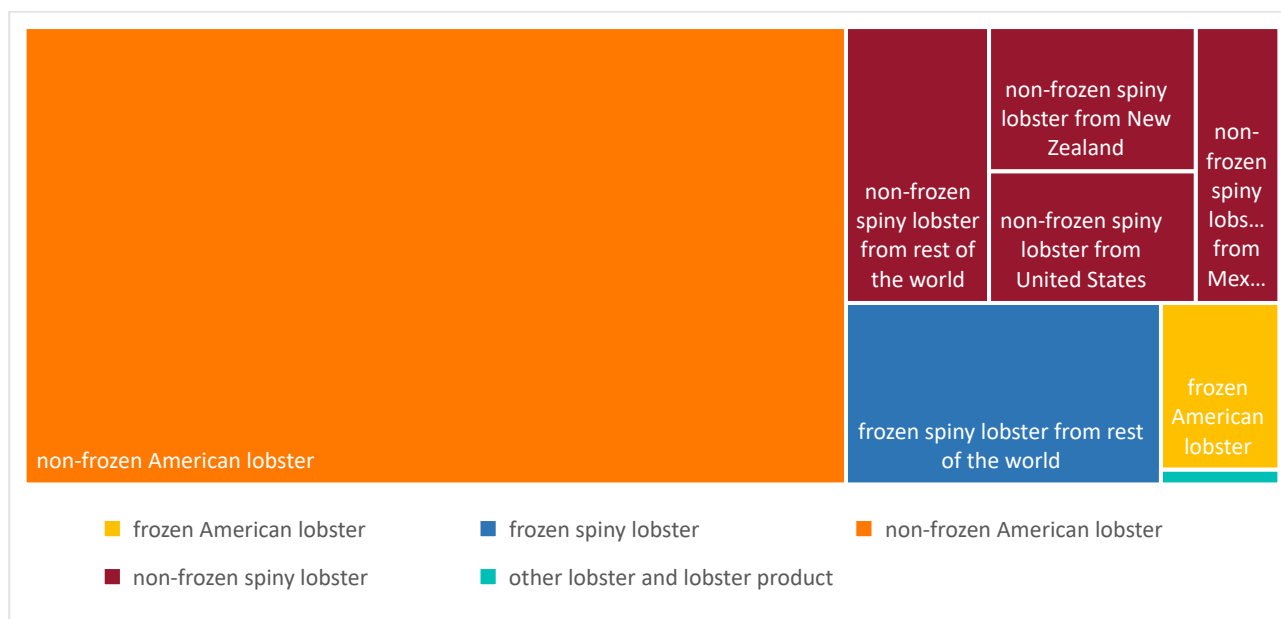
Figure 7: Lobster exports from any origin to the greater China region plus Vietnam, 2013–2023



Source: GACC; UN Comtrade; WRL analysis

The Chinese market shows a strong cultural preference for live lobster rather than frozen.

Figure 8: China imports of lobster, value by product type and origin, 2023



Source: GACC

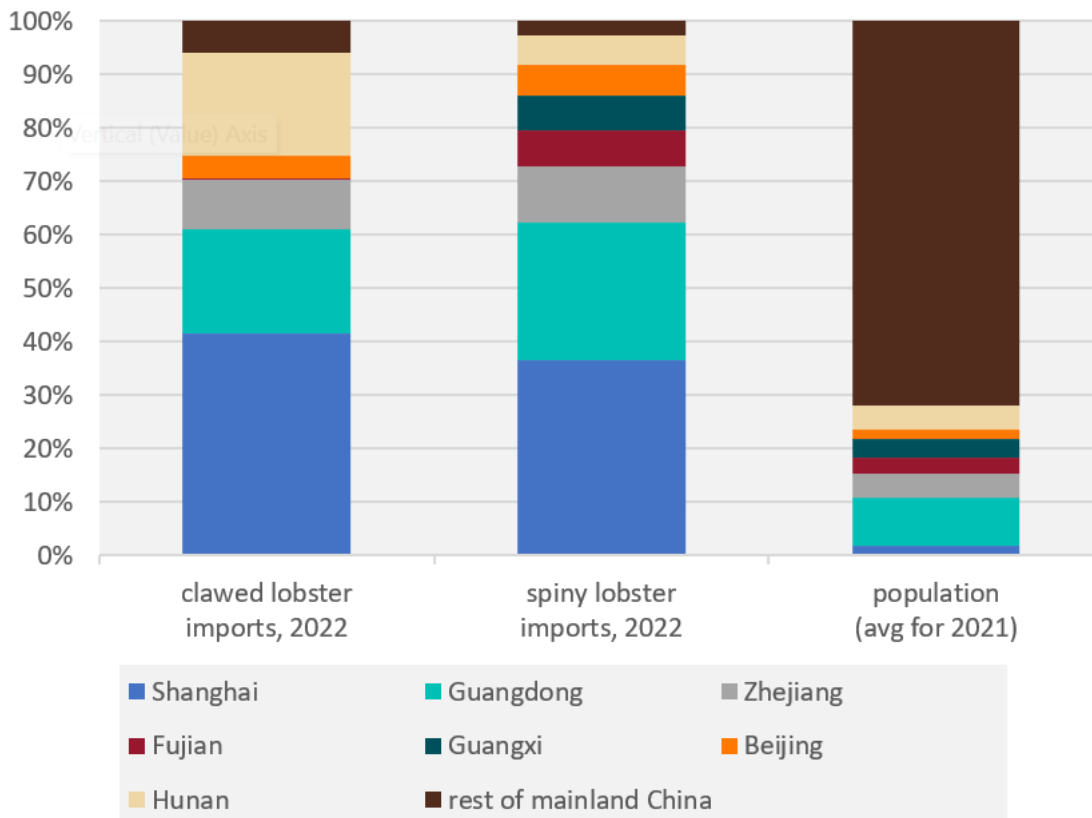
3.4.3 The China market is really many markets

China is the market of choice for live/fresh/chilled spiny lobster because it is the largest and highest-paying option. That is not to suggest, however, that China is a single, homogenous market - China is in fact a collection of peoples with considerable cultural and economic diversity. Regarding the demand for lobster, there may be differing preferences in respect of price point, size, appearance, taste, cooking style, packaging, and origin.

Chinese demand for seafood has historically come from the coastal regions of the country. Western Rock Lobster has traditionally flowed into China via the southern borders with Hong Kong and Vietnam, and in turn the market for Western Rock Lobster has been centred around the south-eastern region of China—particularly the provinces of Guangdong and Fujian. Other major centres of demand for imported lobster are the municipalities of Beijing and Shanghai, though traditionally these have been more oriented towards other spiny lobster species (e.g. Southern/red rock lobster).

Growing wealth in inland cities and supply chain improvements are gradually resulting in increased demand for seafood in those regions.

Figure 9: Value of lobster imports for China, and population, by administrative division, 2022



Notes: Note that location data are based on the place of registration of the consignee, rather than customs point of entry or the final destination. Data do not include Hong Kong or Macau.

