



**ECONOMIC AND SOCIAL INDICATORS  
FOR THE SOUTH AUSTRALIAN GULF  
ST VINCENT PRAWN FISHERY  
2021/22**

**A Report for the Department of  
Primary Industries and Regions**

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## ABBREVIATIONS

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
CPI	Consumer Price Index
CPUE	catch per unit effort
FRDC	Fisheries Research and Development Corporation
FTE	full time equivalent
GOS	gross operating surplus
GSP	gross state product
GSV	Gulf St Vincent
GSVPMAC	Gulf St Vincent Prawn Fishery Management Advisory Committee
GVP	gross value of production
NER	net economic return
PIRSA	Department of Primary Industries and Regions
R&M	repairs and maintenance
RBA	Reserve Bank of Australia
ROI	return on investment
SA	South Australia
SARDI	South Australian Research and Development Institute
WSD	White Spot Disease

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## EXECUTIVE SUMMARY

The objective of this report is to present a set of economic and social performance indicators for the Gulf St Vincent (GSV) Prawn Fishery for 2021/22 as well as to develop a consistent time series of economic and social information to aid management of the fishery in future years. The economic and social indicators detailed in this report are summarised below.

The accuracy of the indicators depends on the successful provision of data by fishing businesses. While GSV Prawn Fishery businesses were requested to provide data, provision was insufficient for this report. Instead of using recent survey data, the indicators presented in this report are modelled using data collected in 2018, commentary from some stakeholders, and the established update method normally used for only two years following each survey of businesses. As such, the indicators presented in this report should be considered useful but less accurate than those presented in previous years and for other fisheries.

Previous issues of the economic and social performance indicators for the GSV Prawn Fishery included business level financial indicators. Due to recent changes of business structures within the fishery, there is no longer a ‘typical business’ operating in the fishery. As such, business level indicators are no longer an appropriate measure of performance. This 2021/22 report is the first year of reporting that includes aggregate fishery level financial results rather than business level financial indicators. This change was requested by fishers at an association meeting.

### Economic Performance Indicators

This report examines the performance of the fishery against the second goal of the management plan, which is to “enable optimal utilisation and equitable distribution”. Specific performance indicators outlined in the management plan are detailed in Table ES-1. These performance indicators are presented against the reference points, also outlined in the management plan, and the change in each indicator between 2018/19 and 2021/22.

A summary of key economic indicators for the last three years is presented in Table ES-2.

Table ES-1 Gulf St Vincent Prawn Fishery performance indicators and trends

Performance indicator	Reference point	Change between 2018/19 and 2021/22
Gross Value of Production (GVP)	GVP reported and monitored	Real GVP decreased by 27 per cent from \$4.4 million to \$3.2 million
Boat Gross Margin	Boat Gross Margin monitored when available	Real boat gross margin decreased by 52 per cent from \$2.3 million to \$1.1 million
Net Economic Return (Economic Rent)	Net Economic Return monitored emerging trends in GOS are considered if available	Net economic return decreased from \$0.5 million to -\$0.4 million



Table ES-2 Summary of key economic indicators, 2018/19 to 2021/22<sup>a</sup>

Indicator	2018/19	2019/20	2020/21	2021/22
Catch	212t	133t	110t	139t
GVP	\$4.4m	\$2.2m	\$2.2m	\$3.2m
Fee/licence	\$28,473	\$32,185	\$43,601	\$34,291
Fee/GVP	6.5%	14.6%	19.6%	10.7%
Return on fishing gear and equip	16.8%	-5.1%	-14.8%	1.6%
Return on total capital	6.4%	-1.9%	-5.4%	0.5%
Boat gross margin	\$2.3m	\$0.8m	\$0.3m	\$1.1m
Licence Value	\$1.2m	\$1.1m	\$1.1m	\$1.1m
Gross state product	\$11.7m	\$6.9m	\$6.7m	\$8.6m
Employment	99 fte	73 fte	70 fte	80 fte
Net Economic Return	\$0.5m	-\$1.0m	-\$1.4m	-\$0.4m
Net Economic Return/GVP	11.7%	-51.8%	-68.2%	-11.8%

<sup>a</sup> Dollar values in this table are in real 2021/22 dollars.

### Catch and Gross Value of Production

Despite fluctuations, catch decreased from 232 tonnes in 2002/03 to 125 tonnes in 2011/12. The fishery was then closed for two years in 2012/13 and 2013/14. When the fishery reopened in 2014/15, catch was 249 tonnes but has declined since and was 139 tonnes in 2021/22 (Table ES-2).

The real value of the Gulf St Vincent Prawn Fishery declined significantly between 2002/03 (\$6.8 million) and 2011/12 (\$2.2 million) before the fishery was closed. After the fishery reopened in 2014/15 real GVP (\$4.8 million) was at its highest level since 2004/05. As with catch, GVP has followed a declining trend since 2014/15 to be almost \$3.2 million in 2021/22.

### Management Costs

In real terms, total licence fees in the Gulf St Vincent Prawn Fishery decreased by around 5 per cent between 2002/03 (\$438,000) and 2011/12 (\$418,000) before the fishery was closed. Total licence fees fell to \$230,000 when the fishery reopened in 2014/15. Total licence fees have gradually increased since to \$343,000 in 2021/22 (49 per cent higher than in 2014/15).

Licence fees as a proportion of GVP increased from 6.5 per cent in 2002/03 to 19.0 per cent in 2011/12. This measure fell to 4.8 per cent when the fishery reopened in 2014/15 as a result of a significant increase in GVP and a reduction in aggregate licence fees. Licence fees as a proportion of GVP have increased since,

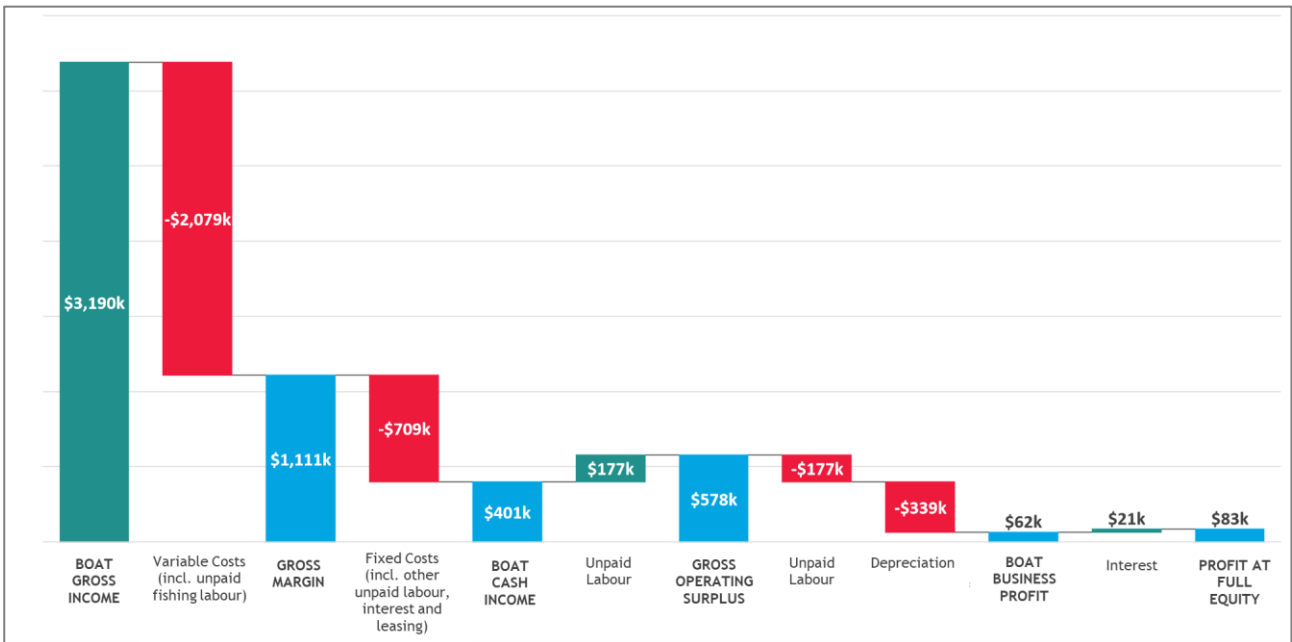
reaching 19.6 per cent in 2020/21 before falling to 10.7 per cent in 2021/22. The overall increase since the fishery closure is a result of a rise in aggregate licence fees and a fall in GVP resulting from a reduction in the catch of prawns (Table ES-2).

Licence fees per kg of catch increased from \$1.89 in 2002/03 to \$3.34 in 2011/12. After the fishery reopened in 2014/15 this measure fell to \$0.92/kg but increased to \$2.74 in 2021/22 due to both a fall catch and increase in licence fees.

### Financial Measures

Changes in each of the profitability measures for the fishery were closely related to the total income earned. Profitability followed a decreasing trend between 2002/03 to 2013/14. Improvements in profitability were observed once the fishery reopened in 2014/15 but all measures of profitability have declined since, despite a small recovery into 2021/22. A summary of boat level financial performance in the GSV Prawn Fishery is illustrated in Figure ES-1 for 2021/22.

Figure ES-1 Summary of boat level financial performance in the Gulf St Vincent Prawn Fishery, 2021/22



In each year of the analysis labour costs accounted for the largest share of total cash costs. The other significant cash costs were fuel, repairs and maintenance, licence fees and slipping and mooring.

The estimated rate of return to total capital for the fishery fluctuated but stayed negative between 2003/04 and 2011/12. However, once the fishery reopened in 2014/15 the rate of return was positive at 4.1 per cent. This indicator has since declined to become negative but recovered to positive 0.5 per cent in 2021/22 (Table ES-2).

### **Contribution to South Australian Economy**

Changes in total output and contribution to GSP are closely linked to changes in fishery GVP. Between 2002/03 and 2011/12, total output decreased by around 30 per cent and contribution to GSP decreased by around 37 per cent. After the fishery reopened, total output recovered from its 2011/12 levels but has declined since. In 2021/22 total output was \$15.1m and total contribution to GSP was \$8.6m.

Employment contributions followed a similar trend over the same period. Between 2002/03 and 2011/12, employment declined by 28 per cent. After the fishery reopened in 2014/15, employment was 18 per cent higher than in 2002/03 but it has declined since and was 80 fte in 2021/22.

### **Net Economic Return**

Net economic return is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). Net economic return is maximised when economic efficiency is maximised. Net economic return followed a decreasing trend, with some fluctuations through to 2013/14, the second year the fishery was closed. After the fishery reopened, net economic return improved to -\$431,000 in 2014/15, before increasing to \$434,000 in 2018/19. Net economic return has been lower since and was -\$376,000 in 2021/22.

Net economic return expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. This indicator shows a decreasing trend between 2002/03 (1 per cent) and 2011/12 (-134 per cent) before recovering when the fishery reopened in 2014/15 (-10 per cent) where it increased through to 2018/19 (12 per cent). The indicator has been lower since and was -12 per cent in 2021/22 (Table ES-2). The Gulf St Vincent Prawn Fishery currently has one of the lowest NER/GVP of all commercial fisheries in South Australia and is only one of a few fisheries with negative NER/GVP.

Since the fishery reopened in 2014/15, net economic return has remained higher than for the majority of the period prior to the closure. Although the decline in catch in 2019/20 and 2020/21 reduced net economic return, the benefits of the fisheries restructure are evident in the higher levels of net economic return between 2014/15 and 2021/22. Despite other economic indicators declining to levels last seen in 2011/12, net economic return in 2020/21 remained higher than all values reported between 2003/04 and 2013/14. This indicates that the fishery has been able to successfully adapt to the structural changes that have occurred gradually since 2017/18.

## 1. INTRODUCTION

Under the *Fisheries Management Act 2007*, all the major fisheries in South Australia (SA) operate in accordance with fishery management plans that determine the primary management objectives of the fishery. Economic performance indicators are a feature of these plans and annual reports on them are required for the Minister for Primary Industries and Regional Development to meet the obligations of Section 7 of the Fisheries Management Act 2007. *The Management Plan for the South Australian Commercial Gulf St Vincent Prawn Fishery (2022)* was published in July 2022 (PIRSA 2022).

This report is the twentieth economic indicators report for the Gulf St Vincent Prawn Fishery. The objective of this report, *Economic and Social Indicators for the Gulf St Vincent Fishery 2021/22*, is to provide an update of the fishery's most recent economic performance based on the sixth licence holder survey undertaken in the fishery in 2018. Details of the previous five surveys can be found in BDO EconSearch (2022b).

The aim is to present the performance indicators defined in the management plan for the fishery as well as to develop a consistent time series of economic information to aid management of the fishery in future years. The economic indicators detailed in this report include:

- gross value of production (GVP) (catch and price)
- factors affecting cost in the fishery
- the cost of management of the fishery
- financial measures (income, costs, profit, and return on investment)
- economic contribution of the fishery, both local and state
- net economic return
- external factors that influence the economic condition of the fishery.

For purposes of comparison, summary economic indicators for all SA commercial fisheries, up to 2020/21, are presented in Appendix 2.

In 2014, the economic indicator surveys of commercial fisheries were extended to include the collection of social indicators. The results of the social indicators component of the most recent survey (2018) are presented BDO EconSearch (2022b).

The accuracy of the indicators depends on the successful provision of data by fishing businesses. While GSV Prawn Fishery businesses were requested to provide data, provision was insufficient for this report. Instead of using recent survey data, the indicators presented in this report are modelled using data collected in 2018, commentary from some stakeholders, and the established update method normally used for only two years following each survey of businesses. As such, the indicators presented in this report should be considered useful but less accurate than those presented in previous years and for other fisheries.

Previous issues of the economic and social performance indicators for the GSV Prawn Fishery included business level financial indicators. Due to recent changes of business structures within the fishery, there is no longer a 'typical business' operating in the fishery. As such, business level indicators are no longer an appropriate measure of performance. This 2021/22 report is the first year of reporting that includes aggregate fishery level financial results rather than business level financial indicators. This change was requested by fishers at an association meeting.

## 2. METHOD OF ANALYSIS AND DEFINITION OF TERMS

### 2.1. Survey of Licence Holders, 2017/18

The questionnaire for the 2017/18 survey was based on the previous survey, conducted in November 2016. It was drafted in consultation with the Executive Officer of the St Vincent Gulf Prawn Boat Owner's Association. Development of the social indicator component of the questionnaire was based on a process recommended in the report *Managing the Social Dimensions of Fishing* (Triantafillos et al. 2014a, b).

During November 2018 to January 2019, interviews were conducted with the owners (or representatives) of five licences. All ten fishers were contacted but the five remaining fishers were unable or unwilling to provide sufficient detail about their fishing operations to make the survey data usable. All five responses that were collected were usable, and represent half of the licences in the fishery.

### 2.2. Updating the Indicators, 2021/22

In 2021, an economic and social survey was issued to licence holders in the Gulf St Vincent Prawn fishery. BDO EconSearch mailed a copy of the survey to licence holders by post, and followed up via email and phone. There was an insufficient number of survey responses from licence holders to conduct an accurate and complete analysis based on the 2021 survey. Consequently, the 2021/22 analysis was based on 2018 survey responses and consultation with industry in 2023.

The 2021/22 economic indicators for the Gulf St Vincent Prawn Fisheries were derived using a range of primary and secondary data and survey-based 2017/18 indicators. The following information was used to adjust the 2017/18 indicators to reflect the fisheries' performance in 2021/22.

- SARDI data were used to reflect changes in catch and its value between 2017/18 and 2021/22. Catch and value data were used to estimate the average total boat income in the fisheries.
- Information on change in fishing effort (number of days fished) between 2017/18 and 2021/22 was used to adjust the cost of inputs that were assumed to vary with fishing effort. These inputs included fuel, repairs and maintenance, ice and provisions.
- The consumer price index (CPI) for Adelaide and components of the CPI were used to adjust the cost of inputs to reflect local levels of inflation (ABS 2022a).
- Information from industry about the reduction in the number of boats in the fishery between 2017/18 and 2021/22 was used to adjust the boat level operations and aggregate fishery level results.

### 2.3. Definition of Terms

**Beach Price:** refers to the price received by commercial fishers at the "port level" for their catch, and is generally expressed in terms of \$/kg. Some processing costs are included in the beach price, as some processing (such as freezing) occurs on the boat. Other processing costs are not included in the beach price, as processing operations are assumed to occur further along the value chain. The use of beach prices also removes the effect of transfer pricing by the firm if it is vertically integrated into the value chain.

**Boat Business Profit:** is defined as *GOS less Depreciation less Owner-operator and Unpaid Family Labour*. Boat Business Profit represents a more complete picture of the actual financial status of an individual firm, compared with GOS, which represents the cash in-cash out situation only.

**Boat Capital:** includes capital items that are required by the licence holder to earn the boat income. It includes boat hull, engine, electronics and other permanent fixtures and tender boats. Other capital items such as motor vehicles, sheds, cold-rooms, and jetty/moorings can be included to the extent that they are used in the fishing business. The fishing licence/permit value is included in total boat capital.

**Boat Cash Income:** is defined as Gross Operating Surplus less imputed wages for owner- operator and unpaid family labour.

**Boat Gross Margin:** is defined as *Total Boat Income* less *Total Boat Variable Costs*. This is a basic measure of profit which assumes that capital has no alternative use and that as fishing activity (days fished) varies there is no change in capital or fixed costs.

**Cost of Management Services:** in a commercial fishery management services will generally include biological monitoring and reporting; policy, regulation and legislation development; compliance and enforcement services; licensing services; and research. Where a commercial fishery operates under full cost recovery, licence fees will be set to cover the cost of managing the fishery or at least the commercial sector's share of the resource.

In fisheries where there is full cost recovery, it can be assumed that the cost of providing these management services to the commercial sector will be equal to the gross receipts from licence fees in the fishery. With information on licence fee receipts, GVP, catch and the number of commercial fishers in the fishery, the following indicators can be readily calculated:

- aggregate licence fee receipts for the fishery (\$)
- licence fee/GVP (%)
- licence fee/catch (\$/kg)
- licence fee/licence holder (\$/licence holder)

**Depreciation:** Depreciation refers to the annual reduction in the value of boat capital due to general wear and tear or the reduction in value of an item over time.

**Gross Operating Surplus:** (GOS) is defined as *Total Boat Income* less *Total Boat Cash Costs* and is expressed in current dollar terms. GOS may be used interchangeably with the term Gross Boat Profit. A GOS value of zero represents a breakeven position for the business, where TBCC equals TBCR. If GOS is a negative value the firm is operating at a cash loss and if positive the firm is making a cash profit. GOS does not include a value for owner/operator wages, unpaid family work, or depreciation.

**Gross Value of Production (GVP):** refers to the value of the total annual catch for individual fisheries, fishing sectors or the fishing industry as a whole, and is measured in dollar terms. GVP, generally reported on an annual basis, is the quantity of catch for the year multiplied by the average monthly landed beach prices.

**Owner-operator and Unpaid Family Labour:** in many fishing businesses there is a component of labour that does not draw a direct wage or salary from the business. This will generally include owner/operator labour and often also include some unpaid family labour. The value of this labour needs to be accounted for which involves imputing a labour cost based on the amount of time and equivalent wages rate. In the above calculations this labour cost can be included simply as another cost so that Gross Operating Surplus takes account of this cost. Alternatively, it can be deducted from GOS to give a separate indicator called Boat Cash Income. Owner-operator and unpaid family labour is separated into variable labour (fishing and repairs and maintenance) and overhead labour (management and administration).

**Profit at Full Equity:** is calculated as *Boat Business Profit* plus *rent, interest and lease* payments. Profit at Full Equity represents the profitability of an individual licence holder, assuming the licence holder has full equity in the operation, i.e. there is no outstanding debt associated with the investment in boat capital. Profit at Full Equity is a useful absolute measure of the economic performance of fishing firms.

**Rate of Return to Capital:** is calculated as *Profit at Full Equity* divided by *Boat Capital* multiplied by *100*. This measure is expressed in percentage terms and is calculated for an individual boat. It refers to the economic return to the total investment in capital items, and is a useful relative measure of the performance of individual firms. Rate of return to capital is useful to compare the performance of various boats, and to compare the performance of other types of operators, and with other industries.

**Total Boat Cash Costs (TBCC):** defined as *Total Boat Variable Costs* plus *Total Boat Fixed Costs*

**Total Boat Fixed Costs:** are costs that remain fixed regardless of the level of catch or the amount of time spent fishing. As such these costs, measured in current dollar terms, are likely to remain relatively constant from one year to the next. Examples of fixed cost include:

- insurance
- licence and industry fees
- office & business administration (communication, stationery, accountancy fees)
- interest on loan repayments and overdraft
- leasing

**Total Boat Income (TBI):** refers to the cash receipts received by an individual firm and is expressed in dollar terms. Total boat income is calculated as catch (kg) multiplied by 'beach price' (\$/kg). Total boat income is the contribution of an individual licence holder to the GVP of a fishing sector or fishery.

**Total Boat Variable Costs:** are costs which are dependent upon the level of catch or, more commonly, the amount of time spent fishing. As catch or fishing time increases, variable costs also increase. Variable costs are measured in current dollar terms and include the following individual cost items:

- fuel, oil and grease for the boat (net of diesel fuel rebate)
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs (nets, etc.)

### **3. ECONOMIC INDICATORS FOR THE GULF ST VINCENT PRAWN FISHERY**

#### **3.1. Economic Objectives of the Gulf St Vincent Prawn Fishery**

According to the *Management Plan for the South Australian Commercial Gulf St Vincent Prawn Fishery (2022)* (PIRSA 2022), management of the fishery has a number of biological, economic, environmental and social objectives.

In order to achieve these objectives, the management plan sets out specific biological, ecological, social and economic goals for the fishery. There are four key management goals for the GSV Prawn Fishery:


1. Maintain ecologically sustainable Prawn biomass
2. Enable optimum utilisation and equitable distribution
3. Protect and conserve aquatic resources, habitats and ecosystems
4. Enable cost effective and participative management of the fishery


The economic and social performance indicators and reference points of the GSV Prawn Fishery, as described in the management plan, are summarised in Table 3-1. These are presented in the following sections.



Table 3-1 Economic and social objectives of the Gulf St Vincent Prawn Fishery

Objective	Goal	Management Strategies	Performance Indicator	Reference Point
2. Enable optimal utilisation and equitable distribution	2a. Optimise economic performance within biologically sustainable levels	2ai. Economic performance is monitored	Gross value of production (GVP)	GVP reported and monitored
		2aii. Management framework allows for economic optimisation	Boat Gross Margin	Boat Gross Margin monitored when available
		2aiii. Changes to management arrangements consider economic implications		
		2aiv. Undertake Pre-fishing surveys		
		2av. Bio-economic model rerun periodically	Net Economic Return (Economic Rent)	Net Economic Return (Economic Rent) monitored emerging trends in GOS are considered if available.
		2avi. Support innovation and technology to improve catch handling and on-board processing or new or innovative product forms to improve financial performance of operators		
4. Enable cost effective and participative management of the fishery	4b. Support community stewardship of fisheries resources	4bi. Stakeholders have input to the management of the fishery	Membership for non-industry stakeholders on the industry led GSVPFMAC	Membership for non-industry stakeholders on the industry led GSVPFMAC is maintained
		4bii. Communicate management arrangements to the wider community.	Management information is available on the PIRSA webpage	PIRSA website information is updated as required

 Indicators reported in economic reports.