Source: China NBS; GACC

Figure 10: Map of China with administrative divisions



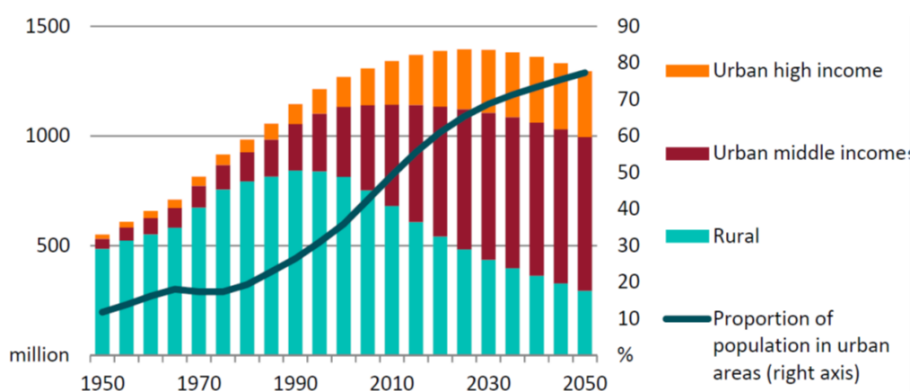
Source: Wikipedia (https://en.wikipedia.org/wiki/Administrative_divisions_of_China)

3.4.4 The long-term outlook for demand in China is generally positive, structural challenges notwithstanding

The long-term outlook for lobster demand in China is generally positive, despite some structural challenges that lie ahead. It is expected that urban populations will continue to increase over the coming decades, despite the fact that total population (i.e. including the rural population) is projected to start declining from around 2030. The prospects for economic growth and rising incomes are similarly positive. Demand for lobster and other premium products should continue to increase over the coming decades, albeit at a slower rate than has been the case over the past decade. It must also be noted that the economy of China is facing several structural challenges, including: a declining working population (with a changing age structure of population); managing the continued shift away from an export-focused towards a consumption-based economy; and facing certain macro policy challenges including the heavily geared real estate and construction industries. These matters represent significant downside risks to the longer-term outlook for lobster demand in China.

China's macroeconomic policies over recent years have been characterised by a reluctance to engage in large-scale economic stimulus to consumers. The Chinese government appeared to have entered an "austerity" phase where more conspicuous consumption, particularly on foreign luxuries, is discouraged. However, after a series of leading indicators showing a softening economy a raft of stimulus measures were announced in September 2024, including a reduction in central bank lending rates, reduced bank reserve requirements and refinancing tools for businesses to buy back their own shares. These stimuli are among the largest announced since the Global Financial Crisis in 2008 and have given markets some assurance that saving the economy is a key element of leadership's vision.

Figure 11: China urban and rural population and income groups, projection to 2050



Source: Hamshere et al. 2014

3.4.5 Increasing competition from other high value crustaceans

Markets never stand still, and the king crab sector has emerged as a significant competitor for market share within the high value crustacean market. While South Korea and China have been the main consumers of significant volumes of live Russian snow and red king crab, this market concentration can be expected to increase as economic and trade sanctions on Russian businesses are enacted by US, Europe and Japan. The momentum of this increasingly high volume, high value trade is thus expected to swing further towards China, South Korea and other countries that have not imposed such sanctions, with an increased focus on live product to suit those market preferences.

In 2023, China imported:

- 25,684 tonnes of frozen crab worth USD250 million
 - of which 10,773 tonnes of crab from Russia worth USD120 million
- 92,935 tonnes of live crab worth USD1,633 million
 - Of which 30,104 tonnes of crab from Russia worth USD978 million

These figures clearly show that the Russian product is able to command high prices (USD32/kg in 2023, which was around USD8/kg more than live American lobster) on very large volumes.

A danger expressed by some marketers has been that the absence of Australian lobster from the Chinese market might prejudice the speed of re-uptake of Australian product if and when direct trade should resume.

Noting that the product has apparently entered the market in significant volumes through grey channels, these fears would appear to be unfounded. NZ marketers who remain active participants in the market have the opinion that the continued presence of NZ SRL in the market is keeping the Antipodean product visible and desirable to consumers.

3.5 The Americas is a significant source of spiny lobster from international markets

Overall production volumes of spiny lobster in the Americas have been broadly steady over recent years, and there is probably little opportunity for further exploitation of the constituent fisheries. Consistent with this, export volumes have been largely unchanged in absolute terms and have declined as a share of global trade, and this is likely to remain the case in future years.

The general reputation of Caribbean spiny lobster on international markets is as strong, sweet lobster that is reasonably priced and widely available. In particular, the Americas is the most significant source of frozen spiny lobster for international markets. However, there are a large number of producers and options in this market, and competition can tend to be on the basis of price rather than consistent preferences for a particular origin.

While the higher returns available for live exports are obviously attractive, and Florida lobster in particular has had some success with live trade, many producers in the Americas have historically been constrained by a range of production, processing, transport and regulatory factors. Time in the air is not necessarily the main limiting factor – particularly significant in many cases is the lack of reliable access to the intermediary storage and transport infrastructure necessary for delivering live lobster to distant markets in good condition. Depending on their locations they have access to advanced transport systems out of the US (Florida) or are restricted to shipping frozen lobster due to a lack of suitable handling and air freight options (e.g. Brazil). More direct flights, and increasingly coordinated supply chains, are likely to enhance the viability of live trade into China. These matters justify ongoing monitoring, especially while the now long-standing disruption in the China–Australia trade relationship provides a high-profit incentive for Caribbean and other competitors to invest in infrastructure and R&D to help grow their share of the live spiny lobster market in China.

3.6 Trade for other spiny lobster producers tends to be more concentrated

Taken together, Australia and New Zealand exports represented about 20% of the total value of global lobster trade in the years before COVID-19. Australian and New Zealand trade swung overwhelmingly towards live exports to China the decade to 2019 as no other market has been able to absorb the volume at the attractive prices commanded in China. This necessarily entailed reducing the volumes exported to other traditional markets, notably Japan, Taiwan and the USA. Concurrently, free trade agreements saw the China trade become more direct, rather than relying on trans-shipment through Vietnam, Hong Kong or Macau. Reliance on a single market entails some risk, the current trade hiatus for Australian lobster into China bringing this into a stark light. One mitigation strategy for Australian lobster appears to be to diversify the trade, which would necessarily encompass some element of re-entering previously significant markets. It is important to realise, though, that diversification is a form of self-insurance that comes with its own set of costs. These matters are discussed in more detail in Chapter 5.

Vietnamese production and trade has been difficult to quantify in the past, but the aftermath of COVID-19 seems to have brought about tighter border controls with China and concomitant customs information collection; statistics show significant trade from Vietnam into China, particularly live trade in 2020 and in 2022. It is thought that a significant proportion is aquaculture product raised in sea-cages along the Vietnamese coast.

After Brazil and Nicaragua (see the Americas section above), South Africa is the next most significant exporting country by trade value, at about 1.5% of total global trade value. The South African trade has trended towards a live trade, especially into China. Trade from other African countries together is less than South Africa's exports.

4.0 Australia and New Zealand rock lobster

Australian and New Zealand rock lobster represent only a relatively small portion of global supply but are major sources of supply in the increasingly significant and competitive market for live lobster in China, and typically attract a premium price. As such, Australian and New Zealand rock lobster production and trade is of global significance. Looking inwards, the Antipodean rock lobster fisheries are among the most valuable wild-catch fisheries in Australia and New Zealand, and support many regional communities.

4.1 Western Rock Lobster accounts for the majority of production

A diverse range of rock lobster species exist in the waters of Australia and New Zealand but only four species (distributed across eight different management jurisdictions) support significant fisheries:

- Western Rock Lobster (*Panulirus cygnus*), caught along the west coast of Western Australia;
- Southern/red rock lobster (*Jasus edwardsii*), caught predominantly along the coastline of (south-eastern) South Australia, Victoria, Tasmania, and New Zealand;
- Eastern/packhorse rock lobster (*Sagmariasus verreauxi*), caught mostly along the coasts of New South Wales and (northern) New Zealand; and,
- Ornate Rock Lobster (*Panulirus ornatus*), caught mainly in the Torres Strait Ornate Rock Lobster Fishery and northern Queensland).

The production of Western Rock Lobster, a species endemic to Western Australia, accounts for the majority of the volume of Australian lobster production. Next most significant is Southern Rock Lobster, while Eastern and Ornate Rock Lobster catches are relatively minor by comparison.

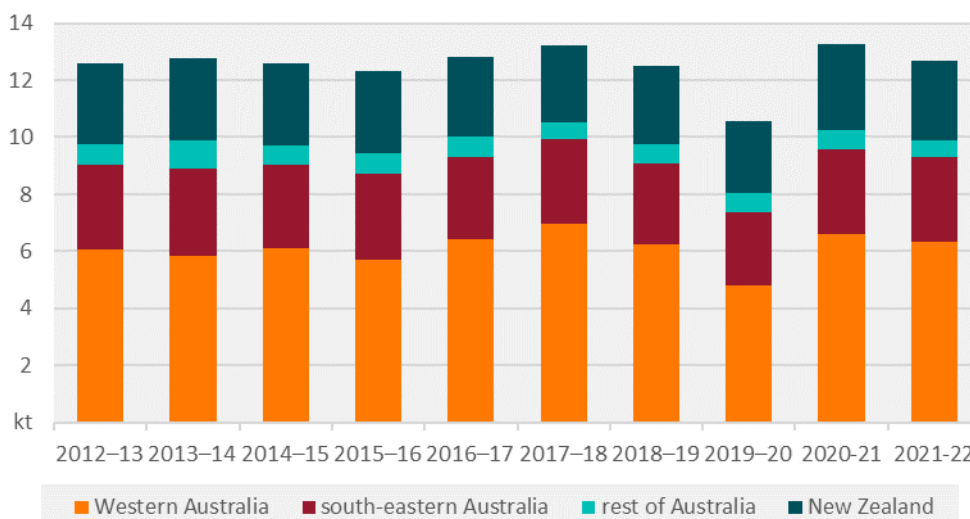
Despite typically trading at a discount to most other commercial species of Australian lobster, the productivity of the Western Rock Lobster fishery has translated into Western Australia producing the majority of industry value in almost all years for the past decade.

The timing of commercial catches in the Western Rock Lobster fishery reflects the combined influences of seasonal patterns in catchability and demand. Periods of high catchability include the 'whites' phase of the fishery (December/January), as well as March–April, when large numbers of undersize lobsters moult into legal size and are relatively catchable. Periods of high demand normally include the Chinese New Year celebrations (January/February) and other 'lucky' Chinese days/weeks. Catches are generally lower from June, reflecting factors including lower demand in China, more rough weather days, lower catchability, and many females starting to mate and thus becoming illegal for capture.

Under normal circumstances, the timing of commercial catches reflects the combined influences of seasonal patterns in catchability and demand, albeit with some variability in timing between years and between zones.

Production from the Australian and New Zealand rock lobster fisheries has been broadly steady over recent years, perhaps owing to the widespread implementation of quota limits in place of effort controls. Prices over recent years have continued to be at levels higher than was the case of a decade or more ago. The average landed price for Australian lobster has increased significantly, from approximately A\$24–32 per kilogram in the period 2004–2008 to over A\$60 per kilogram in the period 2014–2019, with New Zealand lobster achieving a premium over Australian Southern and Western Rock Lobster. Higher prices continued to be achieved by New Zealand rock lobster after trade disruption interrupted the direct trade of Australian lobster to China – while Australian prices have reverted to levels almost approximating those experienced in the 2004–2008 period.

Figure 12: Lobster production in Australia and New Zealand, by state/country, 2012–13 to 2021-22



Note: Data for Australia and New Zealand are based on annual periods with balance dates of 30 June and 31 March, respectively.
Sources: ABARES; Fisheries New Zealand

4.2 There are significant differences but also interdependencies between fisheries

There is a high degree of price integration in domestic lobster prices. Southern Rock Lobster and Eastern Rock Lobster production in South Australia, Tasmania, Victoria and New South Wales rarely show price variances between sources of more than a few dollars per kilogram. The Western Rock Lobster consistently trades domestically at A\$10–15 per kilogram discount to these other Australian lobster products.

Eastern Rock Lobster is generally not marketed to China because of colour disadvantage in that market, and as a result Eastern Rock Lobster tends to achieve higher domestic market prices than export prices.

The pricing trends, correlations and discrepancies among Australian lobster product are largely a reflection of international export prices worked back up the supply chain.

A number of factors in export markets are understood to contribute to this price differentiation between Australian lobster product, including:

- Different levels of engagement with the market;
- The fact that Southern Rock Lobster (and notably New Zealand Southern Rock Lobster) entered the China-direct 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 China markets; and
- Anecdotally, some provincial seafood markets in China exhibit a strong and persistent preference for a particular species.

4.3 Industry prosperity has been driven in recent years by live exports to China

4.3.1 China is the largest and highest-paying market

China is the market of choice for live lobster from Australia and New Zealand. This is because China is the largest and highest-paying market. Historically, relatively few lobsters are sold in other forms or to other markets, given the differences in price and margin.

For much of recent history the traditional focus of the Western Australian trade was markets in Asia including Taiwan and Japan. However, the emergence of China as a global economy with increasing consumer purchasing power had a major impact on trade patterns for lobster. Locally the emergence of China as a premium export market for live lobster resulted in virtually all exports of Western Rock Lobster being sold as live product to China. This followed, with time lags, a similar pattern already evident for Southern Rock Lobster caught in the Eastern States and New Zealand.

The vast majority of Australian lobster exports were live lobster shipped direct to distribution centres in China and Hong Kong. Historically, Australian lobster exports to China were mainly distributed through Vietnam and Hong Kong. However, with the advent of the China–Australia Free Trade Agreement, China became the main export destination and distribution centre. But in late 2020, a hiatus in the trade occurred – see Section 5 for discussion of these events.

4.3.2 Preferential trade agreements have supported increases in direct trade with China

The staged reduction (starting late-2015) and then elimination (from 1 January 2019) of tariffs on Australian lobster, under the China–Australia Free Trade Agreement, has resulted in a significant increase of direct trade into China. Lobster from Australia is now treated consistently with that from New Zealand, in not being subject to a tariff.

The NZ–China FTA signed in 2008 reduced tariffs such that all New Zealand exports of seafood products were tariff free by 2012. This resulted in more direct imports into China—by 2016 China imported 99 per cent of New Zealand’s rock lobster exports. 2019 upgrades to that FTA include a new commitment to expedite customs clearance to six hours for perishable goods (such as fresh seafood, including rock lobster and salmon). This could be expected to enhance supply chain integrity for New Zealand exporters of fresh high value food products that need to get to market quickly.

4.4 The importance of air freight capacity for export markets

Airfreighting seafood reduces time in transit, which is important for preserving the quality of fresh and live seafood and hence maximising returns on the product. Australia's live rock lobster export industry is a leading example of the importance of airfreight in Australia's seafood export industry. The establishment of live trade required the industry to develop solutions to managing lobsters from the point of capture to the point of final delivery to the customer. This has involved considerable investments in building holding infrastructure close to airports and developing efficient air transport packaging and delivery logistics.

The importance of airfreight capacity and availability became particularly apparent during the COVID-19 pandemic. Constraints to air freight capacity rapidly became apparent and freight rates escalated significantly when passenger flights were curtailed as travel restrictions came into effect. With the reduction in scheduled flights, exporters became more reliant on dedicated freight charter flights to shift cargo. While the air freight situation has alleviated considerably, freight rates remain higher, with less flights per week to key export destinations, than prior to the pandemic.

The effects of COVID-19 and China trade disruptions, covered in more detail in Section 5, have meant that more Australian lobster was sold into the domestic market in 2020, and following years than in the years previous. Nevertheless, despite increased consumption of local product in Australia there are still significant volumes of lobster imported (836 tonnes in 2022 and 829 tonnes in 2023 - a significant volume albeit around 30% less than the average 1200 tonnes per year observed between 2013 and 2018). Major sources for imported lobster include Canada, the United States, Brazil, and the Bahamas. The overwhelming majority of imports are of frozen product, including both whole lobster and lobster tails.

While lobster imports include some small amounts of re-exports (i.e. lobster transiting Australia on the way to other markets, such as the case of lobster from the Papua New Guinea part of the Torres Strait Rock Lobster Fishery transiting Cairns airport), the volume of re-exports in 2023 was minimal – this product has largely found another way to market, and the vast majority of imports are destined for domestic consumption.