 Reference points that can be calculated from reported economic indicators

Source: PIRSA 2022

### 3.2. Catch and Gross Value of Production

Table 3-2 shows that total catch in the GSV Prawn Fishery decreased with significant variation from 232 in 2002/03 to just 125 tonnes in 2011/12 from when the fishery was closed for the subsequent two years. The fishery was reopened in 2014/15 with a total catch of 249 tonnes. Since then total catch has declined and was 139 tonnes in 2021/22 was 30 per cent lower than the average catch over the 20 years.

Table 3-2 Catch and value of catch of the SA Prawn fisheries, 2002/03 to 2021/22

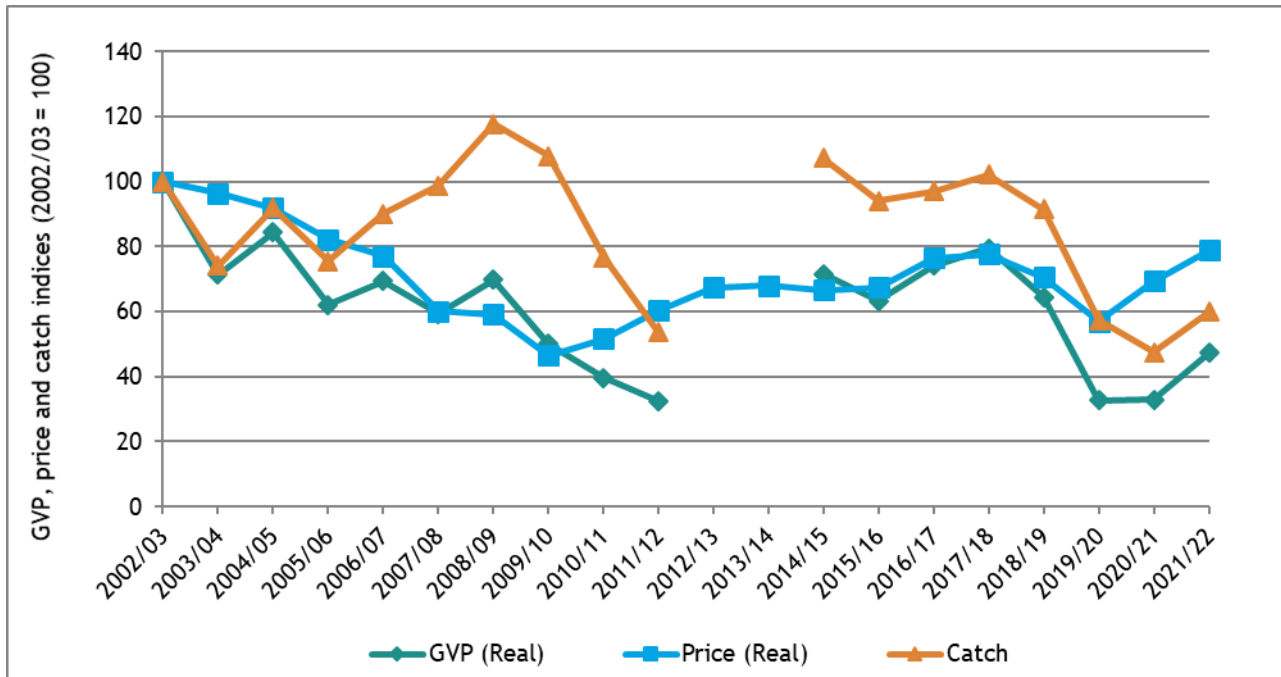
Year	Gulf St Vincent		Spencer Gulf and West Coast		South Australia	
	(tonnes)	(real \$'000)	(tonnes)	(real \$'000)	(tonnes)	(real \$'000)
2002/03	232	6,759	1,508	44,985	1,740	51,744
2003/04	172	4,828	1,958	62,556	2,130	67,383
2004/05	213	5,698	1,960	48,549	2,173	54,247
2005/06	175	4,191	1,891	49,606	2,066	53,797
2006/07	209	4,693	2,024	56,530	2,233	61,223
2007/08	229	4,013	2,088	45,221	2,317	49,233
2008/09	273	4,709	1,915	41,638	2,188	46,347
2009/10	250	3,383	2,445	37,566	2,695	40,949
2010/11	178	2,678	2,115	40,531	2,293	43,210
2011/12	125	2,200	1,840	33,550	1,965	35,749
2012/13	0	0	1,881	36,910	1,881	36,910
2013/14	0	0	1,805	35,447	1,805	35,447
2014/15	249	4,831	1,848	36,893	2,097	41,724
2015/16	218	4,282	2,180	41,424	2,398	45,706
2016/17	225	5,011	2,180	40,779	2,405	45,790
2017/18	237	5,363	2,518	55,100	2,755	60,463
2018/19	212	4,353	2,201	47,421	2,413	51,774
2019/20	133	2,209	1,803	26,065	1,936	28,273
2020/21	110	2,226	1,908	39,224	2,018	41,450
2021/22	139	3,190	1,445	30,786	1,584	33,976

Source: SARDI Aquatic Sciences

Table 3-2 also shows that in real terms the value of the GSV Prawn Fishery was 23 per cent lower in 2021/22 than the average of the 20 year period. This was due to a decline in the catch (30 per cent below the 20 year average in 2021/22), and despite an increase in the real price for Prawns (10 per cent above the 20 year average in 2021/22). Long-term trends in catch and value are discussed in Section 5.

Figure 3-2 illustrates the trends in catch, real price and real GVP in the GSV Prawn Fishery over the last 20 years. The value for each indicator has been converted to an index with a base year (2002/03) value set to 100. Catch and real GVP are not shown for 2012/13 and 2013/14 as the fishery was closed but the Prawn price in SA is shown as the Spencer Gulf and West Coast Prawn fisheries remained open in these years. Between 2002/03 and 2021/22 real price decreased by around 21 per cent overall. This explains why real GVP decreased (53 per cent) by a greater proportion than catch (40 per cent) over this period.

Figure 3-2 GVP, price and catch indices for the GSV Prawn Fishery <sup>a</sup>



<sup>a</sup> 2002/03 is the reference year against which all other years are compared.

Source: SARDI Aquatic Sciences

### 3.3. Summary of Factors Affecting Costs in the Gulf St Vincent Prawn Fishery

The information in Table 3-3 was used to adjust the 2020/21 financial performance indicators to reflect the costs incurred in the fishery in 2021/22. The following data were used and adjustments made.

- Information from SARDI on the change in fishing effort (total days fished) was used to adjust costs that vary depending on the amount of time spent fishing. These costs include the cost of fuel, repairs and maintenance and provisions.
- The ABS Transportation Index for Adelaide was used to adjust the cost of fuel.
- Interest charges were adjusted in accordance with the Reserve Bank of Australia indicator lending rate (i.e. weighted average interest rate for small businesses with outstanding credit).
- The CPI for Adelaide was used to adjust other costs. Other costs associated with operating in the fishery include, legal and accounting costs, office and administration, telephone expenses and other incidental costs.
- The Wage Price index was used to adjust the cost of labour.

Table 3-3 Factors affecting costs in the GSV Prawn Fishery, 2020/21 to 2021/22

	2020/21	2021/22	Change
Nights fished <sup>a</sup>	274.0	300.0	9.5%
Price of fuel - Transportation Index <sup>b</sup>	105.7	119.7	13.2%
Interest charges (%/annum) <sup>c</sup>	6.5%	6.6%	1.4%
CPI Adelaide <sup>d</sup>	117.8	125.3	6.4%
Labour Price <sup>e</sup>	136.4	139.3	2.1%

<sup>a</sup> SARDI Aquatic Sciences

<sup>b</sup> Transportation index (component of CPI) for Adelaide (ABS 2022a)

<sup>c</sup> RBA indicator lending rate for small business (RBA 2022a)

<sup>d</sup> Consumer price index (CPI) for Adelaide (ABS 2022a)

<sup>e</sup> Wage price index for SA (ABS 2022b)

### 3.4. Cost of Management

Licence fees from GSV Prawn Fishery licence holders are collected in accordance with the PIRSA Cost Recovery Policy and the Australian Government's Cost Recovery Guidelines (July 2014). Accordingly, licence fees are set to cover the cost of managing the GSV Prawn Fishery. For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.), although this excludes some known small subsidies, such as federal government grants for research and stock status assessments.

Management services include:

- annual reports on biological and economic indicators
- policy and management services
- regulatory/legislation and licensing services
- compliance services
- directorate services
- extension services
- research services (including the FRDC levy).

For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.). Table 3-4 shows actual licence fee receipts for the GSV Prawn Fishery for the period 2002/03 to 2022/23. In real terms, total licence fees in the Gulf St Vincent Prawn Fishery decreased by around 5 per cent between 2002/03 (\$438,000) and 2011/12 (\$418,000) before the fishery was closed (Table 3-4). Total licence fees fell to \$230,000 when the fishery reopened in 2014/15. Total licence fees gradually increased to \$343,000 in 2021/22 (49 per cent higher than in 2014/15).

Table 3-4 Costs of management in the GSV Prawn Fishery, 2002/03 to 2022/23 <sup>a</sup>

	Licence Fee (\$'000)	GVP		Catch		Licences	
		Total GVP (\$'000)	Fee/GVP (%)	Total Catch (tonnes)	Fee/catch (\$/kg)	Number of Licences	Fee/Licence (\$)
2002/03	438	6,759	6.5%	232	\$1.89	10	\$43,767
2003/04	389	4,828	8.1%	172	\$2.26	10	\$38,870
2004/05	393	5,698	6.9%	213	\$1.84	10	\$39,296
2005/06	395	4,191	9.4%	175	\$2.26	10	\$39,463
2006/07	369	4,693	7.9%	209	\$1.77	10	\$36,908
2007/08	415	4,013	10.3%	229	\$1.81	10	\$41,452
2008/09	440	4,709	9.3%	273	\$1.61	10	\$43,973
2009/10	447	3,383	13.2%	250	\$1.79	10	\$44,719
2010/11	447	2,678	16.7%	178	\$2.51	10	\$44,740
2011/12	418	2,200	19.0%	125	\$3.34	10	\$41,771
2012/13	-	-	-	-	-	10	-
2013/14	-	-	-	-	-	10	-
2014/15	230	4,831	4.8%	249	\$0.92	10	\$22,995
2015/16	253	4,282	5.9%	218	\$1.16	10	\$25,255
2016/17	286	5,011	5.7%	225	\$1.27	10	\$28,608
2017/18	284	5,363	5.3%	237	\$1.20	10	\$28,405
2018/19	285	4,353	6.5%	212	\$1.34	10	\$28,473
2019/20	322	2,209	14.6%	133	\$2.42	10	\$32,185
2020/21	436	2,226	19.6%	110	\$3.96	10	\$43,601
2021/22	343	3,190	10.7%	139	\$2.47	10	\$34,291
2022/23	539	n.a.	-	n.a.	-	10	\$53,855

<sup>a</sup> Licence fees and GVP are presented in real 2021/22 dollars. Nominal management costs are presented in Appendix 5. 2022/23 values have not been adjusted.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Licence fees as a proportion of GVP increased from 6.5 per cent in 2002/03 to 19.0 per cent in 2011/12. This measure fell to 4.8 per cent when the fishery reopened in 2014/15 as a result of a significant increase in GVP and a reduction in aggregate licence fees. Licence fees as a proportion of GVP have increased since, reaching 19.6 per cent in 2020/21 before falling to 10.7 per cent in 2021/22. The overall increase is a result of a rise in aggregate licence fees and a fall in GVP resulting from a reduction in the catch of prawns. Licence fees per kg of catch increased from \$1.89 in 2002/03 to \$3.34 in 2011/12. After the fishery reopened in 2014/15 this measure fell to \$0.92/kg but increased to \$2.74 in 2021/22 due to both a fall catch and increase in licence fees.

### 3.5. Financial Performance Indicators

The major measures of the financial performance of the surveyed businesses in the GSV Prawn Fishery for the period 2019/20 to 2021/22 are shown in Table 3-5. As the operation of each licence holder in the fishery varies significantly, the estimates of financial performance have been presented as a total for the fishery. Financial performance for 2019/20 to 2021/22 are based on the 2018 survey of licence holders. For comparison, financial performance estimates for earlier years (2002/03 to 2018/19) are provided in Appendix 3. All financial performance indicator tables are presented in nominal terms.

#### Income

Total recorded Gulf St Vincent Prawn catch increased by 26 per cent between 2020/21 and 2021/22 and gross receipts from the sale of Prawns increased by 52 per cent over the same period (Table 3-2). The increase was driven by the increase in catch and the increase in the nominal price for prawns between 2020/21 and 2021/22 (26 per cent). The total gross income for the fishery as a whole in 2021/22 was estimated to be almost \$3.2 million.

#### Costs

Table 3-5 shows total cash costs separated into variable and fixed costs. Variable costs (75 per cent of total boat cash costs in 2021/22) represented a significantly greater proportion of total cash costs than fixed costs (25 per cent).

It was estimated that total boat cash costs increased by approximately 8 per cent between 2020/21 and 2021/22. This increase comprised of a 14 per cent rise in variable costs and a 7 per cent decline in fixed costs. The increase in variable costs between 2020/21 and 2021/22 is due to the increased number of days fished over the same period (9 per cent). The decrease in fixed costs between 2020/21 and 2021/22 is mainly attributable to a 16 per cent decline in licence fee over the same period.

In 2021/22, for the fishery as a whole, approximately half of the total boat cash costs were attributable to labour costs, by far the biggest cost item. The labour costs reported in Table 3-5 are comprised of payments to licence owners, crew and others employed in the operation of GSV Prawn fishing businesses. A small amount of imputed unpaid labour was also reported, almost \$177,000 in 2021/22 (Table 3-5). The other significant cash costs were fuel (13 per cent), licence fees (12 per cent), and repairs and maintenance (9 per cent).

#### Cash Income and Profit

The separation of variable and fixed costs from total cash costs enables the calculation of boat gross margin (total boat income less total boat variable costs) as a basic measure of profit (assuming that capital has no alternative use and that as fishing activity varies there is no change in capital or fixed costs). Boat gross margin increased significantly between 2020/21 (\$267,000) and 2021/22 (\$1.1 million). This increase was driven by the increase in total income and small relative increase in variable costs (Table 3-5).

Gross operating surplus (GOS) was calculated as income less total boat cash costs, excluding imputed wages for operator and family members as a cost item. The GOS of all boats in 2021/22 was estimated to be \$578,000, a significant improvement from -\$325,000 in 2020/21 (Table 3-5). Boat cash income is calculated as gross operating surplus with imputed wages (unpaid labour) included as cash costs. Boat cash income in 2021/22 was estimated to be \$401,000, a significant improvement from -\$493,000 in 2020/21 (Table 3-5). The increase in GOS and average boat cash income in 2021/22 was mainly attributable to the rise in GVP.

Table 3-5 Financial performance in the GSV Prawn Fishery, 2019/20 to 2021/22 (total fishery) <sup>a</sup>

	2019/20		2020/21		2021/22	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$2,020,000		\$2,093,000		\$3,190,000	
Variable Costs						
Fuel	\$236,783	12%	\$303,661	12%	\$376,345	13%
Repairs & Maintenance <sup>c</sup>	\$156,077	8%	\$207,355	8%	\$241,486	9%
Provisions	\$9,321	0%	\$12,384	0%	\$14,422	1%
Labour - paid	\$809,905	41%	\$1,063,131	41%	\$1,188,761	43%
(2) Labour - unpaid <sup>d</sup>	\$37,583	2%	\$49,334	2%	\$55,164	2%
Other	\$70,612	4%	\$189,925	7%	\$203,063	7%
(3) Total Variable Costs	\$1,320,281	67%	\$1,825,790	71%	\$2,079,240	75%
Fixed Costs						
Licence Fee	\$294,364	15%	\$409,913	16%	\$342,908	12%
Insurance	\$47,651	2%	\$48,981	2%	\$52,100	2%
(4) Interest	\$23,518	1%	\$20,769	1%	\$21,052	1%
(5) Labour - unpaid <sup>d</sup>	\$117,146	6%	\$118,978	5%	\$121,508	4%
Legal & Accounting	\$32,003	2%	\$32,897	1%	\$34,991	1%
Telephone etc.	\$8,778	0%	\$9,023	0%	\$9,597	0%
Slipping & Mooring	\$97,579	5%	\$100,303	4%	\$106,689	4%
Travel	\$0	0%	\$0	0%	\$0	0%
Office & Admin	\$18,822	1%	\$19,347	1%	\$20,579	1%
(6) Total Fixed Costs	\$639,861	33%	\$760,212	29%	\$709,425	25%
(7) Total Boat Cash Costs (3+6)	\$1,960,142	100%	\$2,586,003	100%	\$2,788,665	100%
Boat Gross Margin (1-3)	\$699,719		\$267,210		\$1,110,760	
(8) Total Unpaid Labour (2+5)	\$154,730		\$168,312		\$176,672	
Gross Operating Surplus (1-7+8)	\$214,587		-\$324,690		\$578,006	
(9) Boat Cash Income (1-7)	\$59,858		-\$493,003		\$401,335	
(10) Depreciation	\$399,071		\$369,262		\$339,453	
(11) Boat Business Profit (9-10)	-\$339,213		-\$862,265		\$61,882	
(12) Profit at Full Equity (11+4)	-\$315,695		-\$841,496		\$82,934	
Boat Capital						
(13) Fishing Gear & Equip	\$6,140,748		\$5,682,059		\$5,223,370	
Licence Value	\$10,400,000		\$10,000,000		\$11,000,000	
(14) Total Boat Capital	\$16,540,748		\$15,682,059		\$16,223,370	
Rate of Return on Fishing Gear & Equip (12/13*100)	-5.1%		-14.8%		1.6%	
Rate of Return on Total Boat Capital (12/14*100)	-1.9%		-5.4%		0.5%	

<sup>a</sup> Financial performance estimates for 2019/20 to 2021/22 are based on the 2018 survey of licence holders and updated for structural changes in the fishery.

<sup>b</sup> Total boat cash costs.

<sup>c</sup> Repairs and maintenance costs have been classified as a variable cost although it is noted that some of these costs may be fixed (e.g. regulated maintenance) Data for these costs during closure years is unavailable.

<sup>d</sup> Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

Source: BDO EconSearch analysis

Gross operating surplus and boat business profit give an indication of the capacity of operators to remain in the fishery in the short to medium term. In 2021/22, boat business profit was \$62,000, a significant increase from -\$862,000 in 2020/21 (Table 3-5).

Profit at full equity is a measure of the profitability of an individual licence holder, assuming the licence holder has full equity in the operation. It is a useful absolute measure of the economic performance of fishing firms. Profit at full equity also increased significantly from around -\$841,000 in 2020/21 to almost \$83,000 in 2021/22 (Table 3-5).

### Return to Capital

There are a number of interpretations of the concept of rate of return to total capital. For the purpose of this analysis it is appropriate to consider the capital as the investment employed by an average licence holder. Capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. It does not include working capital or capital associated with other businesses operated by the licence holder. Additionally, it does not include any capital associated with onshore processing facilities owned and operated by the licence holder. The rate of return to total capital has been calculated as the net profit after depreciation as a percentage of the total capital employed.

The capital value in fishing gear and licence in the GSV Prawn Fishery in 2021/22 was estimated to be over \$16.2 million. This included the operators' estimates of the value of their licences (\$11 million) and estimated investment in boats and fishing gear (\$5.2 million).

The average rate of return to total capital for the fishery is reported in Table 3-5. The rate of return to boat capital (i.e. fishing gear and equipment) was estimated to be 1.6 per cent and the rate of return to total capital was estimated at 0.5 per cent in 2021/22. The increase in these estimates in 2021/22 was due to the increase in total income and small relative increase in total costs.

### Licence values

The value of licences represents a significant part of the capital used by each licence holder in the fishery. Based on information provided by licence holders in the 2018 survey and consultation with industry in 2023 the total value per licence is around \$1.1 million or approximately \$11 million for the whole fishery. The licence value reported in Table 3-5 is for the whole fishery, which comprises of 10 licences.

As there have been few transfers of licences in recent years and the current market value of licences is uncertain, a sensitivity analysis was undertaken to estimate the rate of return to capital for a range of licence values. The results are presented in Table 3-6 for the total value of licences in the fishery.

**Table 3-6 Sensitivity of rate of return to changes in licence value, 2021/22 <sup>a</sup>**

Total Fishery Licence Value	\$5,500,000	\$11,000,000	\$16,500,000
Rate of Return to Total Capital (%)	0.3%	0.5%	0.8%

<sup>a</sup> Based on the licence value estimated for 2021/22 and values 50 per cent above and below this estimate.

Source: BDO EconSearch analysis

Based on the costs and returns shown for the year 2021/22 in Table 3-5, a total licence value for the fishery of \$5.5 million (approximately 50 per cent below the licence value estimated for the fishery in 2021/22) would mean an annual return to the total asset of 0.3 per cent, while a total licence value for the fishery



of \$16.5 million (approximately 50 per cent above the licence value estimated for 2021/22) would mean an annual return to the total asset of 0.8 per cent (Table 3-6).

### 3.6. State and Regional Economic Contribution

Estimates of the economic contribution of the GSV Prawn fishing industry in the SA economy in 2021/22 are presented below.

#### 3.6.1. Measuring direct and flow-on effects

Estimates of the direct economic contribution of the SA GSV Prawn Fishery are consistent with the method employed in PIRSA's Value-added ScoreCard, 2021/22.

The following stages in the marketing chain have therefore, been included in the quantifiable economic contribution:

- the landed beach value of production
- downstream contributions, including the:
  - net value of local (state and regional) processing
  - value of local transport services at all stages of the marketing chain
  - net value of local retail and food service (e.g. hotels & restaurants) trade.

Each of these activities generates flow-on effects to other sectors through purchases of inputs and the employment of labour. These flow-on effects have been estimated using input-output analysis. Input-output analysis is widely used in economic impact analysis and is a practical method for measuring economic contributions at regional and state levels.

Economic contributions at the state level were based on a model of SA prepared for the Department of Premier and Cabinet (BDO EconSearch 2021).

In order to compile a representative cost structure for the fishing sector, costs per licence were derived from data provided by operators in the fishery in a financial survey and updated for 2021/22. On an item-by-item basis, the expenditures were allocated between those occurring in SA and those goods and services imported from outside the state.

Estimates of the net value of state processing margins and retail and food service trade margins were derived from PIRSA's value-added ScoreCard (Seafood Scorecard, 2021/22) (PIRSA, pers. comm.). Estimates of the net value of local transport margins and capital expenditure per licence holder were derived from the survey of licence holders.

Economic contributions have been specified in terms of the following economic indicators:

- value of output
- employment
- household income
- contribution to gross state product.

**Value of output** is a measure of the gross revenue of goods and services produced by commercial organisations plus gross expenditure by government agencies. This indicator needs to be used with care as it includes elements of double counting.

**Employment** is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent jobs.

**Household income** is a component of Gross State Product (GSP) and is a measure of wages and salaries, drawings by owner operators and other payments to labour including overtime payments and income tax, but excluding payroll tax.