Lobster consumption within Australian is further supported by recreational catches and other non-commercial fishing, although lobster taken under such arrangements are not readily available to all in the same manner as a commercially caught lobster (whether domestic or imported).

That most of the commercial lobster catch in Australia (and New Zealand) is exported as a premium product while a significant amount of lower-valued lobster is imported from elsewhere in the world is consistent with economic principles. The patterns of trade and consumption reflect differing consumer preferences around the world.⁵

The general consistency of observed market outcomes with economic principles does not necessarily mean that there are no imperfections in markets or that there are no impediments or obstacles to the local supply and consumption of lobster. Increasing the availability and accessibility of Western Rock Lobster for local consumption is a worthwhile objective, shared by industry and the WA Government. In support of such, initiatives such as the Local Lobster Program (2016–2020) and then the Back of Boat lobster sales mechanism (introduced 2020) have permitted fishers to sell directly to the public, and to local restaurants and other businesses under certain conditions.⁶

⁵ Of course, the observed patterns of trade and consumption are also influenced by supply dynamics and logistical/trade matters.

⁶ It is of note that the cheapest Western Rock Lobster (to the consumer) will usually be that which has been sold directly from the back of the boat; and some customers may consider there to be value in the experience of visiting a fishing boat harbour and interacting with a fisher.

5.0 COVID-19, trade disruption and the Western Rock Lobster industry

5.1 COVID-19

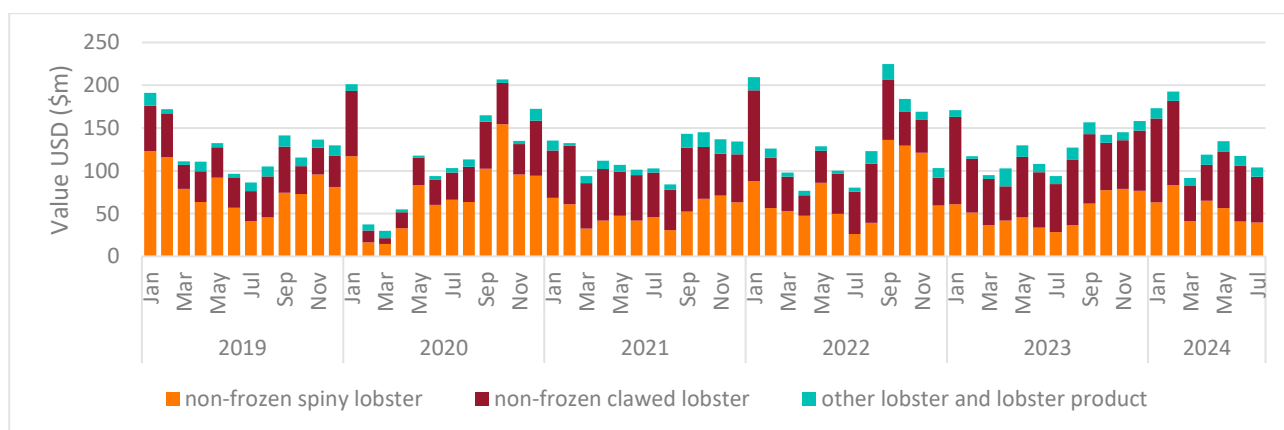
In recognition of the accelerating spread of COVID-19 in China, authorities introduced a range of travel and other restrictions during January 2020, and actively discouraged the large gatherings traditionally held during the Chinese New Year period. As a consequence of these measures, and the general apprehension among the populace, there was an extraordinary reduction in the demand for high-value seafood such as live Australian rock lobster (during what would normally be a high-demand period). Imports of Western Rock Lobster and many other premium seafoods had effectively ceased by the final week of January 2020.

In response to decreased demand in China and elsewhere, global lobster production slowed significantly, and effectively came to a halt for a time in many quota-based fisheries, especially those that focus on trade in live lobster, such as is the case with Western Rock Lobster. Notably, the cessation of fishing for Western Rock Lobster was the first time that such an outcome had been driven by industry rather than mandated by government.

While management of the pandemic brought China's economy to a standstill during the first couple of months of the outbreak, the severity of the mitigation measures was possibly justified given that relatively rapid recovery of economic activity once restrictions started to ease.

Many sectors of the economy reached or surpassed their pre-outbreak volumes of activity within a few months. In most respects, the economic recovery through to late 2022 surprised on the upside. However, since the abandonment of China's COVID-Zero policy in late 2022, consumer confidence has been slow to recover. Economic news from China in 2024 suggests significant economic headwinds are ongoing: a reluctance from government to trigger large-scale stimulus packages, a heavily indebted and slowing real estate sector, reported high youth unemployment and relatively subdued consumer demand.

Figure 13: China imports of lobster, value by product type, monthly



Source: GACC

5.2 Disruption of trade with China

While the COVID (and post-COVID) story continued to unfold, towards the end of 2020 a compounding event impacted on Australian lobster exports. During the final days of October 2020, many shipments of live Australian rock lobster became subject to significant delays in the customs clearance process. Rates of inspection were reported to have been increased to (at least) 50 per cent of consignments, and there was also some uncertainty regarding the nature of testing being applied. Information available at the time suggested that elements of the new process related to health and compliance checks, with subsequent speculation

relating to concerns about trace amounts of metals within the rock lobster. Notably, the new measures were reported to only be applying to live rock lobster from Australia; lobster from other origins, and fresh and frozen Australian lobster were not affected.

The delays in customs clearance for those consignments arriving during the final days of October 2020 raised the very real prospect of lobster dying in transit, or of quality being otherwise adversely affected. The risk and uncertainty that this created had an immediate effect on both exporters and importers, and Australian lobster fisheries largely ceased operations at the beginning of November. The hope at the time was that clarification and import permits from authorities in China would be forthcoming and that the live trade could then resume with the necessary confidence. Unfortunately, over two years later this is still not the case.

Australia lobster fishing resumed in mid-November 2020, but with prices reflecting the new reality of lobster marketing and trading selling into alternative markets (both international and domestic). International trade data in the almost three years to date demonstrates a significant decline in Australian lobster exports, with the cessation in direct shipments of live lobster to China being only partially offset by increased exports reported for destinations such as Hong Kong, Taiwan, Vietnam, Thailand and South Korea. The fact that historically large volumes of Australian lobster were diverted to Australian consumers, concentrated over the high-catch summer periods since 2020, demonstrate the importance, and the limitations, of the domestic market at a time of difficult international trading and logistics conditions.

Trade and production statistics show that apart from periods of peak domestic demand, almost all Western Rock Lobster production was traded internationally from that time until the time of writing, with significant volumes making their way onto the domestic market. A similar pattern was apparent with Southern and Ornate Rock Lobster exports. While there are indications that those marketers and exporters managed, in a relatively short time, to create alternative export channels capable of absorbing significant volumes of lobster, the major proportion of Western Australian trade (and this also applies to Southern Rock Lobster trade) has been directed to China-adjacent markets, while Queensland diverted almost all its live trade to Thailand. Numerous articles in the international press suggest that a significant proportion of this Australian product has made its way into China via grey or other trade channels. The additional supply-chain complexities, costs and constraints of this trade act to depress export prices.

Additionally, of the western rock lobster that has been exported in recent years, a significant proportion was frozen, either whole or as tails.

Figure 14: Western rock lobster processing, cumulative percentages by Year, Tails

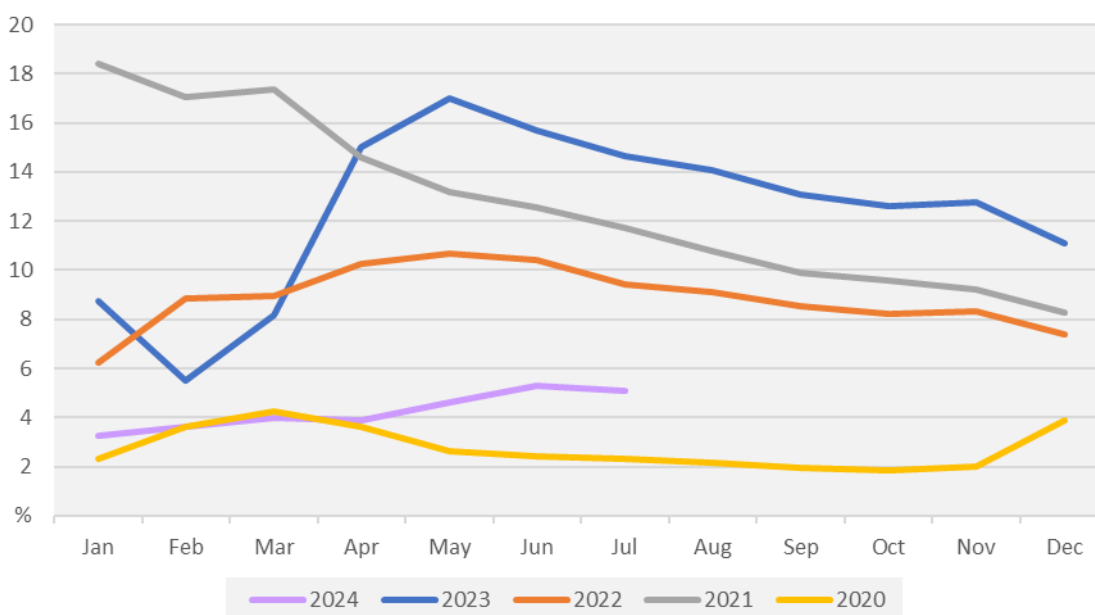
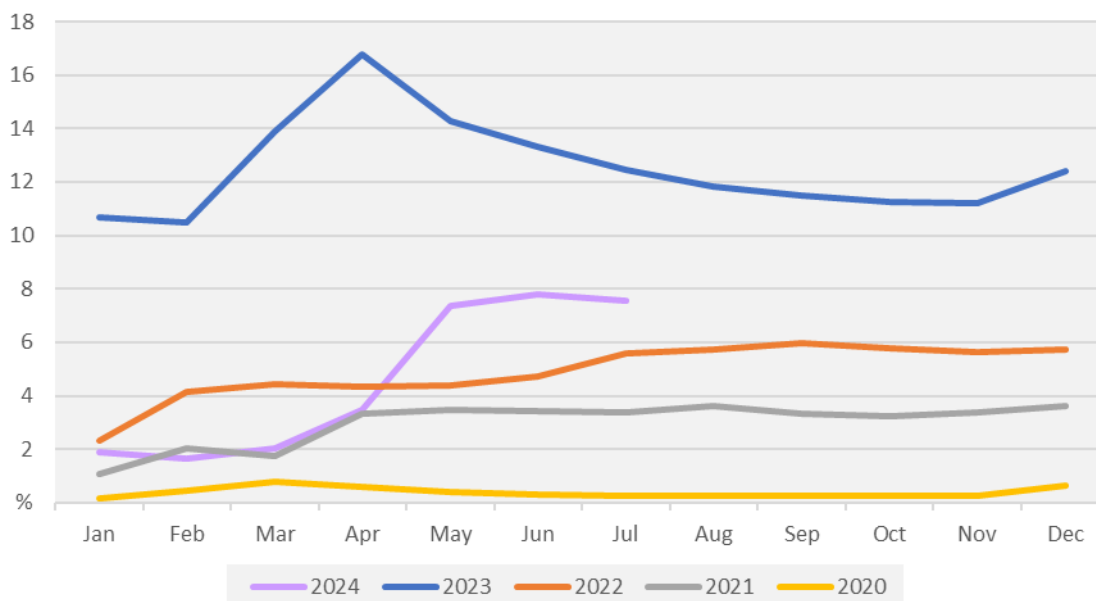


Figure 15: Western rock lobster processing, cumulative percentages by Year, Whole Raw



The charts show that 2023 saw a very high volumes of frozen product produced for the export market. The year to date in 2024 indicates that the tail market is not absorbing the volumes of recent years, but whole raw product volumes appear to be reasonably high.

The combination of more exports being sent frozen, and more product sold into domestic markets, has the combined effect of reducing overall average beach prices. The additional impost of ongoing higher supply chain costs further impacted the beach prices achieved by fishers through 2023 and into 2024. Assuming the continued absence of the direct market to China, this contributes to a subdued outlook for beach prices in the medium term.

Of all the industries in Australia that saw their market access reduced, none was as reliant on trade with China as lobster. It has taken the collective effort of Australian and Chinese businesses over many decades to create a positive, mutually-respectful and beneficial trading relationship. It is in best interests of all concerned that this trade resume. Demand for Australian rock lobster is still evident in China, as evidenced by the quantities of whole frozen and fresh chilled product imported during 2023, a record 672 tonnes. Indeed, demand for Antipodean rock lobster remains strong, as evidenced by the high prices commanded by New Zealand product in the market), and industry remains fully committed to supplying existing and new customers in China.

5.3 Changes in trade flows into China

Live clawed lobster remains the highest volume lobster category imported into China (2023 imports of 33,187 tonnes being 51% of total volume with a total value of USD790 million). 2023 figures showed Canadian dominance continue, (25,191 tonnes versus USA 7,905 tonnes) with unit prices lower at USD24/kg.

The market for live clawed lobster into China is dominated by Canada, typically accounting for four times the volume from the USA. Unit prices are very similar for both origins. USA volumes have increased from the low point of 2019, driven by a tense trade situation under the then-President, but have not recovered to the levels observed in 2017 and earlier when USA and Canada exports to China were essentially on par.

The absence of direct-traded Australian **live spiny** rock lobster from the China market has resulted in trade diversion to the benefit of international competitors who are able to supply the market that remains the largest live rock lobster importer in the world.

The overall volume of live spiny lobster imports through official channels into China was similar in 2019 (pre-COVID) and 2022 (17,030 tonnes 2019; versus 16,930 tonnes 2022).

However, 2023 saw only 10,550 tonnes of live spiny lobster imported, a similar level to that in 2021, 10,773 tonnes. The common factor in 2021 and 2023 was large reductions in imports from Vietnam.

The emergence of large volumes of product from Vietnam is worth particular attention. China's GACC reported that imports of live spiny lobster from Vietnam increased more than ten-fold in 2020, to 6,452 tonnes, representing 32% of all live rock lobster imports in China that year – making Vietnam the largest supplier of rock lobster into China. China's imports of live spiny lobster from Vietnam reduced significantly in 2021 to 1,063 tonnes for the calendar year, perhaps relating to production issues, but rebounded to 7,979 tonnes in 2022 (representing 47% of all live spiny lobster imports by volume, and again placing Vietnam as the largest rock lobster supplier into China). Import unit prices in 2022 for Vietnamese live spiny lobster averaged USD43/kg – a marked increase over 2020, perhaps indicating an increasing level of market acceptance of the product. Volumes decreased again markedly in 2023 but have rebounded in 2024.

Table: Imports of live spiny lobster into China from Vietnam (as recorded by GACC)

Year	2020	2021	2022	2023	2024 Year to July
tonnes	6,451	1,063	7,979	270	2,944

The assumption is that much of the Vietnamese trade is farmed (aquacultured) spiny lobster, given the seasonality of the trade – concentrated in the months May to December in both 2020 and March to December in 2022. The Vietnamese lobster aquaculture industry relies on wild-caught pueruli (juvenile lobsters) with a large percentage sourced from waters around Indonesia and exported to Vietnam by unofficial and unregulated channels. This represents a potential biosecurity risk given pueruli may be exposed to excessive stresses during transport, which can lead to expression of endemic viruses such as white spot. Furthermore, growout operations in Vietnam are typically located in relatively closed embayments with high densities of growout rafts and a high reliance on wild-caught feed, again leading to heightened risks of disease – which manifests in high degrees of production volatility.