**Contribution to GSP** is a measure of the net contribution of an activity to the state economy. Contribution to GSP is measured as value of output less the cost of goods and services (including imports) used in producing the output. It can also be measured as household income plus other value added (gross operating surplus and all taxes, less subsidies). It represents payments to the primary inputs of production (labour, capital and land). Using contribution to GSP as a measure of economic contribution avoids the problem of double counting that may arise from using value of output for this purpose.

### 3.6.2. Economic contributions at the state and regional levels

Estimates of the economic contribution generated in 2021/22 by the GSV Prawn fishing industry in SA is presented in Table 3-7.

#### Value of output

The value of output generated directly in SA by GSV Prawn fishing enterprises summed to \$3.2 million in 2021/22 (Table 3-7), while output by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$3.1 million.

Flow-ons to other sectors of the state economy added another \$8.8 million in output. The sectors most affected were the business services, manufacturing, trade, and transport sectors. The total output contribution in SA (direct plus indirect) was estimated to be \$15.1 million in 2021/22.

#### Employment and household income

In 2021/22, the GSV Prawn Fishery was responsible for the direct employment of around 18 full-time equivalents (fte) and downstream activities created employment of around 24 fte jobs state-wide. Flow-on business activity was estimated to generate a further 38 fte jobs state-wide. These state-wide jobs were concentrated in the business services (9), trade (7), manufacturing (3), and transport (2) sectors. The total employment contribution in SA was estimated to be 80 fte jobs.

Personal income of \$1.4 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$1.3 million in downstream activities in SA. An additional \$2.8 million was earned by wage earners in other businesses in the state as a result of fishing and associated downstream activities. The total household income contribution in SA was \$5.5 million.

#### Contribution to GSP

As noted above, contribution to GSP is measured as value of output less the cost of goods and services (including imports) used in producing the output. In 2021/22, total GSV Prawn Fishery related contribution to GSP in SA was \$8.6 million, \$1.9 million generated by fishing directly, \$1.8 million generated by downstream activities and \$4.9 million generated in other sectors of the state economy.

Table 3-7 The economic contribution of the GSV Prawn fishing industry in SA, 2021/22

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	3.2	21%	18	23%	1.4	25%	1.9	22%
Processing	0.1	1%	0	0%	0.0	0%	0.0	0%
Transport	0.0	0%	0	0%	0.0	0%	0.0	0%
Retail	1.9	12%	14	17%	0.8	15%	1.1	13%
Food services	1.0	6%	9	11%	0.4	7%	0.5	6%
Capital expenditure <sup>b</sup>	0.2	1%	1	1%	0.1	1%	0.1	1%
<b>Total Direct <sup>c</sup></b>	<b>6.3</b>	<b>42%</b>	<b>43</b>	<b>53%</b>	<b>2.7</b>	<b>48%</b>	<b>3.6</b>	<b>42%</b>
<b>Flow-on effects</b>								
Trade	1.1	7%	7	8%	0.4	8%	0.6	7%
Manufacturing	1.1	7%	3	4%	0.2	4%	0.3	4%
Business Services	1.5	10%	9	11%	0.7	13%	0.8	9%
Transport	0.6	4%	2	3%	0.2	3%	0.2	3%
Other Sectors	4.6	30%	17	22%	1.3	24%	2.9	34%
<b>Total Flow-on <sup>c</sup></b>	<b>8.8</b>	<b>58%</b>	<b>38</b>	<b>47%</b>	<b>2.8</b>	<b>52%</b>	<b>4.9</b>	<b>58%</b>
<b>Total <sup>c</sup></b>	<b>15.1</b>	<b>100%</b>	<b>80</b>	<b>100%</b>	<b>5.5</b>	<b>100%</b>	<b>8.6</b>	<b>100%</b>
Total/Direct	2.4	-	1.9	-	2.1	-	2.4	-
Total/Tonne	\$108,600	-	0.58	-	\$39,300	-	\$61,700	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 10 full-time and 18 part-time jobs, that is, 28 jobs in aggregate, which was estimated to be equal to 18 fte jobs.

<sup>b</sup> Capital expenditure includes fishing related expenditure (boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment) and processing relating expenditure (sheds, buildings and freezers).

<sup>c</sup> Totals may not sum due to rounding.

Source: BDO EconSearch analysis

### Total contributions over time

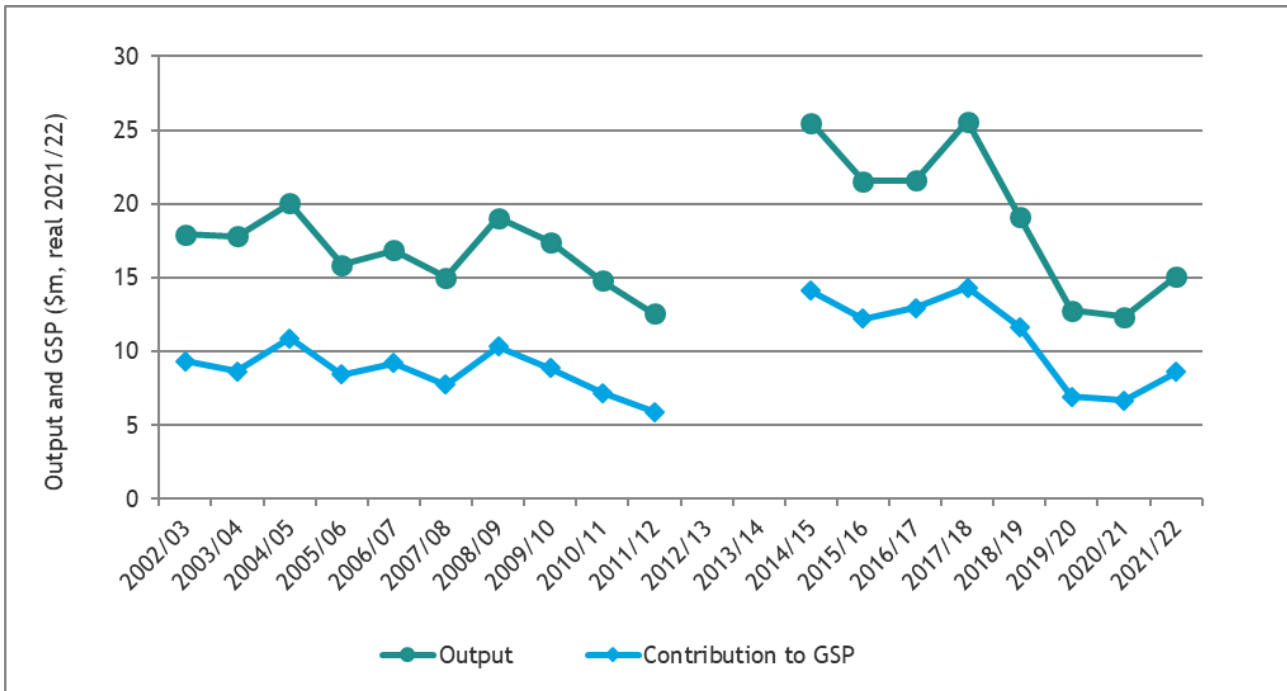
Figure 3-3 and Figure 3-4 illustrate the total economic contribution (direct plus flow-on effects) of the fishery on the SA economy for the 20 years, 2002/03 to 2021/22. Estimates of economic contribution are expressed in 2021/22 dollars. Adelaide CPI was used to adjust for inflation (ABS 2022a).

As economic contribution estimates for the years 2002/03 to 2021/22 are based on different survey samples and techniques, some of the differences between years is, attributable to sampling variability. Care should be taken when using value of output as a measure of economic contribution as it includes elements of double counting. Using contribution to GSP is the preferred measure of net contribution to the SA economy.

The change in output, household income and GSP contributions are closely related to changes in the GVP for the fishery (Figure 3-3 and Figure 3-4). Output is a measure of the gross revenue of goods and services and contribution to GSP is a measure of the net contribution of an activity to the state economy. Both of

these measures approximately doubled between 2011/12 and 2017/18. This is expected given that real GVP also more than doubled over the same period (Figure 3-2). These indicators dropped sharply in 2018/19 and 2019/20 before stabilising in 2020/21 and 2021/22. Long term trends in the economic contributions of the fishery are discussed further in Section 5.

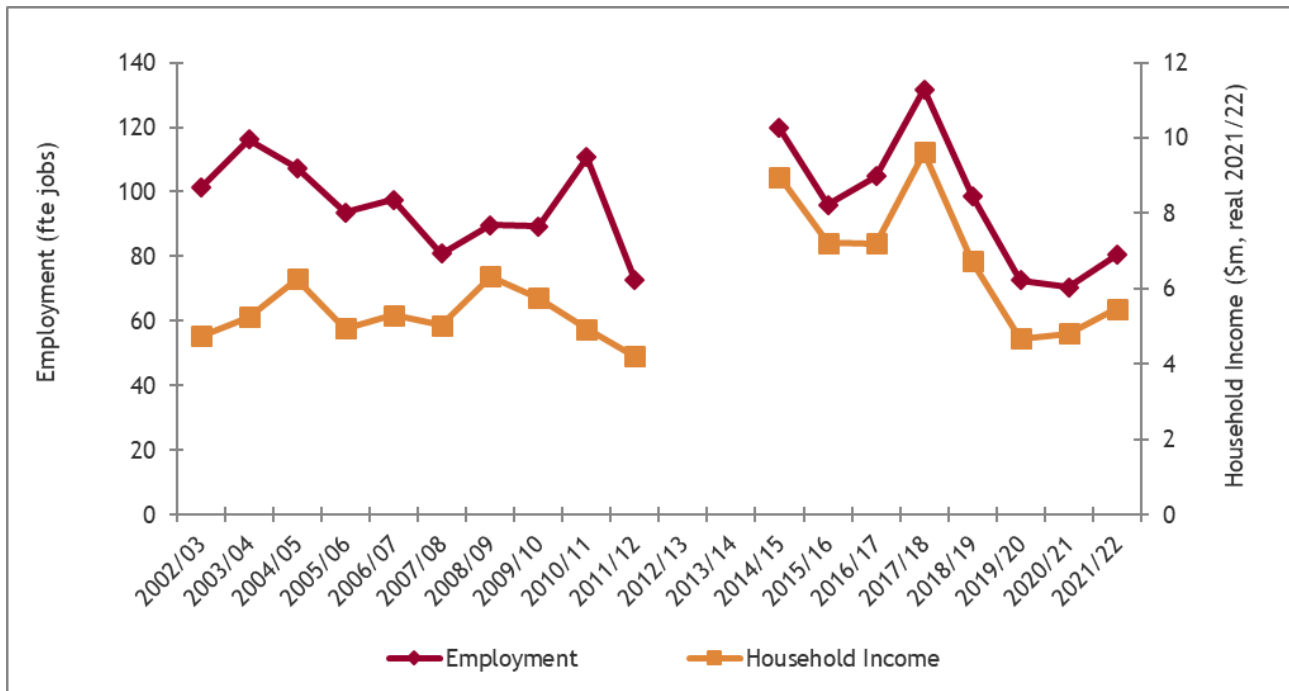
Figure 3-3 Total gross state product and output contribution of the GSV Prawn Fishery on the SA economy, 2002/03 to 2021/22<sup>a</sup>



<sup>a</sup> Monetary values have been converted to 2021/22 dollars using the Adelaide CPI (ABS 2022a).

Source: BDO EconSearch (2022b) and BDO EconSearch analysis

Figure 3-4 Total employment and household income contribution of the GSV Prawn Fishery on the SA economy, 2002/03 to 2021/22<sup>a</sup>



<sup>a</sup> See notes for Figure 3-3

Source: BDO EconSearch (2022b) and BDO EconSearch analysis

### 3.7. Net Economic Return

Net economic return is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). Net economic return is maximised when economic efficiency is maximised. Net economic return<sup>1</sup> can also be defined as the difference between the price of a good produced using a natural resource and the unit costs of turning that natural resource into the good. In this case the natural resource is the GSV Prawn Fishery and the good produced is the landed Prawn.

The unit costs or long term costs all need to be covered if the licence holder is to remain in the fishery. Otherwise the fisher needs to accept a lower payment for labour and return on capital than they could get elsewhere. These long-term costs include direct operating costs such as fuel, labour (including the opportunity cost of a self-employed fisher’s own labour), ice, overheads such as administration and licence fees, and the cost of capital invested in the boat and gear (excluding licence). Capital cost includes depreciation and the opportunity cost of the capital applied to the fishery. The opportunity cost is equivalent to what the fisher’s investment could have earned in the next best alternative use.

<sup>1</sup> Net economic return or economic rent is comprised of three types of rent: entrepreneurial rent, quasi-rent and resource rent. As in any business some operators are more skilful than others and will therefore earn more profit. These profits, which are one component of net economic return, are entrepreneurial rents. In the short-term fishers may earn large surpluses over costs, which may provide prima facie evidence of substantial resource rents. However, there are some circumstances where such surpluses can occur but they are not true rents. These are referred to as quasi-rents. One example is where a fishery is developing or recovering and there may be under-investment in the fishery. Another example is where there is a short-term but unsustainable increase in price due to, for example, exchange rate fluctuations. However, some profits will be obtained because the natural resource being used (i.e. the fishery) has a value. These profits are described as resource rents and are also a component of net economic return.

Determining the opportunity cost of capital involves an assessment of the degree of financial risk involved in the activity. For a risk-free operation, an appropriate opportunity cost of capital might be the long-term real rate of return on government bonds. The greater the risks involved, the greater is the necessary return on capital to justify the investment in that particular activity. For this analysis the long term (10 year) real rate of return on government (treasury) bonds of 5 per cent has been used and a risk premium of 5 per cent has been applied.

What remains after the value of these inputs (labour, capital, materials and services) has been netted out is the value of the natural resource itself. The net economic return generated in the GSV Prawn Fishery was estimated to be approximately -\$376,000 in 2021/22, an improvement from -\$1.4 million in 2020/21 (Table 3-8). The increase in net economic return was primarily due to the increase in income.

**Table 3-8 Net economic return <sup>a</sup> in the GSV Prawn Fishery, 2002/03 to 2021/22 (\$'000) <sup>b</sup>**

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	Net Economic Return	Net Economic Return (0% risk premium, 2/3 opportunity cost of labour)
2002/03	6,759	2,183	2,670	1,358	492	56	382
2003/04	4,828	1,587	2,279	2,766	1,002	-2,807	-2,239
2004/05	4,001	1,502	1,367	1,669	1,235	-1,772	-1,055
2005/06	4,191	1,638	1,689	1,981	1,466	-2,583	-1,724
2006/07	4,693	1,834	1,617	1,894	1,401	-2,052	-1,221
2007/08	3,351	1,339	1,217	939	1,312	-1,454	-730
2008/09	4,709	1,922	1,422	1,210	1,690	-1,534	-599
2009/10	3,383	1,464	1,396	1,092	1,526	-2,097	-1,253
2010/11	2,678	1,189	1,370	976	1,364	-2,221	-1,467
2011/12	2,200	1,039	1,374	896	1,251	-2,361	-1,665
2012/13 <sup>c</sup>	0	188	471	988	1,458	-3,105	-2,313
2013/14 <sup>c</sup>	0	229	507	1,016	1,657	-3,409	-2,504
2014/15	4,831	1,838	1,373	749	1,302	-431	305
2015/16	4,282	1,751	1,376	705	1,225	-774	-81
2016/17	5,011	1,714	1,383	651	1,133	130	776
2017/18	5,363	1,976	1,642	731	1,125	-112	537
2018/19	4,353	1,417	1,274	473	727	462	886
2019/20	2,209	1,055	1,093	436	671	-1,047	-655
2020/21	2,226	1,310	1,347	393	604	-1,427	-1,066
2021/22	3,190	1,365	1,339	339	522	-376	-56

<sup>a</sup> Adjusted for sample bias.

<sup>b</sup> Values are presented in real 2021/22 dollars. Nominal values of net economic return are presented in Appendix 3.

<sup>c</sup> The fishery was closed for 2012/13 and 2013/14 but costs were still incurred by licence holders (see Appendix Table 3-4).

Source: BDO EconSearch analysis

Table 3-8 also presents a sensitivity analysis in the far-right column to show the effect of adjusting the opportunity cost of capital (using a risk premium of zero) and labour (valuing unpaid labour at two thirds of

the standard estimate) on net economic return. Under the assumptions of the sensitivity analysis, net economic return would have been -\$56,000 in 2021/22.

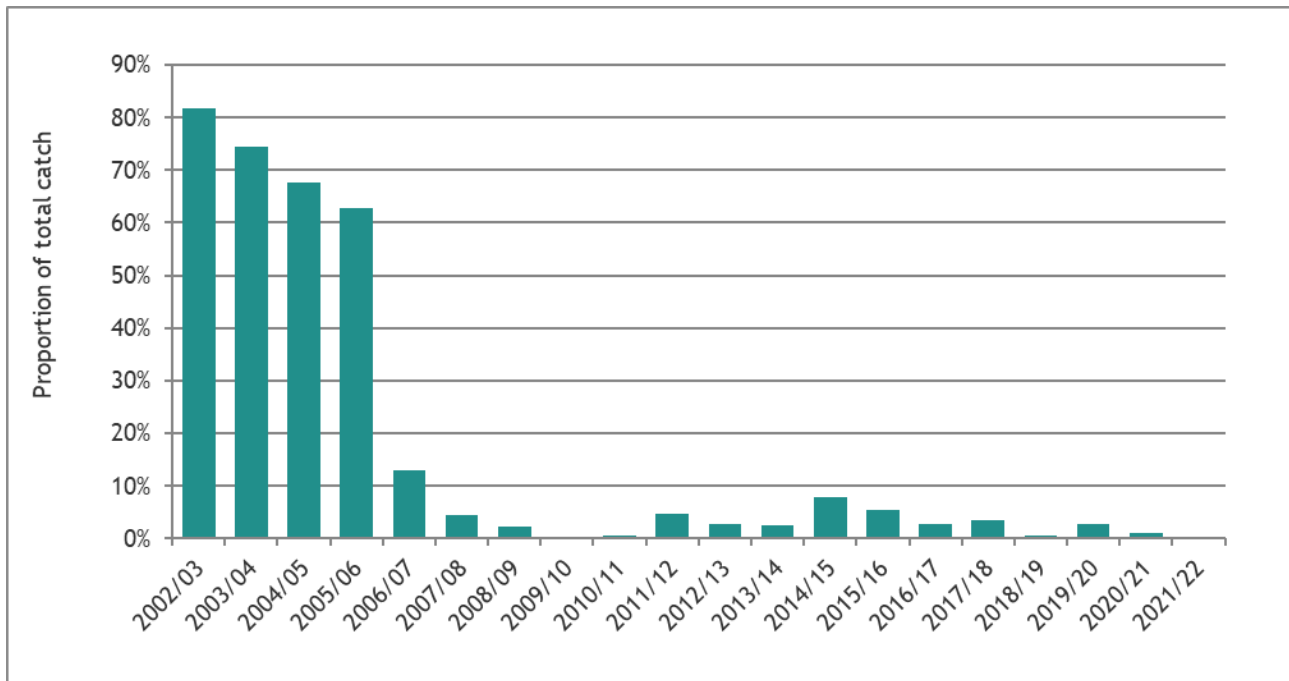
When net economic return is generated in a fishery and there are transferable licences, the net economic return represents a return to the value of the licences. The aggregate value of licences was estimated to be \$11 million (\$1.2 million per licence). An annual net economic return of -\$56,000 represents a return of -3.4 per cent to the capital value of the fishery.

## 4. OTHER INDICATORS

### 4.1. Prawn Exports from South Australia

Figure 4-1 shows a historical breakdown of total overseas exports of prawns from SA for the period 2002/03 to 2021/22. Over this period the total quantity of Prawns exported from SA has declined from 1,422 tonnes in 2002/03 to 2 tonnes in 2021/22, now a negligible proportion of catch. This is attributable to a collection of factors that have shifted the Prawn market across this period, including an increase in lower priced Prawn imports, a decrease in catch levels and an increase in domestic price.

Figure 4-1 Prawn exports from SA as a proportion of total SA catch <sup>a</sup>, 2002/03 to 2021/22



<sup>a</sup> Exports from the Spencer Gulf, GSV and West Coast Prawn fisheries in aggregate. These data could include product that has been shipped from interstate (for processing) and then exported from SA. Therefore, in addition to Western King Prawns caught in SA fisheries, these data could include other Prawn species caught in other Australian fisheries, accordingly the proportion of total catch has the potential to be greater than 100 per cent. The data do not include product that is shipped interstate from SA and then exported from other states.

Source: Table 3-2

### 4.2. External Factors Influencing the Economic Condition of the Fishery

There are a number of factors in 2021/22 that have impacted on the economic performance of the GSV Prawn Fishery. Most of these are likely to continue to affect economic outcomes in the future.

#### 4.2.1. Biological performance indicators

Each year, SARDI publishes a stock status report to assess the biological status of the fishery. The current management plan (PIRSA 2022) provides the decision rules for classifying stock status relative to limit, trigger and target reference points for three performance indicators, including, standardised annual CPUE, standardised fishery independent survey (FIS) CPUE and the FIS recruitment index (FRI). Key results from the 2021/22 report (McLeay and Hooper 2022) follow:



- Standardised annual CPUE was 4 per cent higher in 2021/22 than in 2020/21. In 2021/22 standardised annual CPUE was 9 per cent above the target reference point.
- Standardised FIS CPUE was lower in 2021/22 than in 2020/21 and was the lowest estimate on record. It was below the target reference point, but 13.5 per cent above the trigger reference point.
- FRI was higher in 2021/22 than in 2020/21 and was the highest FRI estimate on record.
- The status of the fishery was classified as sustainable in the report.

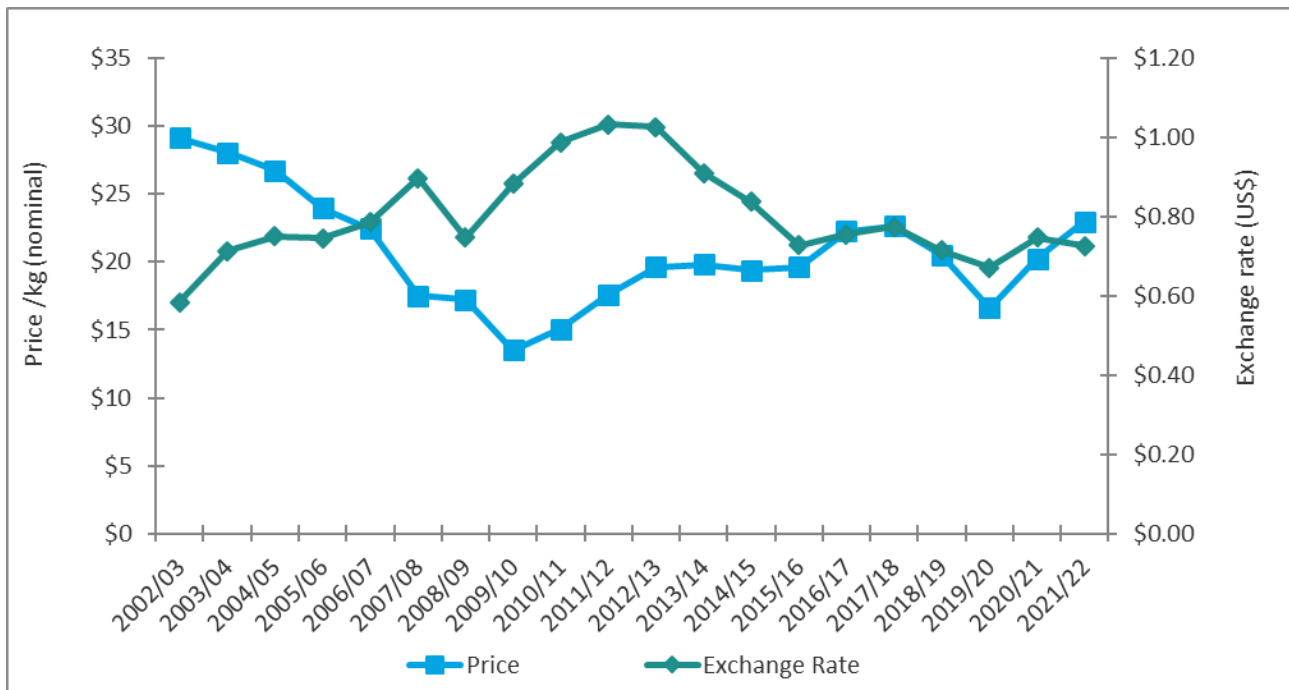
#### 4.2.2. Exchange rates

Up until 2005/06 a significant proportion of the SA Prawn catch was exported overseas. Prior to 2005/06 shifts in the value of the Australian dollar would have a significant impact on the economic performance of the fishery due to its influence on the price of exports overseas. After 2005/06, with minimal exports, shifts in the Australian dollar affect the fishery through changing the price of importing Prawns to Australia.