With an average unit price of USD 26/kg in 2020 this Vietnamese product represented some of the lowest valued product imported into China. Unit prices began to show an upward trajectory towards the end of 2020 (as did prices for lobster from other origins), contemporaneous with the absence of Australian direct imports. Unit prices averaged USD43/kg in 2022 and USD42/kg in 2023.

GACC statistics also show an uptick in live imports from Indonesia year to date (July 2024) with 727 tonnes imported. It is not known whether this product is wild caught or aquacultured.

Imports to China from Thailand increased significantly from the final quarter of 2020, from 2 tonnes in 2018 and 4 tonnes in 2019, to 428 tonnes in 2021 and 484 tonnes in 2022, but fell to 297 tonnes in 2023 with unit prices averaging USD48/kg.

With Australia absent from the direct live trade, certain countries have been able to increase their share of market, and/or unit price, for live lobster. Key winners in this regard include:

Mexico – live spiny lobster volume into China generally comparable to pre-COVID in the range 1,600 – 1,900 tonnes per year, however an uplift in volume to a record 2,032 tonnes in 2023. Prices increasing from USD47/kg pre-COVID, to USD67/kg in 2021, USD65/kg in 2022, USD61/kg in 2023.

To note, a gradual decline in import prices from 2021 to 2022 to 2023 was experienced by lobster from many origins.

USA - live spiny lobster volume into China comparable to pre-COVID in the range 1,200 – 1,700 tonnes per year, however a significant uplift in volume in 2023 to 2,398 tonnes, together with prices increasing from USD22/kg pre-COVID, to USD48/kg in 2021, USD44/kg in 2022, USD41/kg in 2023. Given that no other nation bordering the Caribbean, apart from Mexico, is a significant source of live spiny lobster imports into China, there is a possibility that this trade may include Caribbean sourced product trans-shipped through the USA.

Additionally, imports into China from various countries in 2023 were significantly higher than 2018-2019 average volumes with volumes tending to rise year-on-year (noting that these are on smaller base volumes compared to the major players):

Portugal - 402 tonnes

Mauritania - 278 tonnes

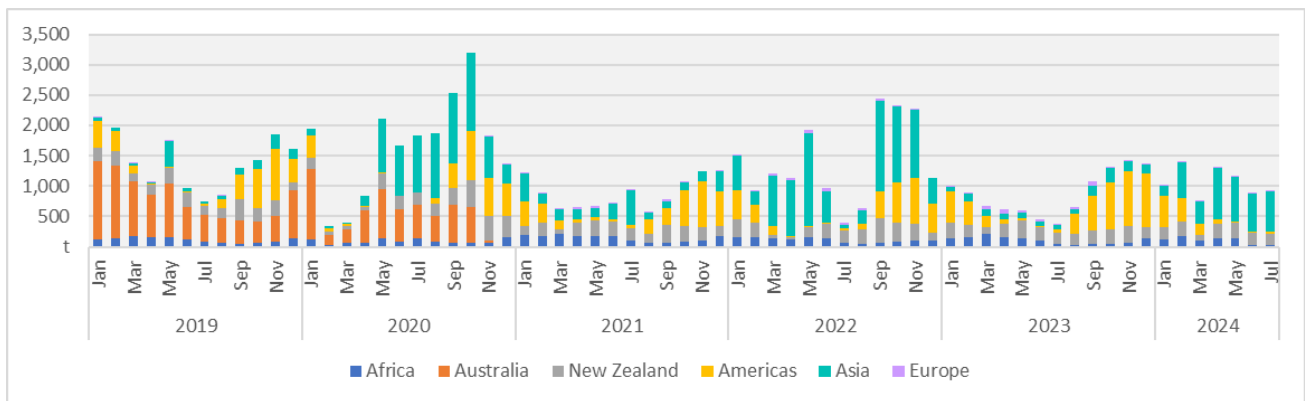
Namibia – 118 tonnes

Senegal – 108 tonnes

Ghana – 147 tonnes

New Zealand continues to concentrate its exports to a single nation. New Zealand sent almost all rock lobster as live product to China - 2,634 tonnes in 2023 represented 99.6% of total NZ lobster export volume. Prices have remained high compared to the pre-COVID average unit price around USD83/kg; averaging USD101/kg in 2021, USD92/kg in 2022, USD95/kg in 2023.

Figure 16: China imports of non-frozen spiny lobster, quantity by origin, monthly



Sources: ABS; GACC; Stats NZ; WRL analysis

Figure 17: China imports of non-frozen spiny lobster, value by origin, monthly

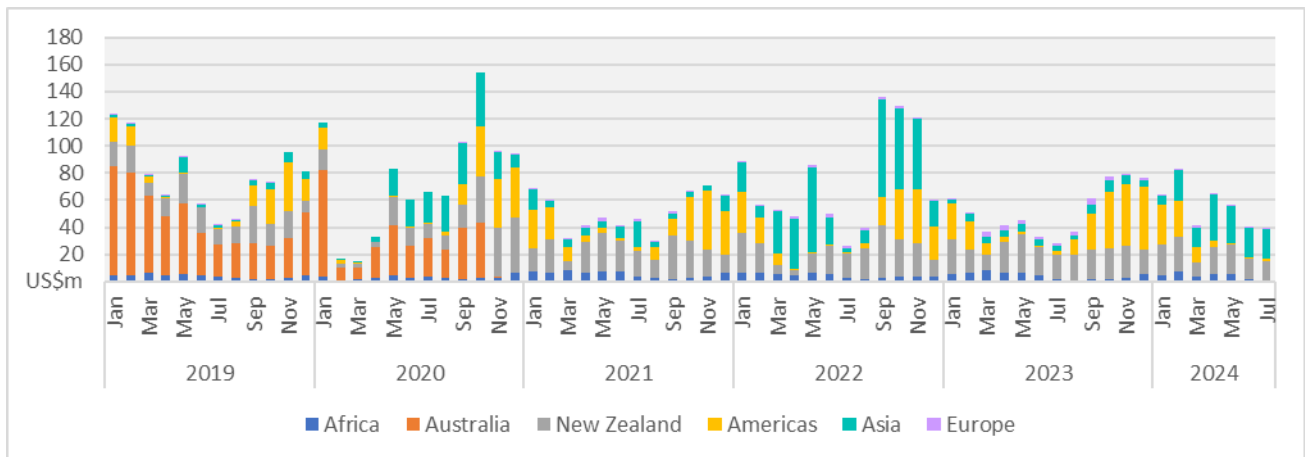
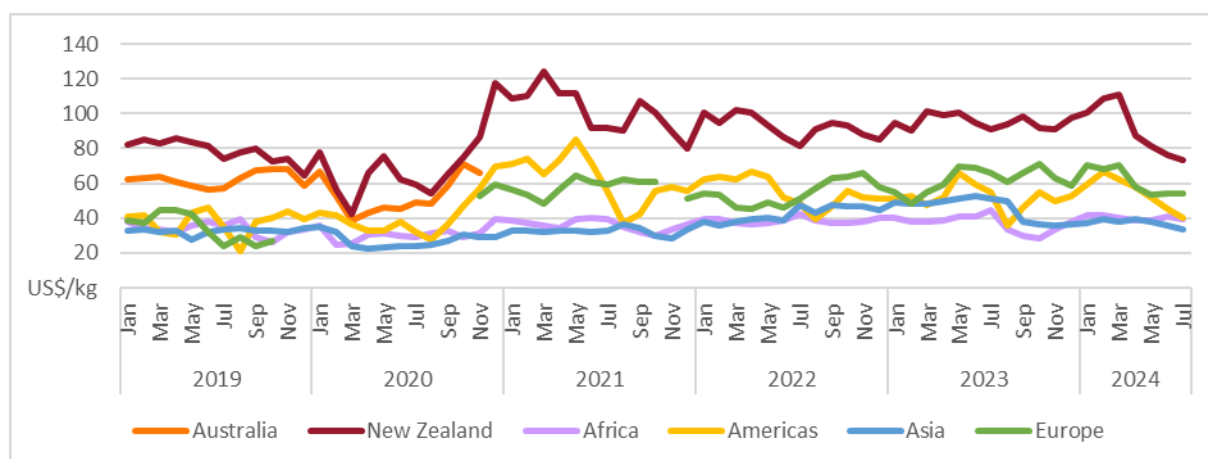


Figure 18: China imports of non-frozen spiny lobster, unit value by origin, monthly



Sources: ABS; GACC; Stats NZ; WRL analysis

Volumes of **frozen** spiny lobster imports into China have increased over pre-COVID levels (2023: 5,335 tonnes with a value of USD103 million compared to 2019: 3,917 tonnes with a value of USD71 million). While priced significantly lower than live product, this market proved resilient in volume and in unit prices over the period with reportedly growing market acceptance from particular sectors of the market.

The China frozen spiny lobster market in 2023 was dominated by India (1,085 tonnes), Brazil (1,073 tonnes) and Cuba (1,061 tonnes). Australia, with a 12% market share in 2023, was also the highest value competitor in the space, with import unit prices averaging USD26/kg.

5.4 Alternative international markets for Western Rock Lobster

China, the most significant market for Australia's Ornate, Southern and Western Rock Lobster, reduced market access in November 2020. In order to address the industry's vulnerability to a single dominant customer, alternative markets need to be developed. A good place to start is by looking at the markets' history. Processors and marketers launched investigations into export markets that are known to have taken reasonable volumes of lobster in the past. WRL developed an information package outlining the key potential markets prospectively capable of absorbing the expected lobster supply. The information pack characterizes each market in terms of the grade and type of lobster preferred, the form (cooked or live) and the typical unit prices paid over the past 20 years. WRL analysed available trade data for the past 24 years (1996 to 2019) with the aim being to highlight major alternative final markets and the volume and form of product they have historically preferred. The following is a summary of the early part of Western Rock Lobster's "Understanding the Markets" initiative.

Western Rock Lobster exports were at levels around 10,000 tonnes per year through the 1990's up until 2007. At that time catches (and exports) dropped, the industry was restructured to a quota system and the commercial catch (and exports) gradually increased from around 5,000 tonnes to the present 7,300 tonnes per year.

The most significant exports of Western Rock Lobster over the past 24 years have been to Japan, United States of America, Taiwan, Singapore; and Vietnam, Hong Kong and Macau and China. The most important fact to note is that while the first 5 of these may have been significant markets in the past, none have accounted for meaningful volumes of Western Rock Lobster in the last five to ten years as the trade shifted to be almost entirely directed to China.

The historical trade figures for Vietnam, Hong Kong and Macau need to be treated with some circumspection because these destinations were, in the past, mostly staging destinations for product whose final destination was mainland China. The introduction of the China-Australia Free Trade Agreement in recent years brought about the reduction and eventual cessation of this indirect trade, as lobster were imported directly into China.

This was set against the backdrop of China ever-increasingly being the final destination for Western Rock Lobster exports.

Since 2010 most product has been exported live, reflecting the increasing reliance on China as the major export destination. Before this time, “non-viable” product (whole cooked and raw frozen, and frozen tails), were the highest volume products exported. Of note, live product attracts a significant premium in particular markets, while non-viable product tends to command relatively lower prices.

Japan – has matured from once showing a preference for live product to now showing a preference for frozen or chilled product. Japan’s total import of live rock lobster declined from 2,300 tonnes in 2002 to under 100 tonnes per year from 2018. Japan’s imports of Australian live rock lobster declined below 200 tonnes per year in 2009 and have been less than 50 tonnes per year since 2014. In 2023 Japan imported 105 tonnes of frozen lobster and 110 tonnes of live lobster from Australia (this live product represented 96% of live spiny imports in Japan in 2023). While frozen and chilled rock lobster is still a reasonably-sized market in Japan at around 1300 tonnes per year in recent times, the unit value commanded by Australian product is not comparable with live exports into China, at USD 40 to USD 50 per kg.

Taiwan – similar to Japan, has evolved from a market with a preference for live product to now show a preference for frozen product. Of the small amount of non-frozen rock lobster imported, almost all was of Indonesian origin until 2021, at which point large volumes of Australian product entered the market at a reasonably consistent USD33/kg. Volumes have tapered off from the high of 2022, with 458 tonnes imported from Australia in 2024 to July. Taiwan’s demand for frozen spiny lobster has increasingly been met by product of Caribbean origin, at prices typically USD5/kg less than Australian frozen product.

USA – as frozen product, Australian rock lobster competes in the same space as Caribbean spiny rock lobster. Rock lobster imports into the USA have declined over time, from 10,000+ tonnes per year in the late 2000’s to around 7,000 tonnes per year in the late 2010’s. Most is imported from the Caribbean (Brazil, Honduras, Nicaragua, Bahamas etc) and imports from these locations have in aggregate remained steady over the years. Imports from Australia declined over this period, from around 1,500 tonnes per year in the late 2010’s to under 100 tonnes per year pre-COVID. It is conceivable that trade from the Caribbean may redirect into China, either as frozen or, as supply chains grow more sophisticated, as live product. This appears to have created some room for Australian lobster to compete in the USA market, with 206 tonnes exported in 2022 and 187 tonnes in 2023.

South Korea – for cultural reasons has never shown an affinity for spiny lobster, and now shows a preference for clawed lobster from the USA and Canada with some premium for live lobster. Exports of Australian spiny lobster to South Korea in 2021 totalled 67 tonnes with an export value of A\$2.9m, or a unit value of A\$43 – almost all of this was live product from Western Australia. Australian export volumes to Korea in 2022 and 2023 were lower than the 2021 figure.

Mexico - As an example of efforts to increase market access for Australian product to new markets, the Department of Agriculture, Water and the Environment has negotiated new market access with Mexico for the export of frozen lobsters from Australia to Mexico. As noted above, since the onset of trade disruptions between China and Australia, Mexico has increased export volumes of high value live product to China. In essence, then, access to the Mexican market means that Australian frozen lobster may act to fill the gap in Mexico’s local supply created by increased exports.

Notwithstanding the existence of alternative markets to the China live export trade, it is clear that these markets have limited ability to accept any meaningful volume of Australian product now not able to enter directly China, in addition to being lower priced markets. Shorter-term prospects for prices within the current geopolitical outlook are therefore reasonably pessimistic. Beach prices are subdued, and the expectation is that GVP will remain steady into the foreseeable future – which carries significant implications for resource access fees and funding.

In the longer term, should access to the direct China trade re-open, and despite the considerable size and attractive price points that market commands, it might be understandable should Australian traders and marketers hesitate to re-commit such a sizeable proportion of product into a single market as has been the case for the past several years.

The development of alternative markets will necessarily be a longer-term endeavour, with the additional challenge that existing and potential alternative markets are still emerging from the stresses of the COVID-19 crisis and acknowledging ongoing compromised airfreight capacity and costs. This will necessarily entail

considerable start-up costs. Processors are investing in R&D and marketing development to determine the potential of these alternative markets, with some government assistance available.

5.5 Changes to trade flows of Australian Lobster

Analysis of Australian export trade shows that, in the absence of a direct live export market to China, all states have experienced reductions in export volumes and export revenue. Figures from the Australian Bureau of Statistics show that exports in 2023 were sent to a much wider array of countries than in 2019, albeit at significantly lower unit prices.