Prawn imports to Australia are now more significant, averaging 17,000 tonnes per annum over the past 5 years (see Section 4.2.3). A lower exchange rate will decrease the demand for imports as they become more expensive and increase the competitiveness of domestic Prawns. A higher exchange rate will do the opposite, reducing the competitiveness of domestic Prawns through making imported products more affordable. The relationship between the average price in the SG Prawn Fishery and the exchange rate (USD) between 2002/03 to 2021/22 can be observed in Figure 4-2.

A widely used measure of the relationship between two variables, such as price and exchange rate, is the coefficient of correlation. The coefficient of correlation can range in value from 1.0 for a perfect positive correlation to -1.0 for a perfect inverse correlation. The coefficient of correlation between the exchange rate (USD) and the average price in the GSV Prawn Fishery for the period 2001/02 to 2020/21 is -0.59. This indicates that there is a moderate to strong inverse relationship between the two variables. Thus, when the Australian dollar appreciates, with other factors held constant, there is, generally, a corresponding decline in the average price of Prawns.

Figure 4-2 Exchange rate (USD) and average price for GSV Prawns, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> The price reported for 2012/13 and 2013/14 is from the Spencer Gulf and West Coast Prawn Fisheries as the GSV Prawn Fishery was closed over this period.

Source: SARDI Aquatic Sciences and RBA (2022b) and previous issues.

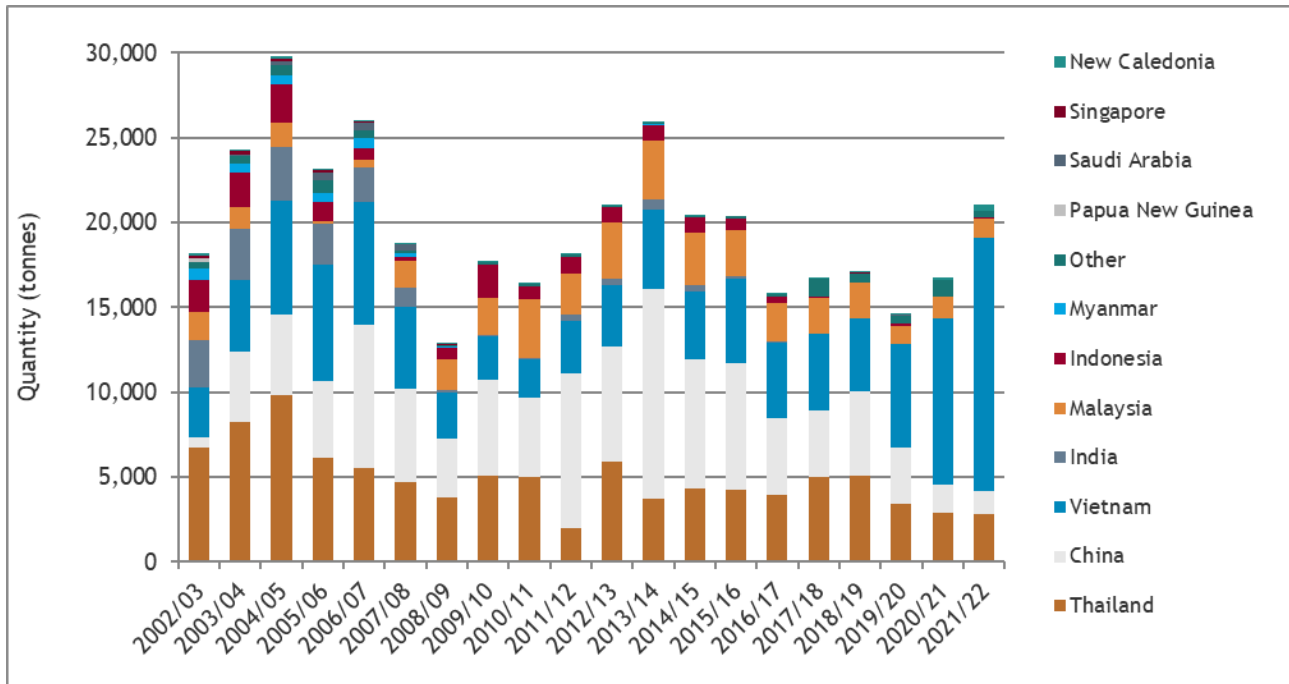
### 4.2.3. Prawn imports into Australia

Figure 4-3 and Figure 4-4 provide an overview of the quantity and value of total Prawn imports into Australia by country of origin, for the period 2002/03 to 2021/22. The total quantity of Prawns imported into Australia increased by 65 per cent between 2002/03 and 2004/05 before declining to the 20 year minimum of 13,000 tonnes in 2008/09. This decline between 2004/05 and 2008/09 may be attributable to the quarantine measures on the importation of Prawns implemented by Biosecurity Australia in 2007 (Biosecurity Australia 2007). The quantity of Prawns imported fluctuated between 2008/09 and 2021/22, peaking at almost 26,000 tonnes in 2013/14. Prawn imports reached 21,000 tonnes in 2021/22, the highest quantity since 2013/14 and a 44 per cent increase from 2019/20. The increase in the quantity of prawns imported in 2012/13 and 2013/14 coincided with the closure of the GSV Prawn Fishery in these years, and more recently the disruption of international markets due to COVID-19.

The nominal value (Australian Customs Value)<sup>2</sup> of Prawn imports decreased between 2002/03 to 2008/09, reaching a 20 year minimum of \$135 million in 2008/09. The value of Prawn imports increased significantly in 2013/14 to reach \$340 million. The value of imports has fluctuated since but generally remained higher than prior to 2013/14. The value of Prawn imports increased between 2019/20 and 2021/22 by 40 per cent, reaching \$323 million in 2021/22. This increase is partly attributable to the disruption of international markets due to COVID-19.

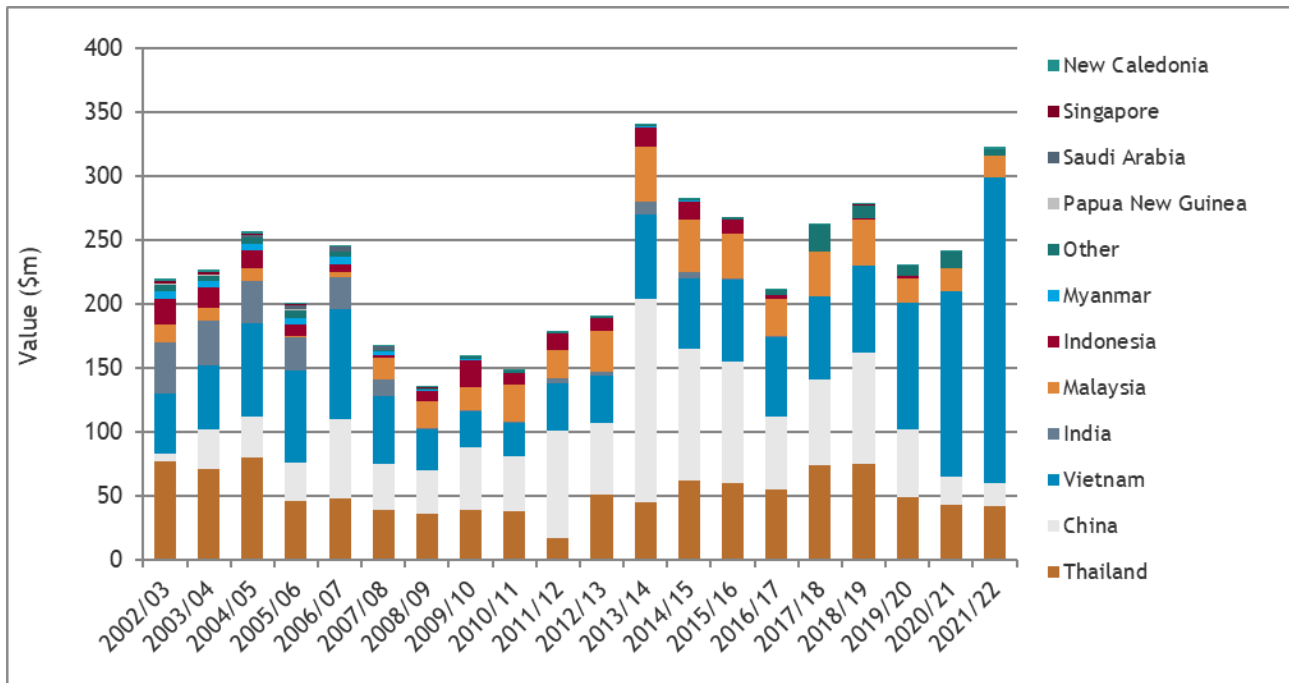
<sup>2</sup> The Australian Customs Value is the value placed on goods imported into Australia based on information advised by the importer. The Customs value is generally an estimate of the transaction value of the goods imported.

Figure 4-3 Prawn imports into Australia, quantity (t) by country of origin, 2002/03 to 2021/22



Source: Australian Bureau of Statistics (by request)

Figure 4-4 Prawn imports into Australia, value (\$m) by country of origin, 2002/03 to 2021/22



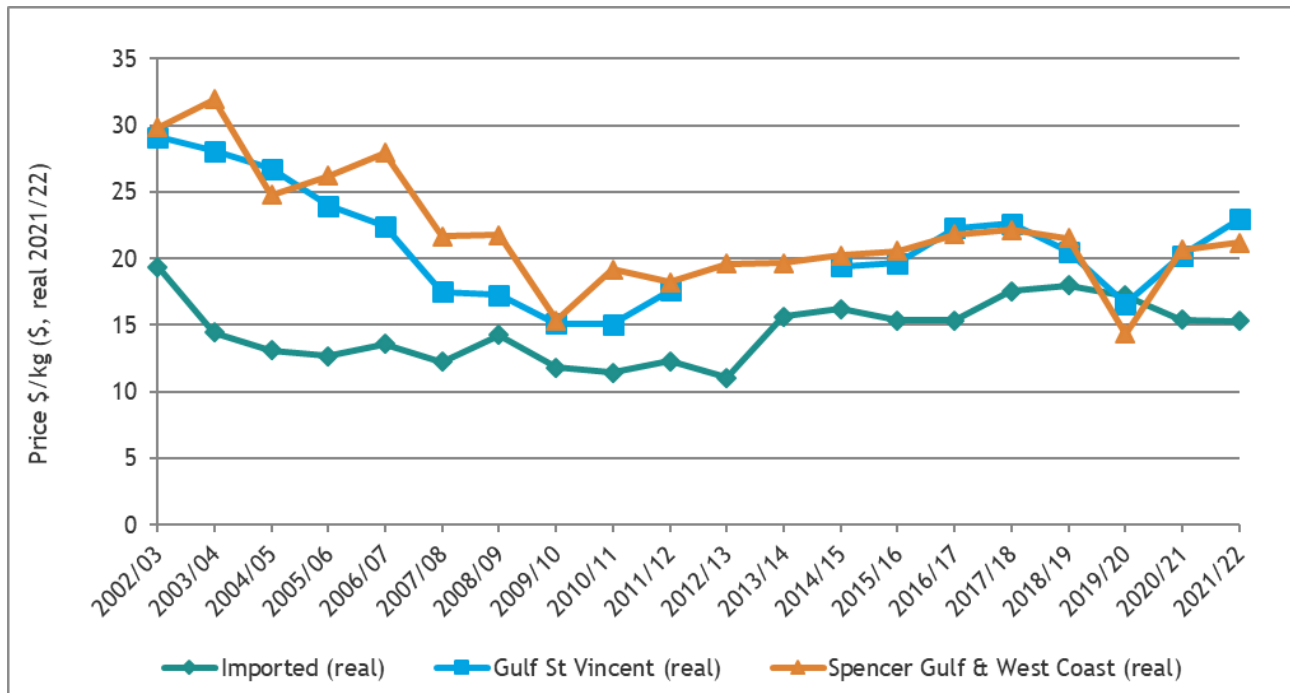
Source: Australian Bureau of Statistics (by request)

Changes in the value of imports results from changes in import quantity. Across the 20-year period, the average nominal price of Prawn imports was \$11.79/kg, 23 per cent below that in 2021/22 (\$15.30/kg). In real terms this reflects a 5 per cent difference between the 20-year average price of Prawn imports and the 2021/22 average price.

Over the period 2002/03 to 2021/22, the most significant countries of import origin were China, Vietnam, Thailand and Malaysia, accounting on average for 27, 27, 25 and 10 per cent, respectively, of imports quantity into Australia. In 2021/22, the most significant import countries of origin by volume and value were Vietnam (71 per cent of volume, 74 per cent of value), Thailand (13 per cent of volume, 13 per cent value), China (6 per cent of volume, 6 per cent of value), and Malaysia (5 per cent of volume, 5 per cent value) (Figure 4-3 and Figure 4-4).

Figure 4-5 highlights the trends in prices received for Prawns caught in the two SA Prawn fisheries and for Prawns imported into Australia from overseas. To enable comparison between years, nominal prices have been adjusted using the consumer price index (ABS 2022a) to calculate real prices in terms of 2021/22 dollars. For the 20 years included in the analysis, 2002/03 to 2021/22, the real price of imported Prawns in 2021/22 was 5 per cent lower than the average for the 20 year period. Over this period the real price received for Prawns caught in the Gulf St Vincent fishery decreased by 21 per cent and in the Spencer Gulf Fishery by 29 per cent. The declining real price trend is similar in both SA Prawn fisheries over this period. Imports of cheaper aquaculture Prawns into Australia have led to increasing efforts by the SA Prawn fisheries to promote its product as a premium product.

Figure 4-5 Real prices for imported and SA Prawns, 2002/03 to 2021/22



Source: ABS (by request), ABS (2022a) and SARDI Aquatic Sciences

### **4.3. Contribution to the Community**

In addition to the economic contribution made to SA (Section 3.6), the GSV Prawn Fishery also contributes to the social, environmental and heritage values of the region, through involvement in community-support activities and contribution to the provision, maintenance and expansion of local services and businesses.

As a part of the 2018 survey, licence holders were asked to provide information relating to the ways in which they contribute to their local community. Their responses are summarised in BDO EconSearch (2022b).

### **4.4. Social Indicators**

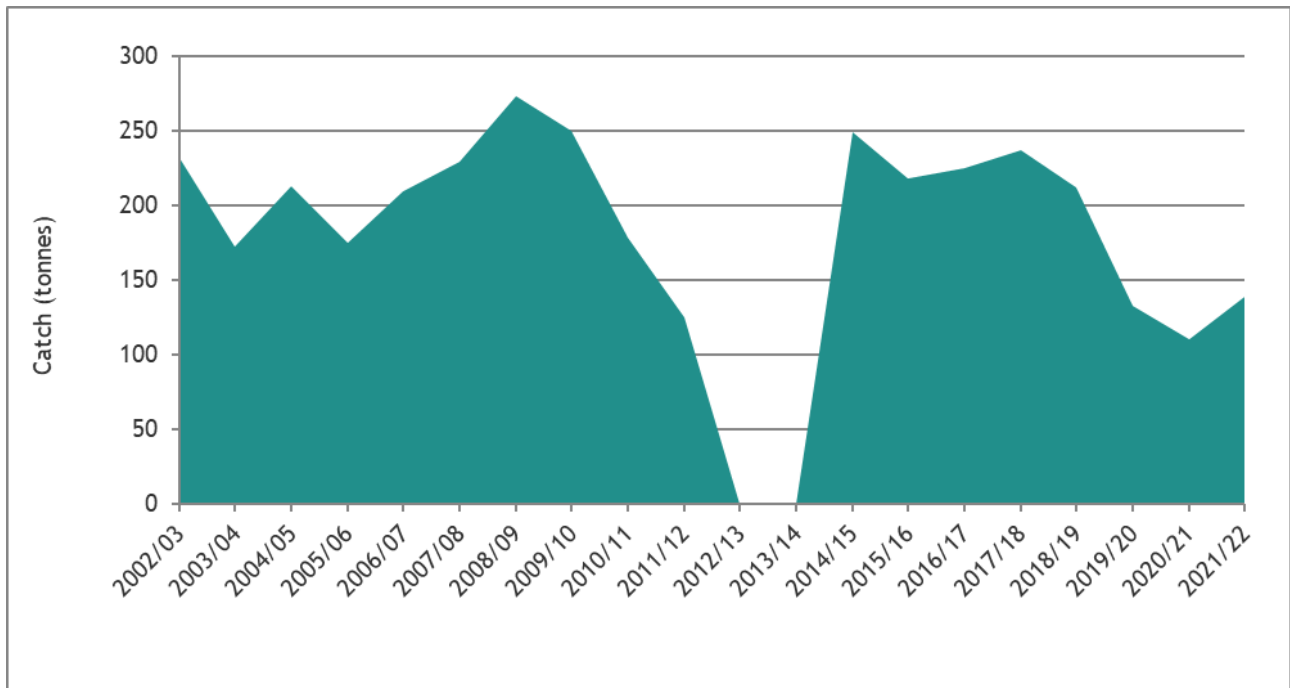
In 2014 and 2018, the economic indicators survey of commercial fisheries was extended to include the collection of social indicators. The results of the social indicators component of the survey are detailed in BDO EconSearch (2022b).

## 5. LONG TERM ECONOMIC TRENDS IN THE FISHERY

### 5.1. Catch and Gross Value of Production

Figure 5-1 shows the annual catch between 2002/03 to 2021/22. Despite fluctuations, catch increased from 232 tonnes in 2002/03 to 273 tonnes in 2008/09. Catch then followed a declining trend until 2011/12 when it was only 125 tonnes and the fishery was closed for two years. In 2014/15, catch was 249 tonnes but it has since declined to 139 in 2021/22.

Figure 5-1 GSV Prawn Fishery catch, 2002/03 to 2021/22

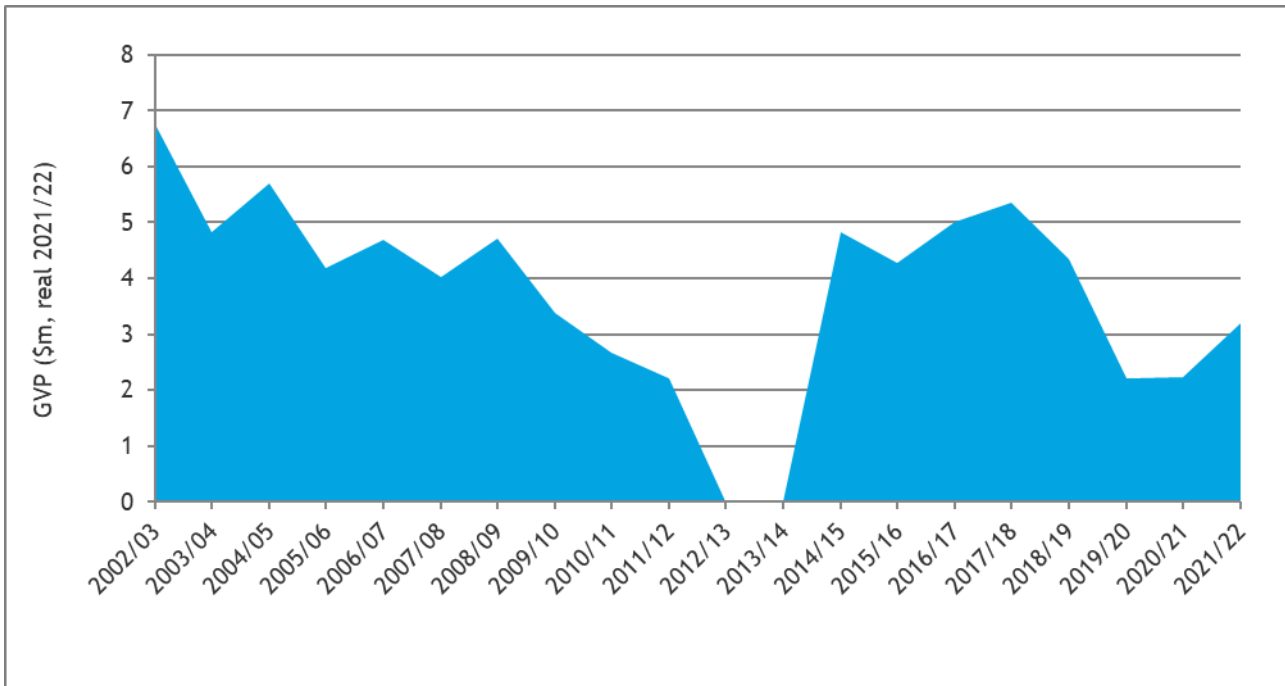


Source: Table 3-2

The real GVP for the GSV Prawn Fishery for the period 2002/03 to 2021/22 is illustrated in Figure 5-2. Despite fluctuations, real GVP declined between 2002/03 (\$6.8 million) and 2011/12 (\$2.2 million) before the fishery was closed. After the fishery reopened in 2014/15 real GVP (\$4.8 million) was at its highest level since 2004/05. As with catch, GVP has followed a declining trend since 2014/15. In 2021/22 GVP was \$3.2 million, a 43 per cent increase from 2020/21 (\$2.2 million).

Figure 5-3 illustrates the trend in both the nominal and the real price for GSV Prawns over the last 20 years. Overall, the nominal price for Prawns was 26 per cent higher in 2021/22 than in 2002/03, but the real price was around 21 per cent lower.

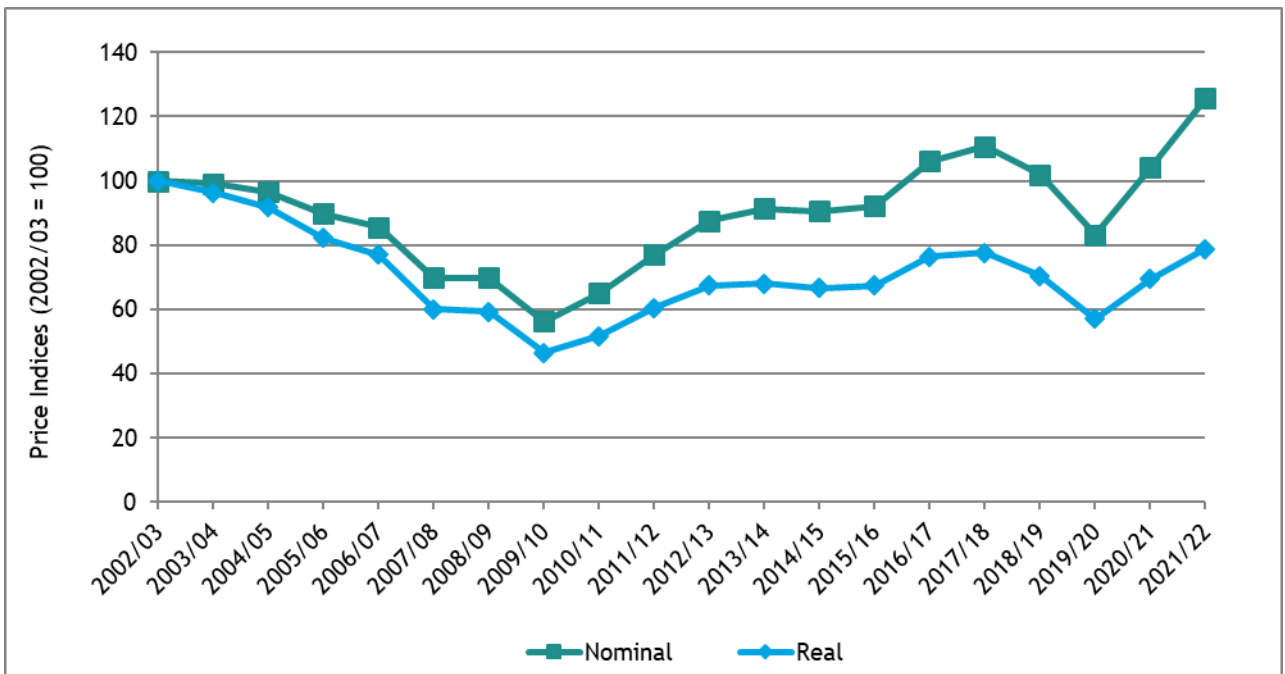
Figure 5-2 GSV Prawn Fishery GVP, 2002/03 to 2021/22<sup>a</sup>



<sup>a</sup> GVP is expressed in real 2021/22 dollars.

Source: Table 3-2

Figure 5-3 Price indices for the GSV Prawn Fishery <sup>a</sup>



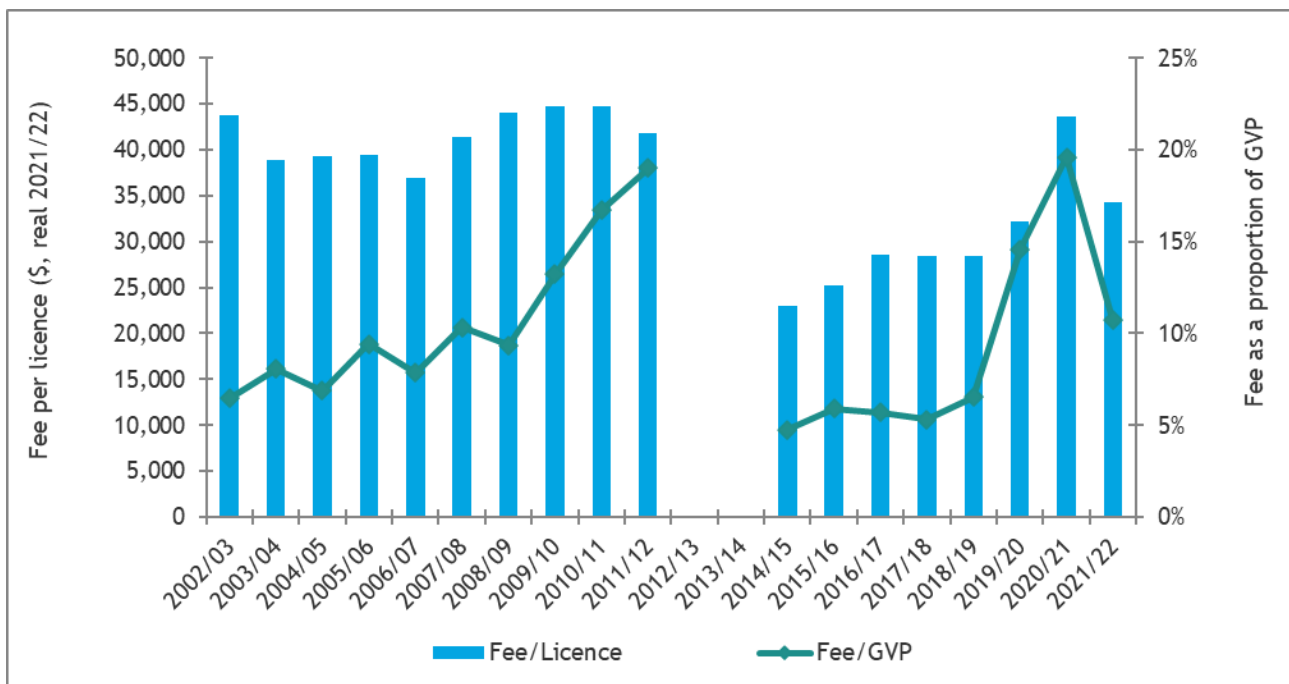
<sup>a</sup> Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The CPI (consumer price index) has been used to make this adjustment (ABS 2022a). It enables meaningful comparisons of prices to be made between years.

Source: Table 3-2

## 5.2. Management Costs

The average management fee per licence and the licence fee as a proportion of GVP are illustrated in Figure 5-4. Between 2001/02 and 2011/12 licence fees as a proportion of GVP increased steadily in real terms, while licence fee per licence remained stable. The increase in licence fees as a proportion of GVP was due to the decrease in real GVP over this period. Each measure was lower when the fishery was reopened in 2014/15 through to 2018/19 due to reduced licence fees and improved GVP. In 2021/22, aggregate licence fees decreased and GVP increased, resulting in an overall decline in licence fees per licence and as a proportion of GVP.

Figure 5-4 Management fee per licence holder and as a proportion of GVP, GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of management costs and GVP are expressed in real 2021/22 dollars.

Source: Table 3-4

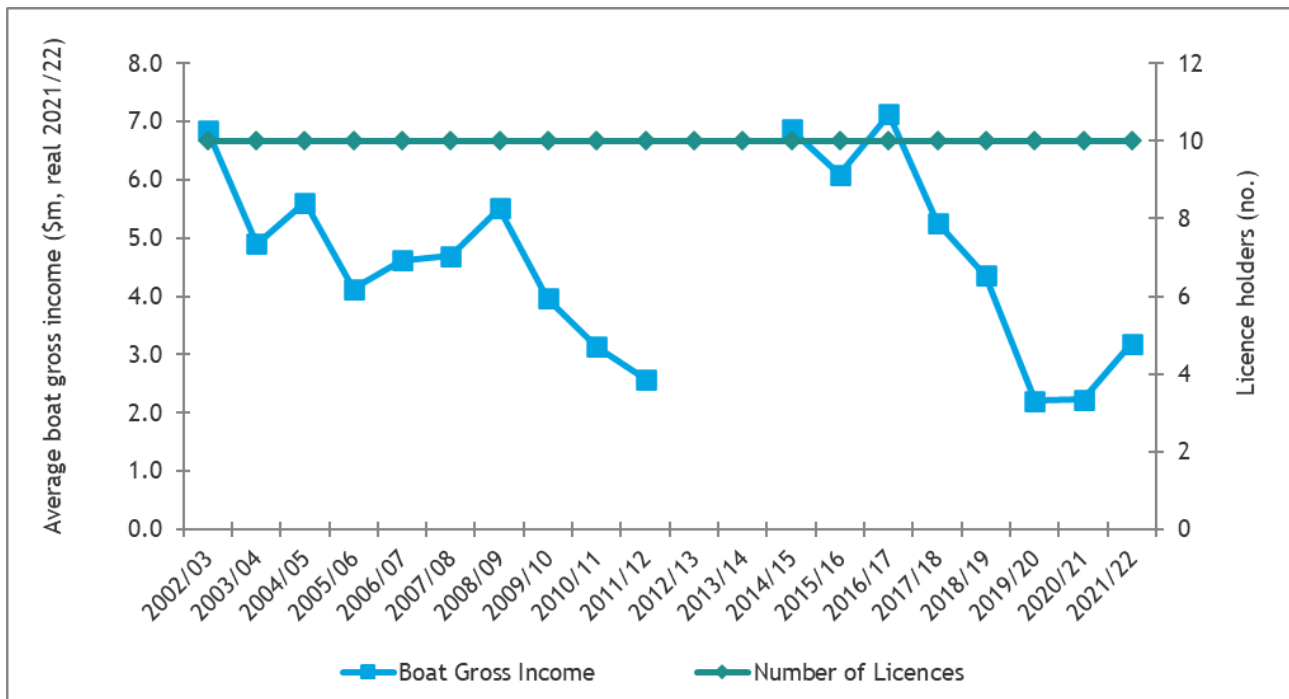
## 5.3. Financial Performance Indicators

### Total income

Total income and total number of licences in the fishery for the period 2002/03 to 2021/22 are illustrated in Figure 5-5. The total number of licences in the fishery has not changed over the period of analysis, remaining at 10 licences for the last 20 years. The total real fishery income (GVP) declined between 2002/03 and 2011/12 before the fishery closure. Total income remained high for the first few years after the fishery reopened in 2014/15 before declining through to 2020/21. In 2021/22 GVP increased to \$3.2 million, a 43 per cent increase from 2020/21 (\$2.2 million).



Figure 5-5 Fishery income and number of licences in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of average boat gross income are expressed in real 2021/22 dollars.

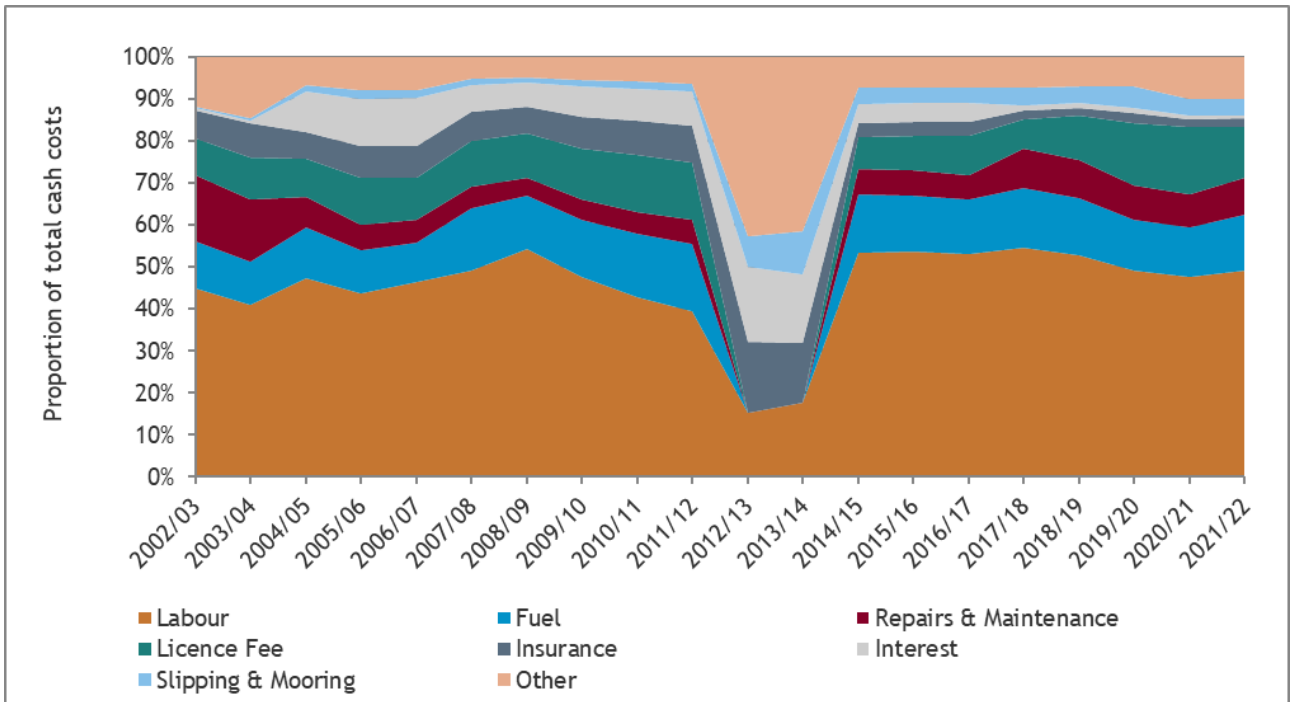
Source: Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

### Operating cost trends

A breakdown of major cost items as a proportion of total cash costs is illustrated in Figure 5-6. In each year of the analysis labour costs accounted for the largest share of total cash costs, with the exception of 2012/13 and 2013/14, the years that the fishery was closed. The labour costs are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. The proportion of operating costs made up by labour varies with GVP as the ratio of variable to fixed costs changes. This relationship also holds for other variable costs but it is particularly clear for labour as variable costs are mostly labour costs and labour is usually paid as a proportion of the value of catch. Other significant cash costs were fuel, repairs and maintenance, licence fees, interest and insurance (Figure 5-6).

The cash costs detailed in Figure 5-6 can be categorised as either variable or fixed costs (see Table 3-5). Total variable costs and total fixed costs are illustrated in Figure 5-7. Total variable costs slowly decreased (with some fluctuations) from 2002/03 to 2011/12. This appears to be linked to reductions in labour costs as fuel, repairs and maintenance, and other variable costs have been relatively constant. As gross income has reduced over time, wages (as a percentage of gross income) have declined as well. As would be expected, total fixed costs have not fluctuated significantly from year to year and continued to be incurred by licence holders in 2012/13 and 2013/14, while the fishery was closed. Variable costs increased to levels not seen since 2002/03 once the fishery was reopened in 2014/15 but declined until 2019/20. Fixed costs remained relatively stable between 2002/03 and 2016/17 before falling slightly in 2017/18. Both variable and fixed costs have increased marginally since 2019/20 but remained relatively stable (Figure 5-7).

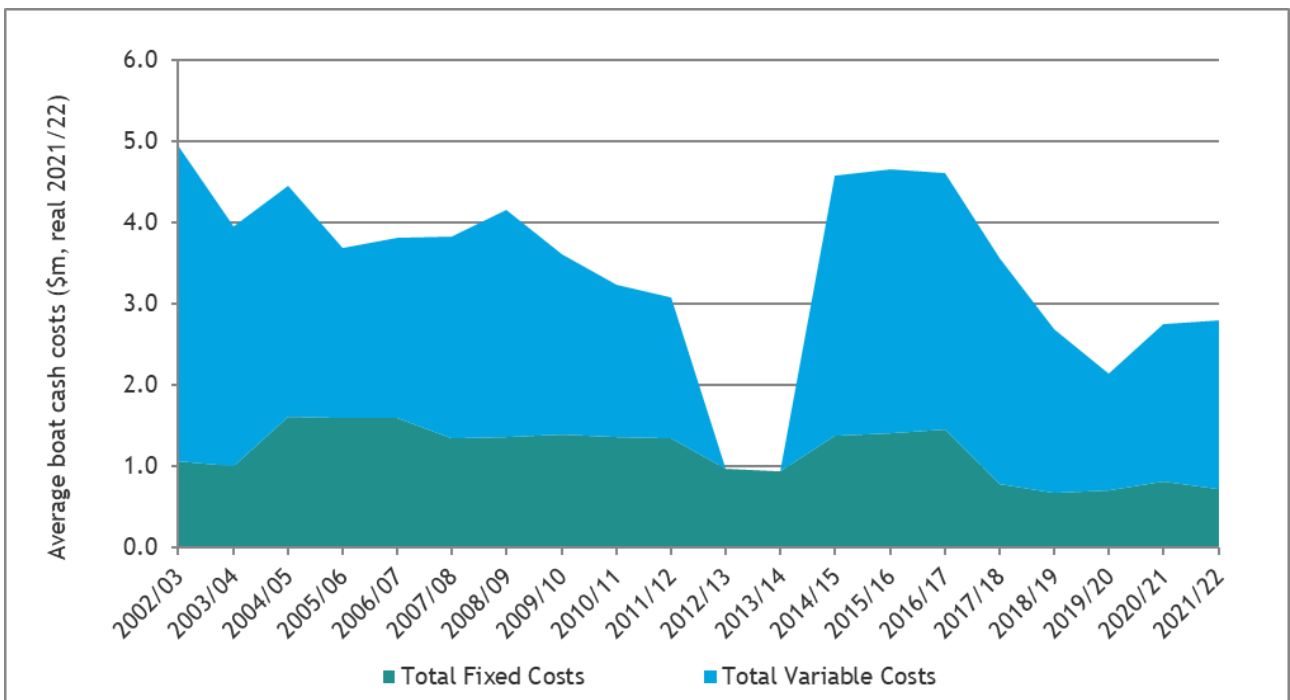
Figure 5-6 Cost shares in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Financial performance estimates were based on different survey samples and techniques. Some of the difference between years is, therefore, attributable to sampling variability.

Source: Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

Figure 5-7 Total costs in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



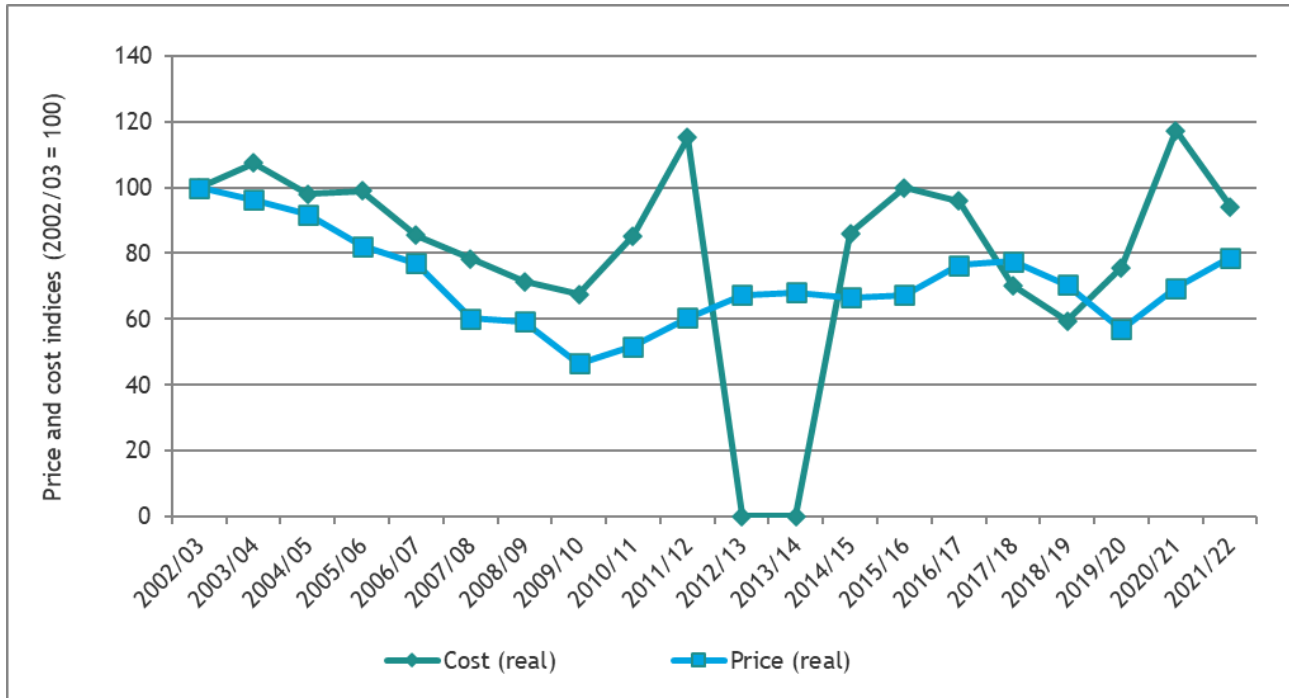
<sup>a</sup> Estimates of average boat gross income are expressed in real 2021/22 dollars.

Source: Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

### Cost Price Squeeze

Price and cost indices for the GSV Prawn Fishery for the last 20 years are summarised in Figure 5-8. These indicators are derived from the average price and average cost per kilogram of catch. Over the last 20 years the cost of catching GSV Prawns has decreased by 6 per cent in real 2021/22 terms and the price received for GSV Prawns has fallen by 21 per cent, decreasing the per kg profit for Prawn catch.

Figure 5-8 Price and cost indices for the GSV Prawn Fishery, 2002/03 to 2021/22

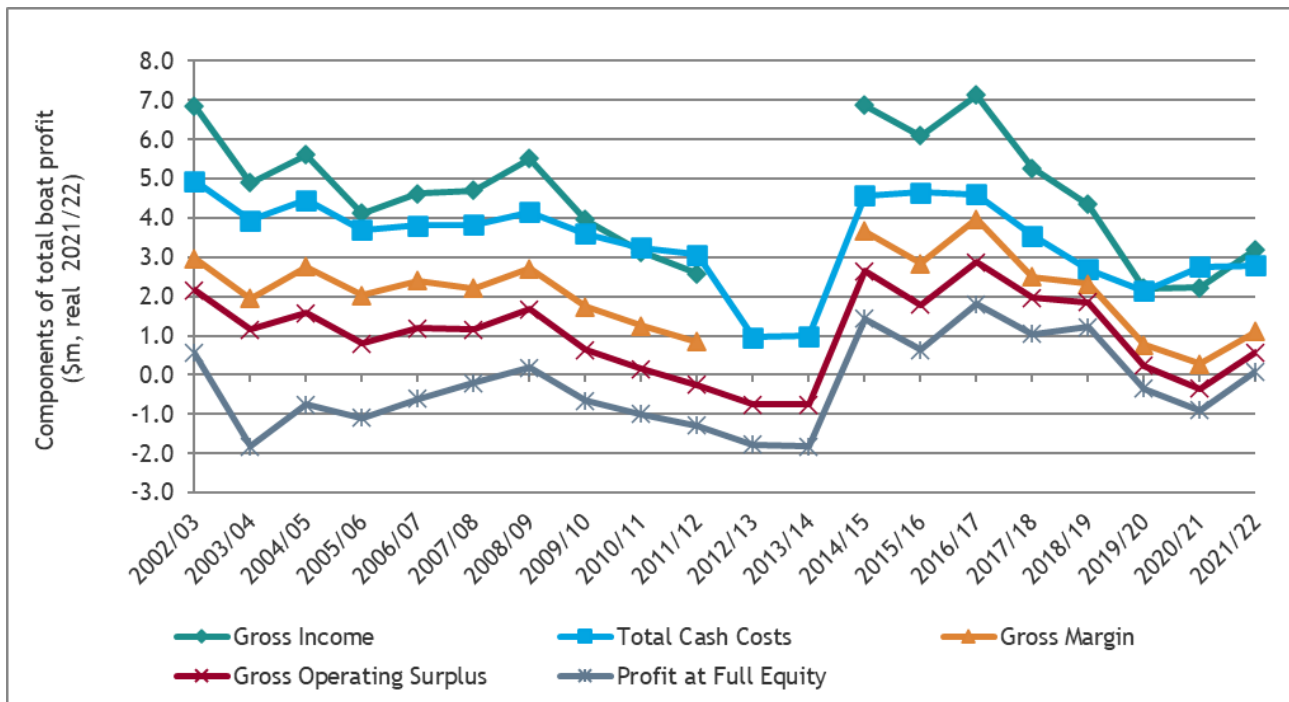


Source: Figure 3-2, Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

### Profitability

Selected measures of profitability for the GSV Prawn Fishery are summarised in Figure 5-9 for the last 20 years. Changes in each of the profitability measures for the fishery were closely related to the total income earned. Profitability followed a decreasing trend between 2002/03 to 2013/14. Improvements in profitability were observed once the fishery reopened in 2014/15 through to 2018/19. All measures of profitability declined significantly in 2019/20 and 2020/21 principally the result of the significant falls in income. In 2021/22 gross margin, GOS and profit at full equity all improved from the previous two years (Figure 5-9).