Using the pre-COVID year of 2019 as a baseline, total rock lobster export volumes and value for Australia overall are lower, from pre-COVID 2019 (8,923 tonnes with an export value of AUD762 million) to 2023 (8,343 tonnes with an export value of AUD474 million). This represents a 6% lower export volume, and a 38% lower export value in 2023 compared to 2019:

- Total export volumes for **Western Australia** have recovered to pre-COVID levels, although export value is lower: 2019 - 6,162 tonnes with an export value of AUD488 million; compare to 2023 – 6,244 tonnes with an export value of AUD309 million. This represents a 1% higher export volume, and a 37% lower export value.
- Total export volumes and value from **South Australia, Victoria and Tasmania** in 2019 - 2,138 tonnes with an export value of AUD227 million; compare to 2023 - 1,734 tonnes with an export value of AUD133 million. This represents a 19% lower export volume, and a 42% lower export value.
- Total export volumes and value from **Queensland** in 2019 - 492 tonnes with an export value of AUD38 million; compare to 2023 - 263 tonnes with an export value of AUD26 million). This represents a 46% lower export volume, and a 33% lower export value.

It is worth noting that the 2023 export volumes and value were considerably higher than 2022. The increases in export volume were driven by increases in Western Australia's exports which recovered to pre-COVID levels, together with a small increase in average export unit value.

Live exports continue to dominate Australia's lobster trade. In 2023, live, fresh or chilled exports represented 6,935 tonnes of a total 8,343 tonnes exported, or 87% of lobster exported from Australia. Noting that prior to 2020 about 99% of exports were sent live, in 2023 live exports represented:

- 79% of Western Australia lobster exports – 4,945 tonnes live, fresh or chilled of a total 6,244 tonnes
- 99% of (South Australia + Victoria + Tasmania) lobster exports – 1,722 tonnes live, fresh or chilled of a total 1,734 tonnes
- 89% of Queensland lobster exports - 235 tonnes live, fresh or chilled of a total 263 tonnes

The major destinations in 2023 for the 6,935 tonnes of **live, fresh or chilled** product exported from Australia (noting that these figures do not include re-export volumes) were:

- Hong Kong – 2,494 tonnes of Western Rock Lobster; 777 tonnes of Southern Rock Lobster; 15 tonnes of Tropical Rock Lobster
- Vietnam – 1,061 tonnes of WRL; 746 tonnes of SRL; 7 tonnes of TRL
- Taiwan – 875 tonnes of WRL
- Singapore – 224 tonnes of WRL, 75 tonnes of SRL, 11 tonnes of TRL
- Thailand - 44 tonnes of WRL; 1 tonne of SRL, 154 tonnes of TRL

Frozen and chilled exports from Australia have increased over the past few years, the majority being Western Australian product. Major destinations in 2023 for the 1,403 tonnes of frozen and chilled product exported from Australia (of which a historically high 1,298 tonnes came from Western Australia) included:

- China - 672 tonnes - including 661 tonnes of Western Rock Lobster
- USA - 187 tonnes - including 167 tonnes of WRL
- Taiwan - 193 tonnes - including 190 tonnes of WRL
- Singapore – 112 tonnes – including 85 tonnes of WRL
- Japan – 76 tonnes of WRL

The significant volumes of frozen and chilled product recorded entering China are perhaps indicative of the demand for high-quality safe product, which could be expected to grow as more sophisticated consumers gain increased trust in China's increasingly sophisticated cold-supply chain.

5.6 Increased supplies of Western Rock Lobster for the domestic market

The disruption of trade with China in late 2020 resulted in an urgent focus on supplying Western Rock Lobster for local/domestic consumption (in addition to the pursuit of alternative international markets). Thankfully for industry, the immediate timing of this pivot to domestic markets somewhat aligned with the seasonal increase in demand leading into Christmas and the summer holiday period.

Processors with their own retailing operations significantly lowered prices and increased sales, and there has been an observed increase in the volume of Western Rock Lobster being directed to local/domestic consumers through wholesale channels.⁷ The commercial sector also leaned on domestic market demand to absorb this seasonal supply, reportedly processing 18% to 25% of monthly production for the domestic market during the Decembers of 2021, 2022 and 2023. Most was processed as cooked product. Indications are that an additional 25%-30% of December processing in these years was also cooked and sent to east coast markets. This translates to perhaps half of December production being consigned to the Australian market each year. This significantly (though ephemerally) increases the presence of Western Rock Lobster in the domestic market beyond Western Australia, inevitably competing with east-coast product on its home territory. Notably, since the disruption to the China trade, major Australian supermarkets have offered cooked Western Rock Lobsters in the <400-gram weight range at \$20-\$24 per piece during the holiday season.

To support an increase in local supplies and availability, and in recognition of existing levels of community engagement and demand, the limit applying to the Back of Boat sales mechanism was increased from 100 to 200 lobsters (per trip) for the period between mid-December 2020 and the end of January 2021. This daily limit was further doubled, to 400 lobsters per trip, for the corresponding period the following year and has subsequently been increased to 999 lobsters. Back of Boat sales generally require a buyer to “pre-book” their purchase with a particular fisher. Local demand is concentrated in the Christmas holiday period - December is by far the peak sales month and accounts for half of annual Back of Boat sales. Pricing is a matter for the individual fisher and customer, with reports suggesting typical prices around \$45/kg over recent Christmas periods, representing a premium to fishers of \$10/kg or more compared to prevailing beach prices. Reported Back of Boat sales over the past four Decembers were 27, 25, 16 and 19 tonnes respectively – representing between 1.8% and 2.4% of landings in those months.

Outside of the Christmas holiday season, domestic demand within Western Australia and within the rest of Australia is relatively muted, leading to low domestic sales whether from Back of Boat or through commercial channels.

The pivot to domestic markets has undoubtedly been successful in providing some short-term relief but expectations need to be realistic when it comes to the willingness or ability of domestic markets to support large volumes of Western Rock Lobster consumption, at prices competitive with export markets, throughout the rest of the year and during the years to come. There is no doubt that many more Australians have taken the opportunity to try Western Rock Lobster, and the profile of Western Rock Lobster has been increased. However the seasonality, price sensitivity and size of the domestic market are such that the long-term outlook of industry will continue to be dictated by developments in international markets (e.g. a resumption of the direct live trade with China, and/or the successful development of alternative international markets).

⁷ It should be noted that the pivot to domestic markets presented a challenge to processors in regards the requirement for a different (i.e. more diversified) product mix, and the need to manage the distribution of product in a changed market environment. Future required investment, should the current focus on domestic markets continue, will ultimately affect industry as a whole.

Outlook for Western Rock Lobster markets

Market diversification is unlikely to improve beach prices markedly over current levels, as the prices achieved in alternative markets are significantly lower than those prevailing in China for high-quality, live rock lobster. In this sense, market diversification can be thought of as a form of insurance, offsetting risks by imposing costs – a known lower set of prices. New Zealand's lobster industry appears to believe that the costs of market diversification outweigh the benefits – for years almost all of New Zealand's live exports have been sent to the China market.

More recently, shifts in political sentiment and careful diplomacy have brought meaningful change for the live direct trade outlook. At the time of writing (October 2024) a major announcement from officialdom confirms a definitive change in market access for Australia's live rock lobster trade that will apply before the 2025 Chinese New Year.

When that direct live trade resumes, there is cause for tempered optimism about the likely impact on beach prices for western rock lobster. The Australian wine industry experienced several months of strong sales after access to the China market was reinstated, but sales dropped off in the light of subdued Chinese consumer sentiment and increased market competition from global wine producers. The growth outlook for the Chinese economy over the past year has been less bullish, as domestic demand weakens while headwinds intensify for key export-led sectors - and despite recent announcements of significant stimuli to the Chinese economy giving grounds for optimism there are general concerns among economic commentators that more stimulus will be required. A continued quota of 7.3 million kilograms (the highest since the introduction of quota; and supplying both domestic and international markets) is likely to prove a countering force to upward price pressure. This combination of supply and demand dynamics indicate that the outlook for Western Rock Lobster beach prices may have less upside than once anticipated when access to the China market is reinstated.



Western
**ROCK
LOBSTER**

World leading sustainable fishery

P: (08) 9432 7722
F: (08) 9432 7700
28 Mews Road, Fremantle WA 6160
www.westernrocklobster.org