Figure 5-9 Income and profit in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of income and profitability measures are expressed in real 2021/22 dollars.

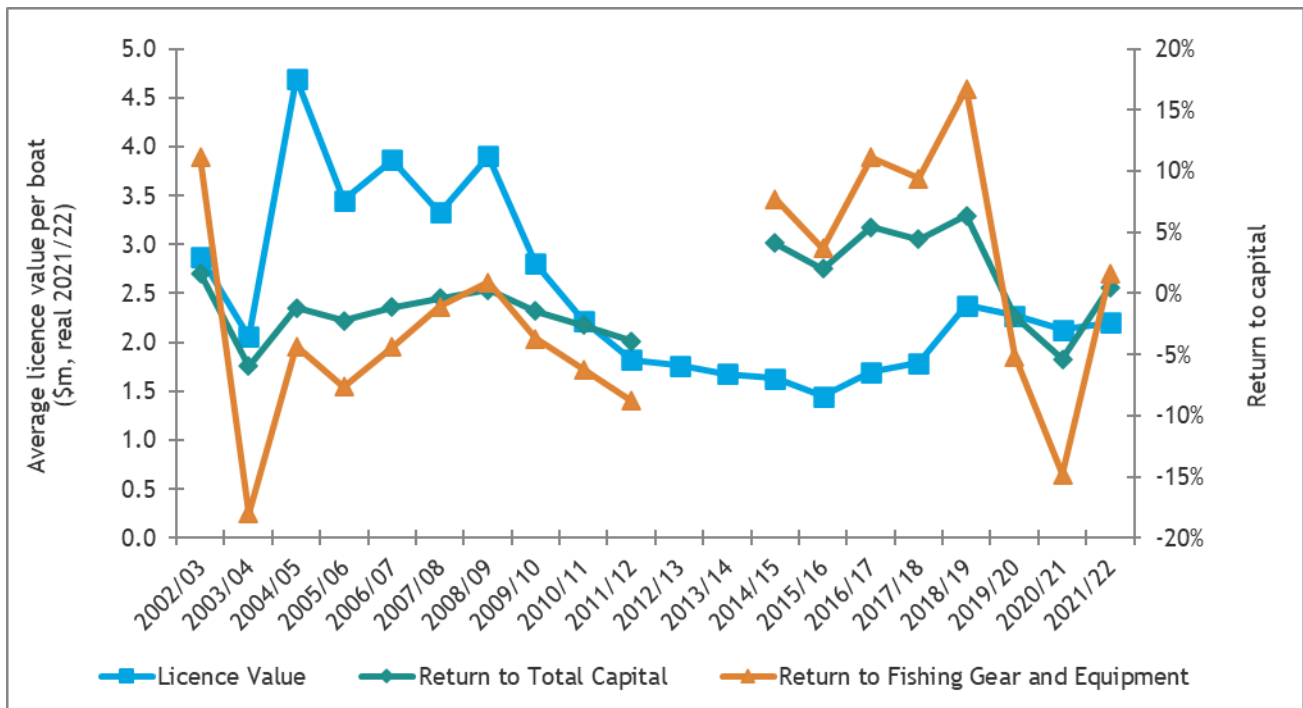
Source: Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

### Return to Capital

Estimates of the average licence value and the rate of return to total capital for the last 20 years are illustrated in Figure 5-10. Capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. The rate of return to capital is calculated to be profit at full equity as a percentage of total capital employed.

The estimated rate of return to total capital for the fishery fluctuated but stayed negative between 2003/04 and 2011/12. However, between 2011/12 and 2018/19 the estimated rate of return to total capital improved from -3.9 per cent to 6.4 per cent. This indicator declined and was negative again in 2019/20 and 2020/21 before recovering to 0.5 per cent in 2021/22 (Figure 5-10).

Figure 5-10 Return to capital in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of licence value are expressed in real 2021/22 dollars.

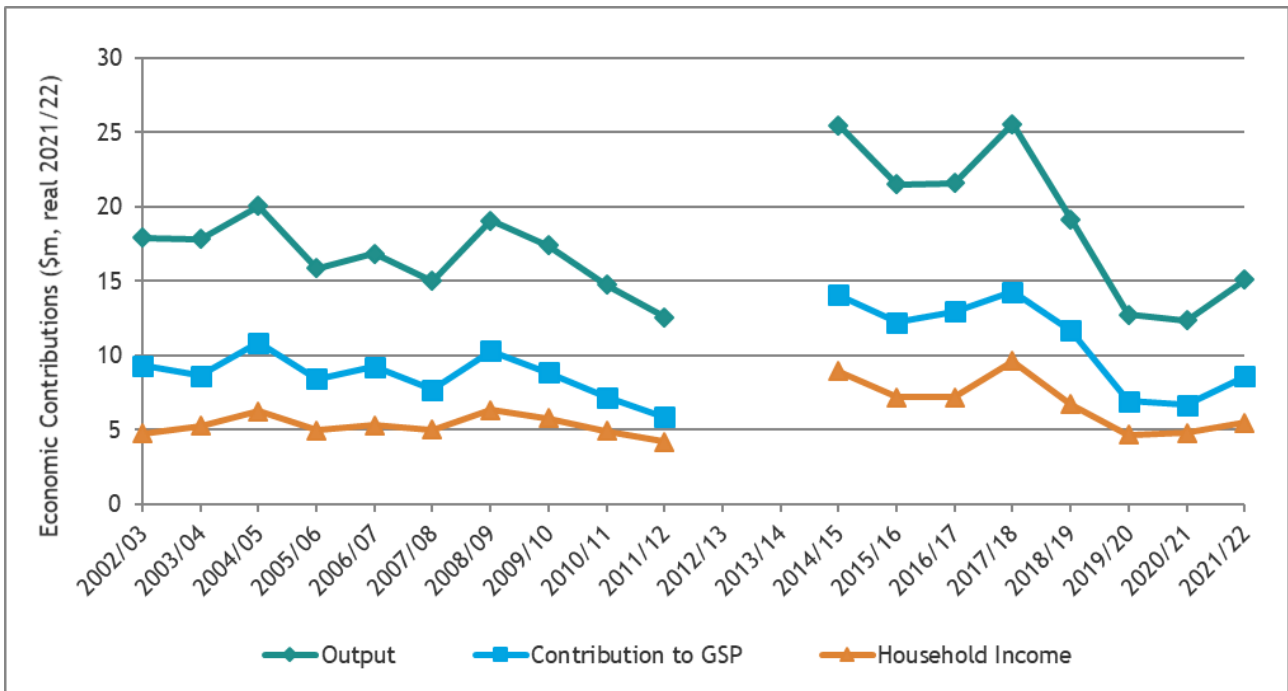
Source: Table 3-5 and Appendix Table 3-1 to Appendix Table 3-5

#### 5.4. Contribution to South Australian Economy

Figure 5-11 and Figure 5-12 illustrate the total economic contribution of the fishery on the SA economy for the last 20 years. Total economic contribution refers to the direct fishing industry contributions (fishing, processing, etc.) and the indirect contributions on other sectors of the economy.

Changes in total output and contribution to GSP are closely linked to changes in fishery GVP (Figure 5-11). Between 2002/03 and 2011/12, total output decreased by around 30 per cent and contribution to GSP decreased by around 37 per cent. After the fishery reopened in 2014/15, total output recovered from its 2011/12 levels. Since 2014/15 output and GSP declined through to 2021/22. Overall, output declined by 16 per cent overall between 2002/03 to 2021/22 and GSP declined by 21 per cent over the same period. Employment contributions followed a similar trend over the same period (Figure 5-12). Between 2002/03 and 2011/12, employment declined by 28 per cent. After the fishery reopened in 2014/15, employment recovered but then fluctuated and declined overall through to 2021/22. This resulted in a 21 per cent decline overall between 2002/03 to 2021/22.

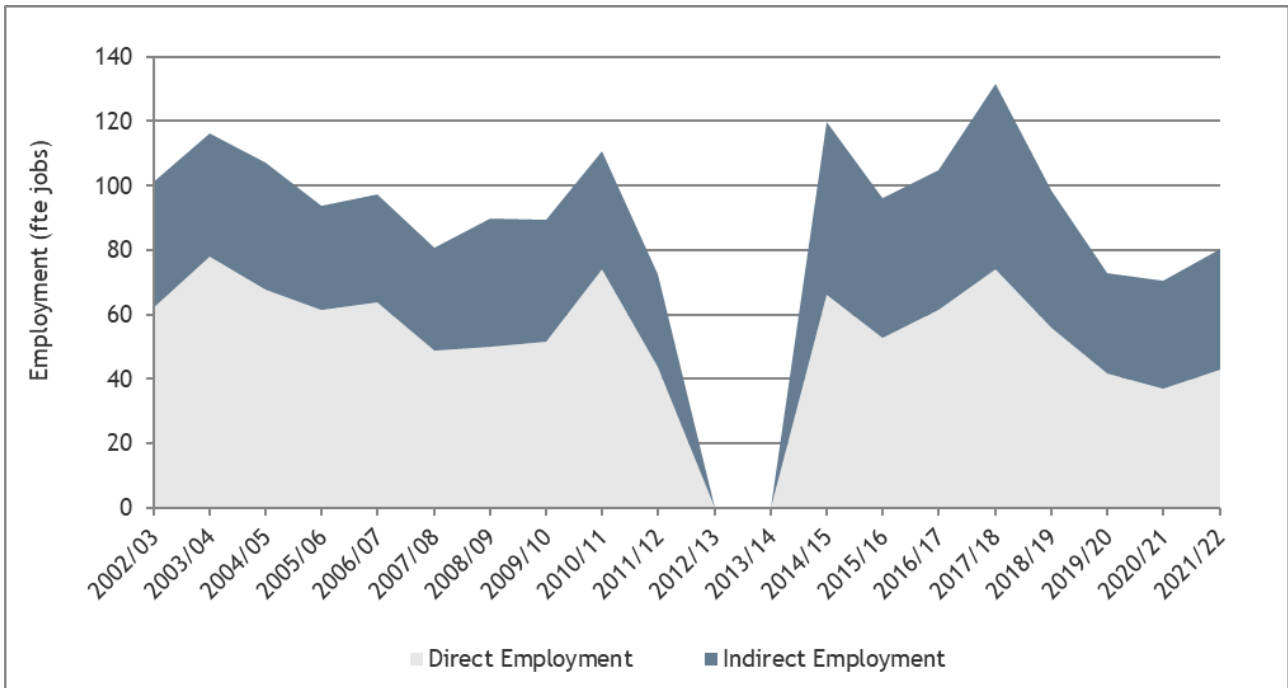
Figure 5-11 Total gross state product, output and household income contribution of the GSV Prawn Fishery on the SA economy, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of output, GSP and household income are expressed in real 2021/22 dollars.

Source: Figure 3-3 and Figure 3-4

Figure 5-12 Total direct and indirect employment contribution of the GSV Prawn Fishery on the SA economy, 2002/03 to 2021/22



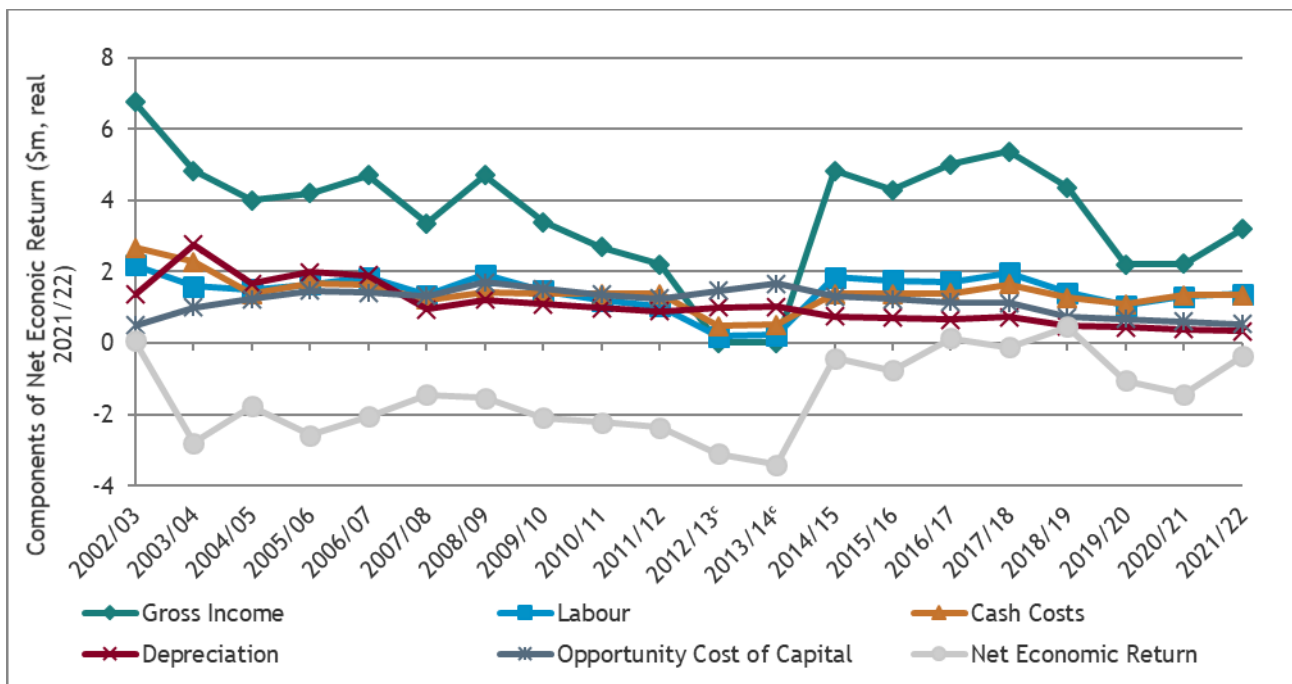
Source: Figure 3-3 and Figure 3-4

### 5.5. Net Economic Return

Net economic return is defined as the difference between the price of a good produced using a natural resource and the unit costs of turning that natural resource into the good including the opportunity cost of capital. In this case the natural resource is the GSV Prawn Fishery and the good produced is the landed fish. Estimates of the net economic return generated in the GSV Prawn Fishery are summarised in Figure 5-13 for the last 20 years. Net economic return followed a decreasing trend, with some fluctuations through to 2013/14, the second year the fishery was closed. After the fishery reopened, net economic return improved to -\$431,000 in 2014/15, before increasing to \$434,000 in 2018/19. Net economic return then decreased to -\$1.4 million in 2020/21 before increasing to -\$376,000 in 2021/22 (Figure 5-13).

Since the fishery reopened in 2014/15, net economic return has remained higher than for the majority of the period prior to the closure. Although the decline in catch in 2019/20 and 2020/21 reduced net economic return, the benefits of the fisheries restructure are evident in the higher levels of net economic return between 2014/15 and 2021/22. Despite other economic indicators declining to levels last seen in 2011/12, net economic return in 2020/21 remained higher than all values reported between 2003/04 and 2013/14. This indicates that the fishery has been able to successfully adapt to the structural changes that have occurred gradually since 2017/18.

Figure 5-13 Net economic return in the GSV Prawn Fishery, 2002/03 to 2021/22 (\$m) <sup>a</sup>



<sup>a</sup> All indicators are expressed in real 2021/22 dollars.

Source: Table 3-8

Net economic return expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. This indicator is illustrated in Figure 5-14 and shows a decreasing trend between 2002/03 (1 per cent) and 2011/12 (-134 per cent) before recovering when the fishery reopened in 2014/15 (-10 per cent) where it increased through to 2018/19 (12 per cent). The indicator then fell significantly until 2020/21 (-64 per cent) before increasing in 2021/22 (-12 per cent). The Gulf St Vincent

Prawn Fishery currently has one of the lowest NER/GVP of all commercial fisheries in South Australia and is only one of a few fisheries with negative NER/GVP.

Figure 5-14 Net economic return as a proportion of GVP in the GSV Prawn Fishery, 2002/03 to 2021/22

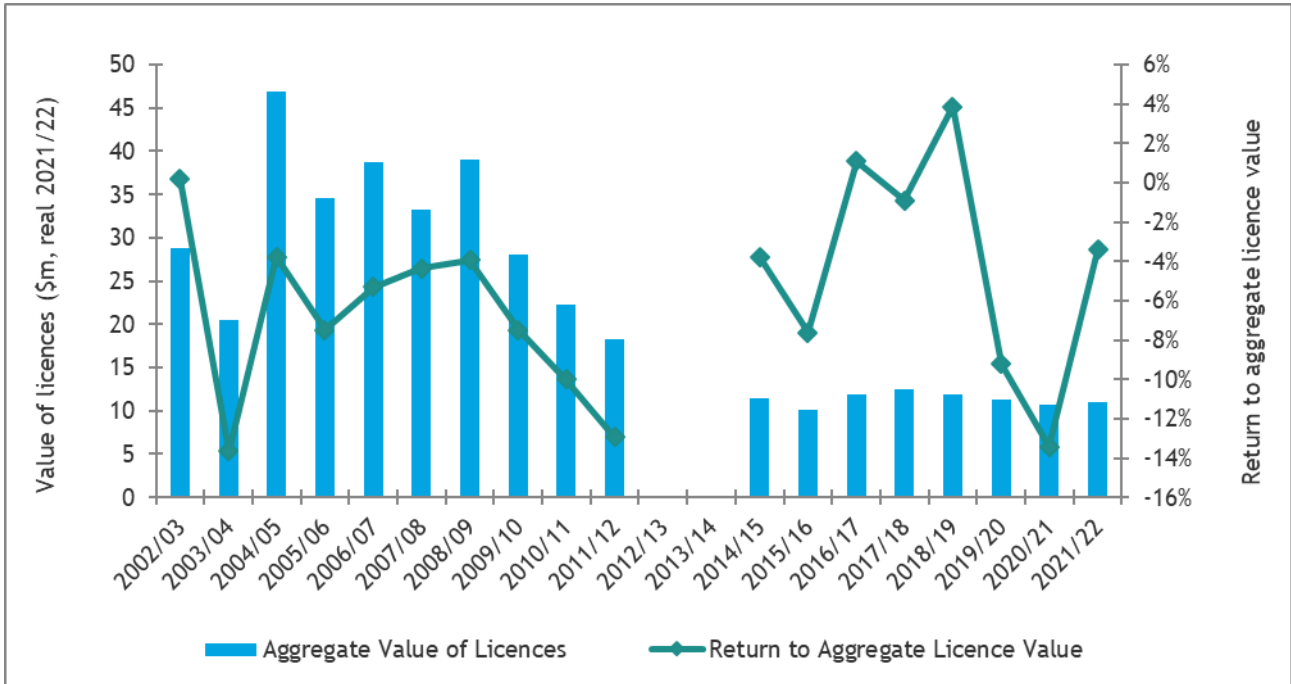


Source: Table 3-2 and Table 3-8

Net economic return represents a return to the value of licences in the fishery. The aggregate value of licences in the GSV Prawn Fishery and the return to aggregate licence value of the fishery are illustrated in Figure 5-15. The return to the aggregate licence value decreased from 0.2 per cent in 2002/03 to -12.9 per cent in 2011/12 before recovering to 3.9 per cent in 2018/19. The indicator then decreased to -13.4 per cent in 2020/21 before increasing to -3.4 per cent in 2021/22 (Figure 5-15).



Figure 5-15 Aggregate value of licences and return to aggregate licence value in the GSV Prawn Fishery, 2002/03 to 2021/22 <sup>a,b</sup>



<sup>a</sup> The value of licences represents licence holders' estimates of the value of their fishing licence derived from survey responses. Estimates were based on different survey samples and techniques. Some of the difference between years is, therefore, attributable to sampling variability.

<sup>b</sup> Estimates of licence value are expressed in real 2021/22 dollars.

Source: Table 3-5 and Table 3-8

## REFERENCES

- Australian Bureau of Statistics (ABS) 2022a, *Consumer Price Index, Australia*, Cat. No. 6401.0.
- Australian Bureau of Statistics (ABS) 2022b, *Wage Price Index, Australia*, Cat. No. 6345.0.
- BDO EconSearch 2021, *Input-Output Tables for South Australia and its Regions 2019/20 Update: Technical Report*, report prepared for Department of the Premier and Cabinet, February.
- BDO EconSearch 2022a, *Economic Indicators for the Commercial Fisheries of South Australia, Summary Report, 2020/21*, report prepared for the Department of Primary Industries and Regions, Adelaide, December (and previous editions).
- BDO EconSearch 2022b, *Economic Indicators for the Gulf St Vincent Prawn Fishery, 2020/21*, report prepared for the Department of Primary Industries and Regions, Adelaide, June (and previous editions).
- Biosecurity Australia 2007, *Importation of Prawns and Prawn Products - Revised Interim Quarantine Measures*, Biosecurity Australia Policy Memorandum 2007/16.
- Ironmonger, D. 2002, *The Economic Value of Volunteering in South Australia*, report prepared for the Office for Volunteers, Government of South Australia.
- McLeay, L.J. and Hooper, G.E. 2022, *Gulf St Vincent Prawn *Penaeus (Melicertus) latisulcatus* Fishery 2021/22*, Fishery Assessment Report to PIRSA Fisheries and Aquaculture, SARDI, SARDI Publication No. F2007/000782-12, SARDI Research Report Series No. 1153, November.
- PIRSA 2022, *Management Plan for the South Australian Commercial Gulf St Vincent Prawn Fishery (2022)*, The South Australian Fisheries Management Series, Paper number 84, July.
- Reserve Bank of Australia (RBA) 2022a, *Indicator Lending Rates - Monthly Statistics*
- Reserve Bank of Australia (RBA), 2022b, *Exchange Rates - Daily Statistics*.
- Triantafillos L., Brooks K.A., Schirmer J. and Pascoe S., 2014a, *Managing the social dimension of fishing: Part 1 Introduction to social objectives and indicators in fisheries management*, Department of Primary Industries and Regions, Fisheries and Aquaculture, Adelaide.
- Triantafillos L., Brooks K.A., Schirmer J. and Pascoe S., 2014b, *Managing the social dimension of fishing: Part 2 Implementing social objectives and indicators in fisheries management*, Department of Primary Industries and Regions, Fisheries and Aquaculture, Adelaide.

### Disclaimer

The assignment is a consulting engagement as outlined in the 'Framework for Assurance Engagements', issued by the Auditing and Assurances Standards Board, Section 17. Consulting engagements employ an assurance practitioner's technical skills, education, observations, experiences and knowledge of the consulting process. The consulting process is an analytical process that typically involves some combination of activities relating to: objective-setting, fact-finding, definition of problems or opportunities, evaluation of alternatives, development of recommendations including actions, communication of results, and sometimes implementation and follow-up.

The nature and scope of work has been determined by agreement between BDO and the Client. This consulting engagement does not meet the definition of an assurance engagement as defined in the 'Framework for Assurance Engagements', issued by the Auditing and Assurances Standards Board, Section 10.

Except as otherwise noted in this report, we have not performed any testing on the information provided to confirm its completeness and accuracy. Accordingly, we do not express such an audit opinion and readers of the report should draw their own conclusions from the results of the review, based on the scope, agreed-upon procedures carried out and findings.

## APPENDIX 1 Economic Contribution of the Gulf St Vincent Prawn Fishery, 2020/21

Appendix Table 1-1 The economic contribution of the GSV Prawn fishing industry in South Australia, 2020/21

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	2.1	18%	18	26%	1.2	27%	0.9	14%
Processing	0.1	1%	0	0%	0.0	0%	0.0	0%
Transport	0.0	0%	0	0%	0.0	0%	0.0	0%
Retail	1.3	11%	11	15%	0.6	13%	0.8	12%
Food services	0.7	6%	7	10%	0.3	6%	0.4	6%
Capital expenditure <sup>b</sup>	0.1	1%	1	1%	0.1	1%	0.1	1%
<b>Total Direct <sup>c</sup></b>	<b>4.3</b>	<b>37%</b>	<b>37</b>	<b>52%</b>	<b>2.2</b>	<b>48%</b>	<b>2.2</b>	<b>34%</b>
<b>Flow-on effects</b>								
Trade	0.9	7%	6	8%	0.3	8%	0.5	8%
Manufacturing	0.9	8%	2	4%	0.2	4%	0.3	4%
Business Services	1.3	11%	8	11%	0.6	14%	0.7	11%
Transport	0.4	4%	2	2%	0.1	3%	0.2	3%
Other Sectors	3.8	33%	16	22%	1.1	24%	2.5	39%
<b>Total Flow-on <sup>c</sup></b>	<b>7.3</b>	<b>63%</b>	<b>33</b>	<b>48%</b>	<b>2.4</b>	<b>52%</b>	<b>4.1</b>	<b>66%</b>
<b>Total <sup>c</sup></b>	<b>11.6</b>	<b>100%</b>	<b>70</b>	<b>100%</b>	<b>4.5</b>	<b>100%</b>	<b>6.3</b>	<b>100%</b>
Total/Direct	2.7	-	1.9	-	2.1	-	2.9	-
Total/Tonne	\$105,600	-	0.64	-	\$41,100	-	\$56,900	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 10 full-time and 18 part-time jobs, that is, 28 jobs in aggregate, which was estimated to be equal to 18 fte jobs.

<sup>b</sup> Capital expenditure includes fishing related expenditure (boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment) and processing relating expenditure (sheds, buildings and freezers).

<sup>c</sup> Totals may not sum due to rounding.

Source: BDO EconSearch analysis

## APPENDIX 2 Summary Economic Indicators for SA Commercial Fisheries

Appendix Table 2-1 Commercial fisheries catch, South Australia, 2001/02 to 2020/21 (tonnes)

Year	Abalone	GSV Prawns <sup>a</sup>	SGWC Prawns <sup>a</sup>	Sth'n Zone Rock Lobster <sup>a</sup>	Nth'n Zone Rock Lobster <sup>a</sup>	Blue Crabs	Lakes and Coorong <sup>b</sup>	Sardines	Marine Scalefish	Misc <sup>c</sup>	Total SA Fisheries <sup>d</sup>
2001/02	850	322	2,309	1,717	675	481	1,640	12,165	4,801	-	24,960
2002/03	890	232	1,508	1,766	595	515	1,979	21,741	4,243	-	33,469
2003/04	879	172	1,958	1,896	504	559	2,180	33,160	4,221	-	45,529
2004/05	902	213	1,960	1,897	446	584	2,277	56,952	3,857	-	69,089
2005/06	896	175	1,891	1,889	476	600	2,440	28,626	3,234	-	40,227
2006/07	883	209	2,024	1,895	492	617	2,443	30,355	2,855	-	41,773
2007/08	889	229	2,088	1,850	459	625	2,146	29,692	2,925	28	40,931
2008/09	837	273	1,915	1,407	403	604	2,023	27,850	2,998	28	38,338
2009/10	855	250	2,445	1,243	310	539	1,916	36,573	3,330	24	47,485
2010/11	815	178	2,115	1,244	313	591	1,681	33,220	3,068	24	43,249
2011/12	822	125	1,840	1,242	307	611	1,641	36,962	3,208	25	46,783
2012/13	875	0	1,881	1,234	325	511	1,811	35,065	2,603	28	44,333
2013/14	661	0	1,805	1,247	331	571	1,852	33,197	2,302	22	41,988
2014/15	744	249	1,848	1,238	321	576	1,598	36,020	2,582	22	45,198
2015/16	625	218	2,357	1,244	347	625	1,646	41,103	2,550	21	50,736
2016/17	743	225	2,205	1,238	320	627	1,847	39,745	2,519	22	49,491
2017/18	700	237	2,197	1,246	308	603	1,873	43,293	2,303	22	52,782
2018/19	658	212	2,121	1,245	294	616	1,861	40,041	2,099	22	49,169
2019/20	509	133	1,743	1,203	226	620	1,978	39,889	2,130	17	48,448
2020/21	493	110	1,837	1,275	251	592	1,926	38,024	1,689	18	46,215

<sup>a</sup> Excludes retained by-catch of Octopus and Southern Calamari.

<sup>b</sup> The River fishery was closed from July 2003. There are 6 River fishery licences with access to non-native species and their production is included in this table.

<sup>c</sup> Prior to 2007/08 catch from the Miscellaneous Fishery was included in the Marine Scalefish Fishery.

<sup>d</sup> Excludes retained by-catch of Octopus, Southern Calamari and bugs (49t of Octopus, 45t of Southern Calamari and 4t of Bugs in 2020/21) from the Rock Lobster and Prawn Fisheries. Excludes catch from Charter Boat Fishery, aquaculture and south east non-trawl and deep water trawl Commonwealth Fisheries.

Source: BDO EconSearch (2022b)

Appendix Table 2-2 Commercial fisheries gross value of production, South Australia, 2001/02 to 2020/21 (\$m)

Year	Abalone	GSV Prawns <sup>a</sup>	SGWC Prawns <sup>a</sup>	Sth'n Zone Rock Lobster <sup>a</sup>	Nth'n Zone Rock Lobster <sup>a</sup>	Blue Crabs	Lakes and Coorong <sup>b</sup>	Sardines	Marine Scalefish	Misc <sup>c</sup>	Charter Boat	Total SA Fisheries <sup>d</sup>
2001/02	54	9	62	98	41	5	7	13	30	-	-	319
2002/03	54	6	41	96	28	5	7	27	31	-	-	296
2003/04	46	5	58	72	18	5	8	33	33	-	-	277
2004/05	46	5	45	77	17	5	8	41	30	-	-	274
2005/06	46	4	46	90	21	7	8	22	24	-	6	275
2006/07	42	4	53	106	24	7	10	25	26	-	6	305
2007/08	40	4	41	98	21	7	10	21	26	1	5	274
2008/09	41	4	38	108	25	7	11	22	27	1	5	290
2009/10	35	3	34	87	19	5	8	28	28	1	6	254
2010/11	33	3	36	80	17	6	8	23	26	1	5	238
2011/12	34	2	29	93	20	6	9	24	27	1	6	252
2012/13	34	0	32	82	18	6	11	24	28	1	6	241
2013/14	25	0	31	99	22	7	11	21	24	1	5	246
2014/15	28	5	32	112	25	7	9	24	26	1	4	272
2015/16	24	4	42	124	27	8	9	28	24	2	4	297
2016/17	30	5	42	108	22	9	10	26	25	2	4	281
2017/18	29	5	46	103	26	9	12	28	24	2	4	287
2018/19	30	4	43	115	26	9	14	27	21	2	3	295
2019/20	22	2	23	106	19	9	13	27	20	2	2	247
2020/21	18	2	36	71	12	8	14	24	19	1	3	209

<sup>a</sup> Excludes retained by-catch of Octopus and Southern Calamari.

<sup>b</sup> The River fishery was closed from July 2003. There are 6 River fishery licences with access to non-native species and their production is included in this table.

<sup>c</sup> Prior to 2007/08 catch from the Miscellaneous Fishery was included in the Marine Scalefish Fishery.

<sup>d</sup> Excludes retained by-catch of Octopus, Southern Calamari and bugs (\$433,000 of Octopus, \$791,000 of Southern Calamari and \$66,000 of Bugs in 2020/21) from the Rock Lobster and Prawn Fisheries. Excludes catch of aquaculture and south east non-trawl, tuna, deep water trawl Commonwealth Fisheries. All values are expressed in real 2020/21 dollars.

Source: BDO EconSearch (2022b)

Appendix Table 2-3 Cost of management in South Australian commercial fisheries, 2020/21

	Licence Fees	GVP	Fees/ GVP	Catch	Fees/ Catch	Licence Holders	Fees/ Licence
	(\$'000)	(\$'000)	(%)	(t)	(\$/kg)	(no.)	(\$/licence)
Abalone	2,242	21,659	10.4%	509	\$4.40	34	\$65,940
Charter Boats <sup>a</sup>	371	1,772	20.9%	7,616	\$48.72	84	\$4,418
GSV Prawns	294	2,020	14.6%	133	\$2.21	10	\$29,436
SG Prawns <sup>b</sup>	1,102	22,833	4.8%	1,743	\$0.63	39	\$28,256
Sth'n Zone Rock Lobster	3,390	103,538	3.3%	1,203	\$2.82	180	\$18,831
Nth'n Zone Rock Lobster	1,576	18,349	8.6%	226	\$6.97	63	\$25,017
Blue Crabs	335	9,002	3.7%	620	\$0.54	9	\$37,196
Lakes and Coorong	637	12,778	5.0%	1,978	\$0.32	36	\$17,698
Marine Scalefish <sup>c</sup>	2,276	19,933	11.4%	2,130	\$1.07	304	\$7,485
Miscellaneous	117	1,471	7.9%	17	\$6.86	12	\$9,713
Sardines	989	26,726	3.7%	39,889	\$0.02	14	\$70,620
<b>Total SA</b>	<b>13,328</b>	<b>240,080</b>	<b>5.6%</b>	<b>48,448</b>	<b>\$0.27</b>	<b>785</b>	<b>\$16,978</b>

<sup>a</sup> Total catch for the Charter Boat Fishery is the total number of clients rather than total volume of catch and has therefore been excluded from the total catch for all SA commercial fisheries.

<sup>b</sup> Management costs for the Charter Boat Fishery are reported per client rather than per kg of catch.

<sup>c</sup> Excludes West Coast Prawn Fishery.

<sup>d</sup> Licence fees include access/entitlement fees paid by rock lobster and Lakes and Coorong licence holders. Number of licence holders and average fee per licence holder relates only to Marine Scalefish licence holders and excludes access/entitlement holders from other fisheries.

Source: BDO EconSearch (2022b)

Appendix Table 2-4 Financial performance in South Australian commercial fisheries, 2020/21, (average per boat) <sup>a</sup>

	Abalone	Charter Boats	GSV Prawns	SG Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs <sup>a</sup>	Marine Scalefish	Sardine	Lakes and Coorong
(1) Total Boat Gross Income	585,788	95,682	418,600	858,836	440,222	250,721	8,409,508	122,224	1,726,433	517,480
Variable Costs										
Fuel	15,214	16,015	60,732	80,931	24,940	24,264	530,977	13,025	108,435	16,878
Repairs &	24,130	17,007	41,471	97,439	35,796	17,104	438,956	8,151	130,409	12,430
Bait/Ice	527	3,525	0	5,001	14,584	13,170	134,934	2,411	1,591	1,542
Provisions	3,806	854	2,477	4,605	1,067	6,159	29,862	980	1,385	610
Labour - paid	185,740	6,185	212,626	361,846	158,999	113,626	2,462,702	12,639	432,268	66,979
(2) Labour - unpaid	1,342	13,126	9,867	2,001	7,280	15,902	9,604	18,510	2,801	14,746
Other	3,593	2,967	37,985	367	1,312	3,581	1,781	1,568	427	1,123
(3) Total Variable Costs	234,353	59,679	365,158	552,190	243,978	193,805	3,608,815	57,283	677,316	114,309
Fixed Costs										
Licence Fee	72,620	4,185	81,983	27,634	23,122	26,786	343,300	5,769	68,666	16,136
Insurance	8,283	4,179	9,796	20,831	8,734	7,461	198,233	3,036	39,123	5,302
(4) Interest	18,080	1,141	4,154	38,018	12,378	3,411	388,980	4,239	86,292	4,012
(5) Labour - unpaid	13,418	17,493	23,796	3,419	10,693	3,971	127,993	5,041	24,916	9,522
(6) Leasing	0	0	0	5,365	4,452	42,432	320,184	0	0	7,111
Legal & Accounting	9,191	2,030	6,579	4,872	6,764	4,206	26,823	2,292	5,872	4,537
Telephone etc.	2,451	1,296	1,805	2,995	2,518	1,032	5,696	1,266	1,098	1,911
Slipping & Mooring	1,271	2,193	20,061	21,804	6,383	5,825	70,083	1,629	7,704	276
Travel	5,482	659	0	570	1,363	1,598	3,561	594	883	927
Office & Admin	6,229	7,027	3,869	30,556	6,869	11,429	144,778	7,369	17,988	8,919
(7) Total Fixed Costs	137,025	40,203	152,042	156,062	83,275	108,151	1,629,632	31,234	252,542	58,654
(8) Total Boat Cash Costs (3 + 7)	371,377	99,882	517,201	708,252	327,254	301,957	5,238,447	88,517	929,858	172,962
Boat Gross Margin (1 - 3)	351,435	36,003	53,442	306,646	196,243	56,916	4,800,692	64,941	1,049,117	403,171
(9) Total Unpaid Labour (2 + 5)	14,760	30,618	33,662	5,420	17,973	19,872	137,597	23,550	27,717	24,268
Gross Operating Surplus (1- 8+ 9)	229,170	26,418	-64,938	156,004	130,942	-31,363	3,308,657	57,258	824,292	368,786
(10) Boat Cash Income (1 - 8)	214,411	-4,200	-98,601	150,584	112,968	-51,235	3,171,061	33,707	796,575	344,518
(11) Depreciation	53,300	22,687	73,852	110,310	41,973	47,587	740,508	19,848	328,118	54,278
(12) Boat Business Profit (10 - 11)	161,111	-26,887	-172,453	40,274	70,995	-98,823	2,430,552	13,859	468,457	290,239
(13) Profit at Full Equity (12 + 4 + 6)	179,191	-25,746	-168,299	83,656	87,825	-52,980	3,139,717	18,097	554,748	301,363
Boat Capital										
(14) Fishing Gear & Licence Value	369,703	273,514	1,136,412	1,435,546	512,056	514,497	8,036,811	150,058	3,132,734	432,446
(15) Total Boat Capital	6,326,294	7,750	2,000,000	4,198,095	5,257,050	2,296,864	47,285,237	226,097	6,076,511	1,469,734
(15) Total Boat Capital	6,695,997	281,264	3,136,412	5,633,641	5,769,107	2,811,360	55,322,048	376,155	9,209,245	1,902,180
Rate of Return on										
Fishing Gear & Equip (13 / 14 * 100)	48.5%	-9.4%	-14.8%	6%	17%	-10.3%	39.1%	12.1%	17.7%	69.7%
Rate of Return on										
Total Boat Capital (13 / 15 * 100)	2.7%	-9.2%	-5.4%	1.5%	1.5%	-1.9%	5.7%	4.8%	6.0%	15.8%

<sup>a</sup> Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery

<sup>b</sup> Estimates of financial performance for the blue crab fishery have been presented on a whole of fishery basis.

Source: BDO EconSearch (2022b)



Appendix Table 2-5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2020/21 <sup>a</sup>

	Abalone	Charter Boats	Gulf St Vincent Prawns	Spencer Gulf Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong
<b>Variable Costs</b>										
Fuel	4%	16%	12%	11%	8%	8%	10%	15%	12%	10%
R&M	6%	17%	8%	14%	11%	6%	8%	9%	14%	7%
Bait/Ice	0%	4%	0%	1%	4%	4%	3%	3%	0%	1%
Provisions	1%	1%	0%	1%	0%	2%	1%	1%	0%	0%
Labour - paid	50%	6%	41%	51%	49%	38%	47%	14%	46%	39%
Labour - unpaid	0%	13%	2%	0%	2%	5%	0%	21%	0%	9%
Other	1%	3%	7%	0%	0%	1%	0%	2%	0%	1%
<b>Fixed Costs</b>										
Licence Fee	20%	4%	16%	4%	7%	9%	7%	7%	7%	9%
Insurance	2%	4%	2%	3%	3%	2%	4%	3%	4%	3%
Interest	5%	1%	1%	5%	4%	1%	7%	5%	9%	2%
Labour - unpaid	4%	18%	5%	0%	3%	1%	2%	6%	3%	6%
Leasing	0%	2%	0%	1%	1%	14%	6%	0%	0%	4%
Legal & Accounting	2%	1%	1%	1%	2%	1%	1%	3%	1%	3%
Telephone etc.	1%	2%	0%	0%	1%	0%	0%	1%	0%	1%
Slipping & Mooring	0%	1%	4%	3%	2%	2%	1%	2%	1%	0%
Travel	1%	7%	0%	0%	0%	1%	0%	1%	0%	1%
Office & Admin	2%	40%	1%	4%	2%	4%	3%	8%	2%	5%
<b>Total Variable Costs</b>	<b>63%</b>	<b>60%</b>	<b>71%</b>	<b>78%</b>	<b>75%</b>	<b>64%</b>	<b>69%</b>	<b>65%</b>	<b>73%</b>	<b>66%</b>
<b>Total Fixed Costs</b>	<b>37%</b>	<b>40%</b>	<b>29%</b>	<b>22%</b>	<b>25%</b>	<b>36%</b>	<b>31%</b>	<b>35%</b>	<b>27%</b>	<b>34%</b>
<b>Total Cash Costs</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>a</sup> Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

Source: Derived from BDO EconSearch (2022b)

Appendix Table 2-6 Economic contributions of South Australian commercial fisheries, 2020/21 <sup>a,b</sup>

	Abalone	Charter Boats	Gulf St Vincent Prawn	SG Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries
<b>Output (\$m)</b>											
Direct											
Fishing	18.3	2.9	2.1	35.7	71.7	11.7	8.4	19.1	24.0	13.7	207.6
Downstream	15.2	5.7	2.2	35.9	29.8	6.1	7.5	8.7	2.2	6.6	119.9
All other sectors	56.9	14.4	7.3	91.4	125.3	29.5	18.4	57.3	22.1	19.5	442.3
<b>Total</b>	<b>90.5</b>	<b>23.0</b>	<b>11.6</b>	<b>163.0</b>	<b>226.8</b>	<b>47.3</b>	<b>34.4</b>	<b>85.1</b>	<b>48.3</b>	<b>39.8</b>	<b>769.8</b>
Total/Direct	2.7	2.7	2.7	2.3	2.2	2.7	2.2	3.1	1.8	2.0	2.4
Total/Tonne (\$)	\$183,500	\$1,900	\$105,600	\$88,700	\$172,300	\$182,500	\$58,000	\$50,300	\$1,200	\$24,900	\$16,000
<b>Contribution to GSP (\$m)</b>											
Direct											
Fishing	13.9	1.2	0.9	24.3	51.1	3.8	6.5	7.9	18.7	11.3	139.6
Downstream	13.8	2.8	1.3	20.6	14.8	3.0	3.8	4.2	1.1	3.2	68.6
All other sectors	18.1	8.1	4.1	50.9	71.5	16.8	10.4	32.8	12.5	11.1	236.4
<b>Total</b>	<b>45.9</b>	<b>12.1</b>	<b>6.3</b>	<b>95.9</b>	<b>137.4</b>	<b>23.7</b>	<b>20.8</b>	<b>44.8</b>	<b>32.3</b>	<b>25.5</b>	<b>444.6</b>
Total/Direct	1.7	3.1	2.9	2.1	2.1	3.5	2.0	3.7	1.6	11.1	2.1
Total/Tonne (\$)	\$93,000	\$1,000	\$56,900	\$52,100	\$104,400	\$91,300	\$35,000	\$26,500	\$800	\$26	\$9,200
<b>Employment (fte jobs)</b>											
Direct											
Fishing	51	32	18	116	327	89	29	211	82	109	1,064
Downstream	125	29	19	305	194	39	58	55	13	40	876
All other sectors	148	68	33	413	584	139	82	274	104	88	1,934
<b>Total</b>	<b>323</b>	<b>128</b>	<b>70</b>	<b>834</b>	<b>1,105</b>	<b>268</b>	<b>169</b>	<b>540</b>	<b>199</b>	<b>238</b>	<b>3,874</b>
Total/Direct	1.8	2.1	1.9	2.0	2.1	2.1	2.0	2.0	2.1	1.6	2.0
Total/Tonne	0.7	0.0	0.6	0.5	0.8	1.0	0.3	0.3	0.0	0.1	0.1
<b>Household Income (\$m)</b>											
Direct											
Fishing	6.8	0.6	1.2	14.3	28.0	6.2	2.6	8.7	6.4	3.3	78.2
Downstream	6.6	1.6	0.9	15.1	11.0	2.2	2.7	3.0	0.8	2.3	46.1
All other sectors	10.4	4.9	2.4	28.5	41.2	9.8	5.9	19.8	7.2	6.5	136.4
<b>Total</b>	<b>23.8</b>	<b>7.1</b>	<b>4.5</b>	<b>57.9</b>	<b>80.1</b>	<b>18.3</b>	<b>11.2</b>	<b>31.5</b>	<b>14.3</b>	<b>12.0</b>	<b>260.7</b>
Total/Direct	1.8	3.2	2.1	2.0	2.1	2.2	2.1	2.7	2.0	2.2	2.1
Total/Tonne (\$)	\$48,200	\$500	\$41,100	\$31,500	\$60,800	\$70,400	\$18,800	\$18,600	\$300	\$7,500	\$5,400

<sup>a</sup> Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

<sup>b</sup> Downstream activities include net value of processing, transport services and retail/food services trade.

Source: BDO EconSearch (2022b)

Appendix Table 2-7 Net economic return in South Australian commercial fisheries, 2020/21 (\$m)

	Abalone	GSV Prawns	SGWC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries <sup>a</sup>
Gross Income	18.3	2.1	35.7	71.7	11.7	8.4	19.1	24.0	13.7	204.6
Less Labour	6.3	1.2	15.0	28.8	6.2	2.6	5.7	6.4	2.4	74.6
Less Materials & Services	4.8	1.3	12.1	21.7	5.7	1.9	9.0	5.3	2.1	64.0
Less Depreciation	1.7	0.4	4.5	6.8	2.2	0.7	3.1	4.6	1.4	25.4
Less Opportunity Cost of Capital (@10%)	1.2	0.6	5.8	8.3	2.4	0.8	2.3	4.3	1.1	27.0
<b>NER</b>	<b>4</b>	<b>-1</b>	<b>-2</b>	<b>6</b>	<b>-5</b>	<b>2</b>	<b>-1</b>	<b>3</b>	<b>7</b>	<b>14</b>
<b>NER/GVP</b>	<b>24%</b>	<b>-64%</b>	<b>-5%</b>	<b>8%</b>	<b>-42%</b>	<b>28%</b>	<b>-5%</b>	<b>14%</b>	<b>49%</b>	<b>5%</b>

<sup>a</sup> Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

Source: BDO EconSearch (2022b)

## APPENDIX 3 Financial Performance, 2002/03 to 2018/19

Appendix Table 3-1 Financial performance in the GSV Prawn Fishery, 2002/03 to 2004/05 (total fishery)<sup>a</sup>

	2002/03		2003/04		2004/05	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$4,300,988		\$3,161,835		\$3,701,672	
Variable Costs						
Fuel	\$352,719	11%	\$268,054	11%	\$359,028	12%
Repairs & Maintenance <sup>c</sup>	\$485,794	16%	\$374,080	15%	\$207,196	7%
Provisions	\$2,383	0%	\$1,835	0%	\$12,212	0%
Labour - paid	\$1,235,443	40%	\$908,226	36%	\$1,114,340	38%
(2) Labour - unpaid <sup>d</sup>	\$84,218	3%	\$61,912	2%	\$92,293	3%
Other variable costs	\$267,941	9%	\$276,015	11%	\$91,326	3%
(3) Total Variable Costs	\$2,442,818	79%	\$1,901,149	75%	\$1,876,395	64%
Fixed Costs						
Licence Fee <sup>e</sup>	\$274,548	9%	\$250,966	10%	\$271,460	9%
Insurance	\$204,970	7%	\$211,146	8%	\$182,940	6%
(4) Interest	\$14,557	0%	\$14,935	1%	\$286,158	10%
(5) Labour - unpaid <sup>d</sup>	\$69,166	2%	\$69,166	3%	\$182,987	6%
Legal & Accounting	\$34,729	1%	\$35,775	1%	\$73,020	2%
Telephone etc.	\$19,034	1%	\$19,607	1%	\$15,442	1%
Slipping & Mooring	\$13,958	0%	\$14,379	1%	\$45,596	2%
Travel	\$4,202	0%	\$4,329	0%	\$1,840	0%
Office & Admin	\$24,455	1%	\$25,191	1%	\$4,644	0%
(7) Total Fixed Costs	\$659,618	21%	\$645,495	25%	\$1,064,087	36%
(8) Total Boat Cash Costs (3+7)	\$3,102,435	100%	\$2,546,643	100%	\$2,940,482	100%
Boat Gross Margin (1-3)	\$1,858,171		\$1,260,686		\$1,825,277	
(9) Total Unpaid Labour (2+5)	\$153,384		\$131,078		\$275,280	
Gross Operating Surplus (1-8+9)	\$1,351,937		\$746,270		\$1,036,470	
(10) Boat Cash Income (1-8)	\$1,198,553		\$615,192		\$761,190	
(11) Depreciation	\$864,405		\$1,811,718		\$1,543,986	
(12) Boat Business Profit (10-11)	\$334,148		-\$1,196,527		-\$782,796	
(13) Profit at Full Equity (12+4+6)	\$348,705		-\$1,181,592		-\$496,638	
Boat Capital						
(14) Fishing Gear & Equip	\$3,132,406		\$6,565,253		\$11,425,700	
Licence Value	\$18,057,922		\$13,275,128		\$31,000,000	
(15) Total Boat Capital	\$21,190,328		\$19,840,381		\$42,425,700	
Rate of Return on Fishing Gear & Equip (13/14*100)	11.1%		-18.0%		-4.3%	
Rate of Return on Total Boat Capital (13/15*100)	1.6%		-6.0%		-1.2%	

<sup>a</sup> Estimates of financial performance for the years 2002/03 to 2003/04 are based on the 2003 licence holders survey. Estimates of financial performance for the year 2004/05 are based on the 2005 licence holders survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 3-2 Financial performance in the GSV Prawn Fishery, 2005/06 to 2007/08 (total fishery)<sup>a</sup>

	2005/06		2006/07		2007/08	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$2,824,727		\$3,218,417		\$3,422,891	
Variable Costs						
Fuel	\$262,710	10%	\$248,005	9%	\$420,435	15%
Repairs & Maintenance <sup>c</sup>	\$149,089	6%	\$141,265	5%	\$139,373	5%
Provisions	\$8,787	0%	\$8,326	0%	\$6,500	0%
Labour - paid	\$850,347	34%	\$968,862	37%	\$1,157,200	41%
(2) Labour - unpaid <sup>d</sup>	\$70,428	3%	\$80,244	3%	\$85,909	3%
Other	\$95,698	4%	\$97,337	4%	\$4,750	0%
(3) Total Variable Costs	\$1,437,060	57%	\$1,544,040	58%	\$1,814,167	65%
Fixed Costs						
Licence Fee	\$282,832	11%	\$269,146	10%	\$300,510	11%
Insurance	\$191,698	8%	\$194,982	7%	\$196,080	7%
(4) Interest	\$284,747	11%	\$310,888	12%	\$180,000	6%
(5) Labour - unpaid <sup>d</sup>	\$182,987	7%	\$182,987	7%	\$124,091	4%
Legal & Accounting	\$76,516	3%	\$77,827	3%	\$65,618	2%
Telephone etc.	\$16,181	1%	\$16,458	1%	\$25,500	1%
Slipping & Mooring	\$47,779	2%	\$48,597	2%	\$40,000	1%
Travel	\$1,928	0%	\$1,961	0%	\$4,305	0%
Office & Admin	\$4,866	0%	\$4,950	0%	\$39,704	1%
(6) Total Fixed Costs	\$1,089,534	43%	\$1,107,796	42%	\$975,808	35%
(7) Total Boat Cash Costs (3+6)	\$2,526,594	100%	\$2,651,836	100%	\$2,789,975	100%
Boat Gross Margin (1-3)	\$1,387,667		\$1,674,378		\$1,608,724	
(8) Total Unpaid Labour (2+5)	\$253,415		\$263,231		\$210,000	
Gross Operating Surplus (1-7+8)	\$551,548		\$829,813		\$842,916	
(9) Boat Cash Income (1-7)	\$298,133		\$566,582		\$632,916	
(10) Depreciation	\$1,335,343		\$1,298,472		\$958,714	
(11) Boat Business Profit (9-10)	-\$1,037,210		-\$731,891		-\$325,799	
(12) Profit at Full Equity (11+4)	-\$752,462		-\$421,003		-\$145,799	
Boat Capital						
(13) Fishing Gear & Equip	\$9,881,714		\$9,608,867		\$13,396,250	
Licence Value	\$23,655,943		\$26,952,938		\$24,250,000	
(14) Total Boat Capital	\$33,537,657		\$36,561,806		\$37,646,250	
Rate of Return on Fishing Gear & Equip (12/13*100)	-7.6%		-4.4%		-1.1%	
Rate of Return on Total Boat Capital (12/14*100)	-2.2%		-1.2%		-0.4%	

<sup>a</sup> Estimates of financial performance for the years 2005/06 to 2006/07 are based on the 2005 licence holders survey. Estimates of financial performance for the year 2007/08 are based on the 2008 licence holder survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 3-3 Financial performance in the GSV Prawn Fishery, 2008/09 to 2010/11 (total fishery)<sup>a</sup>

	2008/09		2009/10		2010/11	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$4,078,437		\$3,012,003		\$2,477,030	
Variable Costs						
Fuel	\$387,594	13%	\$375,359	14%	\$382,866	15%
Repairs & Maintenance <sup>c</sup>	\$131,926	4%	\$130,856	5%	\$133,473	5%
Provisions	\$6,153	0%	\$6,103	0%	\$6,225	0%
Labour - paid	\$1,433,082	47%	\$1,087,992	40%	\$894,750	35%
(2) Labour - unpaid <sup>d</sup>	\$106,390	3%	\$80,771	3%	\$66,425	3%
Other	\$4,827	0%	\$4,960	0%	\$4,960	0%
(3) Total Variable Costs	\$2,069,971	67%	\$1,686,040	61%	\$1,488,698	58%
Fixed Costs						
Licence Fee	\$323,672	11%	\$338,392	12%	\$351,700	14%
Insurance	\$199,239	6%	\$204,737	7%	\$204,737	8%
(4) Interest	\$170,909	6%	\$197,273	7%	\$197,273	8%
(5) Labour - unpaid <sup>d</sup>	\$128,974	4%	\$132,585	5%	\$132,585	5%
Legal & Accounting	\$66,675	2%	\$68,515	2%	\$68,515	3%
Telephone etc.	\$25,911	1%	\$26,626	1%	\$26,626	1%
Slipping & Mooring	\$40,644	1%	\$41,766	2%	\$41,766	2%
Travel	\$4,374	0%	\$4,495	0%	\$4,495	0%
Office & Admin	\$40,344	1%	\$41,457	2%	\$41,457	2%
(6) Total Fixed Costs	\$1,000,742	33%	\$1,055,847	39%	\$1,069,155	42%
(7) Total Boat Cash Costs (3+6)	\$3,070,713	100%	\$2,741,887	100%	\$2,557,853	100%
Boat Gross Margin (1-3)	\$2,008,467		\$1,325,963		\$988,332	
(8) Total Unpaid Labour (2+5)	\$235,364		\$213,356		\$199,010	
Gross Operating Surplus (1-7+8)	\$1,243,089		\$483,473		\$118,187	
(9) Boat Cash Income (1-7)	\$1,007,725		\$270,116		-\$80,823	
(10) Depreciation	\$1,047,593		\$972,621		\$903,014	
(11) Boat Business Profit (9-10)	-\$39,868		-\$702,504		-\$983,837	
(12) Profit at Full Equity (11+4)	\$131,041		-\$505,232		-\$786,565	
Boat Capital						
(13) Fishing Gear & Equip	\$14,638,160		\$13,590,567		\$12,617,946	
Licence Value	\$28,894,323		\$21,339,005		\$17,548,906	
(14) Total Boat Capital	\$43,532,482		\$34,929,572		\$30,166,852	
Rate of Return on Fishing Gear & Equip (12/13*100)	0.9%		-3.7%		-6.2%	
Rate of Return on Total Boat Capital (12/14*100)	0.3%		-1.4%		-2.6%	

<sup>a</sup> Estimates of financial performance for the years 2008/09 to 2009/10 are based on the 2008 licence holder survey. Estimates of financial performance for year 2010/11 are based on the 2012 licence holder survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 3-4 Financial performance in the GSV Prawn Fishery, 2011/12 to 2013/14 (total fishery)<sup>a</sup>

	2011/12		2012/13 (closure)		2013/14 (closure)	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$2,059,119		-		-	
Variable Costs						
Fuel	\$398,107	16%	-	-	-	-
Repairs & Maintenance <sup>c</sup>	\$141,432	6%	-	-	-	-
Provisions	\$6,596	0%	-	-	-	-
Labour - paid	\$769,840	31%	-	-	-	-
(2) Labour - unpaid <sup>d</sup>	\$57,152	2%	-	-	-	-
Other	\$5,152	0%	-	-	-	-
(3) Total Variable Costs	\$1,378,279	56%	-	-	-	-
Fixed Costs						
Licence Fee	\$332,337	14%	-	-	-	-
Insurance	\$212,693	9%	\$186,665	24%	\$160,638	19%
(4) Interest	\$203,636	8%	\$198,306	25%	\$187,644	23%
(5) Labour - unpaid <sup>d</sup>	\$137,228	6%	\$168,438	21%	\$199,647	24%
Legal & Accounting	\$71,178	3%	\$73,190	9%	\$75,202	9%
Telephone etc.	\$27,661	1%	\$30,250	4%	\$32,839	4%
Slipping & Mooring	\$43,389	2%	\$79,140	10%	\$114,892	14%
Travel	\$4,670	0%	\$3,947	0%	\$3,223	0%
Office & Admin	\$43,068	2%	\$49,712	6%	\$56,356	7%
(6) Total Fixed Costs	\$1,075,860	44%	\$789,647	100%	\$830,441	100%
(7) Total Boat Cash Costs (3+6)	\$2,454,139	100%	\$789,647	100%	\$830,441	100%
Boat Gross Margin (1-3)	\$680,840		-		-	
(8) Total Unpaid Labour (2+5)	\$194,380		\$168,438		\$199,647	
Gross Operating Surplus (1-7+8)	-\$200,640		-\$621,209		-\$630,794	
(9) Boat Cash Income (1-7)	-\$395,020		-\$789,647		-\$830,441	
(10) Depreciation	\$838,389		\$862,931		\$887,472	
(11) Boat Business Profit (9-10)	-\$1,233,409		-\$1,652,578		-\$1,717,913	
(12) Profit at Full Equity (11+4)	-\$1,029,773		-\$1,454,272		-\$1,530,269	
Boat Capital						
(13) Fishing Gear & Equip	\$11,714,932		\$13,095,907		\$14,476,882	
Licence Value	\$14,588,150		\$14,368,290		\$14,148,431	
(14) Total Boat Capital	\$26,303,082		\$27,464,197		\$28,625,313	
Rate of Return on Fishing Gear & Equip (12/13*100)	-8.8%		-		-	
Rate of Return on Total Boat Capital (12/14*100)	-3.9%		-		-	

<sup>a</sup> Estimates of financial performance for year 2011/12 are based on the 2012 licence holder survey and estimates for the year 2012/13 and 2013/14 are interpolated using 2011/12 and 2014/15 estimates. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 3-5 Financial performance in the GSV Prawn Fishery, 2014/15 to 2016/17 (total fishery)<sup>a</sup>

	2014/15		2015/16		2016/17	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$5,855,305		\$5,223,990		\$6,209,353	
Variable Costs						
Fuel	\$542,240	14%	\$537,991	13%	\$522,677	13%
Repairs & Maintenance <sup>c</sup>	\$233,171	6%	\$236,296	6%	\$232,735	6%
Provisions	\$44,046	1%	\$44,636	1%	\$43,963	1%
Labour - paid	\$1,789,166	46%	\$1,841,733	46%	\$1,824,902	46%
(2) Labour - unpaid <sup>d</sup>	\$56,571	1%	\$58,234	1%	\$57,701	1%
Other	\$64,337	2%	\$65,199	2%	\$64,217	2%
(3) Total Variable Costs	\$2,729,532	70%	\$2,784,090	70%	\$2,746,195	68%
Fixed Costs						
Licence Fee	\$296,204	8%	\$327,443	8%	\$376,783	9%
Insurance	\$134,610	3%	\$135,492	3%	\$137,635	3%
(4) Interest	\$174,286	4%	\$172,305	4%	\$171,315	4%
(5) Labour - unpaid <sup>d</sup>	\$230,857	6%	\$236,034	6%	\$241,211	6%
Legal & Accounting	\$77,214	2%	\$77,720	2%	\$78,949	2%
Telephone etc.	\$35,429	1%	\$35,661	1%	\$36,225	1%
Slipping & Mooring	\$150,643	4%	\$151,630	4%	\$154,028	4%
Travel	\$2,500	0%	\$2,516	0%	\$2,556	0%
Office & Admin	\$63,000	2%	\$63,413	2%	\$64,416	2%
(6) Total Fixed Costs	\$1,164,743	30%	\$1,202,215	30%	\$1,263,118	32%
(7) Total Boat Cash Costs (3+6)	\$3,894,275	100%	\$3,986,305	100%	\$4,009,313	100%
Boat Gross Margin (1-3)	\$3,125,773		\$2,439,900		\$3,463,159	
(8) Total Unpaid Labour (2+5)	\$287,429		\$294,268		\$298,913	
Gross Operating Surplus (1-7+8)	\$2,248,459		\$1,531,953		\$2,498,953	
(9) Boat Cash Income (1-7)	\$1,961,030		\$1,237,685		\$2,200,040	
(10) Depreciation	\$912,014		\$859,562		\$807,111	
(11) Boat Business Profit (9-10)	\$1,049,016		\$378,123		\$1,392,930	
(12) Profit at Full Equity (11+4)	\$1,223,302		\$550,428		\$1,564,245	
Boat Capital						
(13) Fishing Gear & Equip	\$15,857,857		\$14,945,844		\$14,033,830	
Licence Value	\$13,928,571		\$12,426,802		\$14,770,780	
(14) Total Boat Capital	\$29,786,429		\$27,372,646		\$28,804,610	
Rate of Return on Fishing Gear & Equip (12/13*100)	7.7%		3.7%		11.1%	
Rate of Return on Total Boat Capital (12/14*100)	4.1%		2.0%		5.4%	

<sup>a</sup> Estimates of financial performance for the years 2014/15 to 2016/17 are based on the 2016 licence holder's survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)



Appendix Table 3-6 Financial performance in the GSV Prawn Fishery, 2017/18 and 2018/19 (total fishery)<sup>a</sup>

	2017/18		2018/19	
	Fishery Total	Share of TBCC <sup>b</sup>	Fishery Total	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$4,709,357		\$3,950,000	
Variable Costs				
Fuel	\$450,998	14%	\$335,778	14%
Repairs & Maintenance <sup>c</sup>	\$297,423	9%	\$219,129	9%
Provisions	\$17,763	1%	\$13,087	1%
Labour - paid	\$1,508,472	47%	\$1,119,637	46%
(2) Labour - unpaid <sup>d</sup>	\$70,000	2%	\$51,956	2%
Other	\$134,559	4%	\$99,138	4%
(3) Total Variable Costs	\$2,479,215	78%	\$1,838,725	75%
Fixed Costs				
Licence Fee	\$222,978	7%	\$258,370	11%
Insurance	\$65,256	2%	\$47,277	2%
(4) Interest	\$38,665	1%	\$27,298	1%
(5) Labour - unpaid <sup>d</sup>	\$156,800	5%	\$114,442	5%
Legal & Accounting	\$43,827	1%	\$31,752	1%
Telephone etc.	\$12,021	0%	\$8,709	0%
Slipping & Mooring	\$133,630	4%	\$96,812	4%
Travel	\$0	0%	\$0	0%
Office & Admin	\$25,776	1%	\$18,674	1%
(6) Total Fixed Costs	\$698,952	22%	\$603,334	25%
(7) Total Boat Cash Costs (3+6)	\$3,178,166	100%	\$2,442,059	100%
Boat Gross Margin (1-3)	\$2,230,142		\$2,111,275	
(8) Total Unpaid Labour (2+5)	\$226,800		\$166,399	
Gross Operating Surplus (1-7+8)	\$1,757,990		\$1,674,340	
(9) Boat Cash Income (1-7)	\$1,531,190		\$1,507,941	
(10) Depreciation	\$642,164		\$428,880	
(11) Boat Business Profit (9-10)	\$889,026		\$1,079,061	
(12) Profit at Full Equity (11+4)	\$927,691		\$1,106,359	
Boat Capital				
(13) Fishing Gear & Equip	\$9,881,375		\$6,599,436	
Licence Value	\$11,200,000		\$10,800,000	
(14) Total Boat Capital	\$21,081,375		\$17,399,436	
Rate of Return on Fishing Gear & Equip (12/13*100)	9.4%		16.8%	
Rate of Return on Total Boat Capital (12/14*100)	4.4%		6.4%	

<sup>a</sup> Estimates of financial performance for the year 2016/17 are based on the 2016 licence holders survey and estimates for the year 2017/18 are based on the 2018 licence holders survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022a)

## APPENDIX 4 Nominal Licence Fees and Net Economic Return

Appendix Table 4-1 Costs of management in the GSV Prawn Fishery, 2002/03 to 2022/23<sup>a</sup>

	Licence Fee (\$'000)	GVP		Catch		Licences	
		Total GVP (\$'000)	Fee/GVP (%)	Total Catch (tonnes)	Fee/catch (\$/kg)	Number of Licences	Fee/Licence (\$)
2002/03	275	4,240	6.5%	232	\$1.18	10	\$27,455
2003/04	251	3,117	8.1%	172	\$1.46	10	\$25,097
2004/05	259	3,761	6.9%	213	\$1.22	10	\$25,936
2005/06	270	2,870	9.4%	175	\$1.54	10	\$27,023
2006/07	257	3,270	7.9%	209	\$1.23	10	\$25,715
2007/08	302	2,924	10.3%	229	\$1.32	10	\$30,204
2008/09	325	3,484	9.3%	273	\$1.19	10	\$32,532
2009/10	340	2,573	13.2%	250	\$1.36	10	\$34,012
2010/11	353	2,116	16.7%	178	\$1.99	10	\$35,349
2011/12	334	1,759	19.0%	125	\$2.67	10	\$33,403
2012/13	-	-	-	-	-	10	-
2013/14	-	-	-	-	-	10	-
2014/15	196	4,118	4.8%	249	\$0.79	10	\$19,600
2015/16	217	3,674	5.9%	218	\$0.99	10	\$21,667
2016/17	249	4,367	5.7%	225	\$1.11	10	\$24,932
2017/18	254	4,798	5.3%	237	\$1.07	10	\$25,413
2018/19	258	3,950	6.5%	212	\$1.22	10	\$25,837
2019/20	294	2,020	14.6%	133	\$2.21	10	\$29,436
2020/21	410	2,093	19.6%	110	\$3.73	10	\$40,991
2021/22	343	3,190	10.7%	139	\$2.47	10	\$34,291
2022/23	539	n.a.	-	n.a.	-	10	\$53,855

<sup>a</sup> Values are in nominal terms.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Appendix Table 4-2 Net economic return <sup>a</sup> in the GSV Prawn Fishery, 2002/03 to 2021/22 (\$'000)

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	Net Economic Return	Net Economic Return (0% risk premium, 2/3 opportunity cost of labour)
2002/03	4,240	1,369	1,675	852	309	35	240
2003/04	3,117	1,025	1,471	1,786	647	-1,812	-1,445
2004/05	2,641	991	902	1,101	815	-1,169	-696
2005/06	2,870	1,121	1,156	1,357	1,004	-1,769	-1,181
2006/07	3,270	1,278	1,127	1,319	976	-1,430	-851
2007/08	2,442	975	887	684	956	-1,060	-532
2008/09	3,484	1,422	1,052	895	1,250	-1,135	-443
2009/10	2,573	1,114	1,062	831	1,161	-1,595	-953
2010/11	2,116	939	1,082	771	1,078	-1,755	-1,159
2011/12	1,759	831	1,099	716	1,001	-1,888	-1,331
2012/13 <sup>c</sup>	0	153	384	807	1,191	-2,535	-1,889
2013/14 <sup>c</sup>	0	192	427	855	1,396	-2,871	-2,109
2014/15	4,118	1,567	1,170	638	1,110	-368	260
2015/16	3,674	1,502	1,180	605	1,051	-664	-69
2016/17	4,367	1,494	1,206	568	987	113	677
2017/18	4,798	1,768	1,469	654	1,007	-100	480
2018/19	3,950	1,286	1,156	429	660	419	804
2019/20	2,020	965	1,000	399	614	-957	-599
2020/21	2,093	1,231	1,266	369	568	-1,342	-1,002
2021/22	3,190	1,365	1,339	339	522	-376	-56

<sup>a</sup> Adjusted for sample bias. Values are in nominal terms.

Source: BDO EconSearch analysis



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