



# **ECONOMIC AND SOCIAL INDICATORS FOR THE SOUTH AUSTRALIAN ABALONE FISHERY 2021/22**

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

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Prepared by

**BDO EconSearch**

Level 7, BDO Centre, 420 King William Street  
Adelaide SA 5000

Tel: +61 (8) 7324 6190

<https://www.bdo.com.au/en-au/econsearch>

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## ABBREVIATIONS

ABS	Australian Bureau of Statistics
AIASA	Abalone Industry Association of South Australia
CPI	Consumer Price Index
fob	free on board
FRDC	Fisheries Research and Development Corporation
fte	full time equivalent
GRP	gross regional product
GSP	gross state product
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
SA	South Australia
SARDI	South Australian Research and Development Institute
TACC	total allowable commercial catch

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## EXECUTIVE SUMMARY

The objective of this report is to present a set of economic and social performance indicators for the South Australian Abalone 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. Previous reported indicators have also helped with exploring restructuring in the Western Zone (FRDC project number 2016-213) and evaluating the net economic benefit of components of the stock assessment program (FRDC project number 2016-213). The economic and social indicators detailed in this report are summarized below.

### Economic Performance Indicators

Specific strategies and performance indicators relating to economic objectives outlined in the management plan are detailed in Table ES-1. These performance indicators are presented against the reference points or triggers, also outlined in the management plan, and the three-year trend in results. A summary of key economic indicators for the last four years is presented in Table ES-2.

Table ES-1 SA Abalone Fishery performance indicators and trends

Performance Indicator	Reference Points	Reference Period Trends (2018/19-2021/22)
Economic Indicator reports	Economic indicators are monitored annually	Reports published annually between 2018/19 and 2021/22
Net economic return of commercial fishery	A decline in net economic return over three consecutive years	Reference point not reached Real net economic return decreased in 2019/20 and 2020/21, but increased slightly in 2021/22
Gross Value of Product (GVP) of commercial fishery		Real GVP decreased in 2019/20, 2020/21 and 2021/22
Gross Operating Surplus (GOS) of commercial fishery		Real GOS decreased in 2019/20, 2020/21 and 2021/22
Profit at full equity of commercial fishery		Real profit at full equity but decreased in 2019/20, 2020/21 and 2021/22
Licence value		Real licence values increased in 2019/20 and 2020/21, but decreased in 2021/22
Return on capital		Real return on capital decreased in 2019/20 and 2020/21, but increased slightly in 2021/22
Fee per licence holder		Real fee per licence holder increased from \$72,058 in 2018/19 to \$76,057 in 2020/21, but decreased to \$59,529 in 2021/22
Licence fees as a proportion of total cash costs		Licence fees as a proportion of total cash costs increased from 13 per cent in 2018/19 to 20 per cent in 2020/21, then fell to 17 per cent in 2021/22

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	658t	509t	493t	492t
GVP	\$31.4m	\$23.7m	\$19.5m	\$18.3m
Fee/licence	\$72,058	\$72,096	\$76,057	\$59,529
Fee/GVP	7.8%	10.4%	13.3%	11.1%
Return on fishing gear and equip	186.6%	126.3%	48.5%	50.7%
Return on total capital	7.7%	4.8%	2.7%	2.8%
Licence Value	\$6.3m	\$6.6m	\$6.7m	\$6.4m
Gross state product	\$64.6m	\$58.9m	\$48.8m	\$45.3m
Employment	423 fte	397 fte	323 fte	300 fte
Net Economic Return	\$14.9m	\$9.4m	\$4.7m	\$4.8m
Net Economic Return/GVP	47.5%	39.8%	24.3%	26.1%

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

### Catch and Gross Value of Production

Total catch fell between 2014/15 and 2015/16 (16 per cent) as a result of cuts in catch in the Western and Central Zones. Total catch increased in 2016/17 (743t) but has declined since. In 2020/21 and 2021/22 total catch fell to the two lowest levels over the 20-year period. Between 2016/17 and 2021/22 catch has fallen by 34 per cent to be only 492t in 2021/22. From 2018/19 to 2021/22, the Central Zone catch decreased 52 per cent, the Western Zone catch decreased 26 per cent and the Southern Zone catch increased 6 per cent.

Over the 20 year period, 2002/03 to 2021/22, the real value of catch in the fishery fell by 68 per cent. This was due to a decrease in real price (43 per cent) and volume of catch (50 per cent) over the same period. In 2021/22, the value of catch was \$18.3 million, the lowest value over the 20-year period in real and nominal terms.

The average nominal price of South Australian Abalone decreased from \$40.77/kg in 2002/03 (or \$65.00 in real 2021/22 dollars) to \$37.15/kg in 2021/22. The average price of Abalone in 2021/22 in the Central Zone (\$43.18/kg) was higher than the Western Zone (\$39.84/kg) and the Southern Zone (\$28.85/kg). Greenlip Abalone generally commands a higher price than Blacklip, the Central Zone is a primarily a Greenlip Fishery, Western Zone a half-and-half and Southern Zone is primarily a Blacklip Fishery.

Hong Kong is the most important export destination for South Australian Abalone. As the Hong Kong Dollar (HKD) is pegged to the US Dollar (USD), the relationship between the USD and Australian Dollar (AUD) is expected to have an effect on the average price of Abalone in South Australia. The coefficient of correlation (-0.72) between the exchange rate (USD) and the nominal price for Abalone for the period 2002/03 to 2021/22 shows an inverse relation between the two. Thus, when the Australian dollar depreciates, the

average price received by South Australian Abalone fishers tends to increase, and vice-versa. While this relationship is not expected to hold in each individual year, it does hold over the longer period between 2002/03 to 2021/22<sup>1</sup>.

### Management Costs

The total number of licences in 2021/22 was 34, however for the first time since 2013/14 only 32 licences were active<sup>2</sup>. There were 35 licences until one was removed from the Western Zone in 2013/14 as part of the introduction of marine parks in the state. The Southern and Central Zone licence numbers remained unchanged between 2002/03 and 2021/22. Commercial Abalone fishers contribute, on cost recovery basis, for services to manage the Commercial Abalone Fishery with each of the three Abalone Fisheries costed for their services separately. The averaged management cost per licence across the three zones in real terms peaked at \$101,080 in 2004/05 but has been lower in subsequent years and was \$59,529 in 2021/22.

Licence fees as a percentage of Gross Value of Production (GVP) followed an increasing trend between 2002/03 and 2021/22 from 5.1 per cent to a peak of 13.3 per cent in 2020/21 before falling to 11.1 per cent in 2021/22. Notably, licence fees as a percentage of GVP were greater than 10 per cent between 2019/20 to 2021/22 and in 2013/14 (11.2 per cent). GVP declined in real terms between 2002/03 and 2021/22. This resulted in a significant increase in licence fees as a proportion of GVP. While there has been a decline in aggregate management fees, there were no significant changes in its components (compliance, stock assessment and others) between 2002/03 and 2021/22.

### Financial Performance Indicators

Average real income per licence followed a steady decreasing trend, with small fluctuations, from 2002/03 to 2015/16. Over the following three years from 2016/17 to 2018/19, average boat gross income began to recover before falling sharply again since 2019/20. The estimated average income per licence was almost \$584,000 in 2021/22, a slight decrease from \$586,000 in 2020/21 which was a large decrease from \$694,000 in 2019/20. Components of total gross boat income are illustrated in Figure ES-1. A prominent component was Boat Business Profit, which contributed around 29 per cent of Total Gross Boat Income.

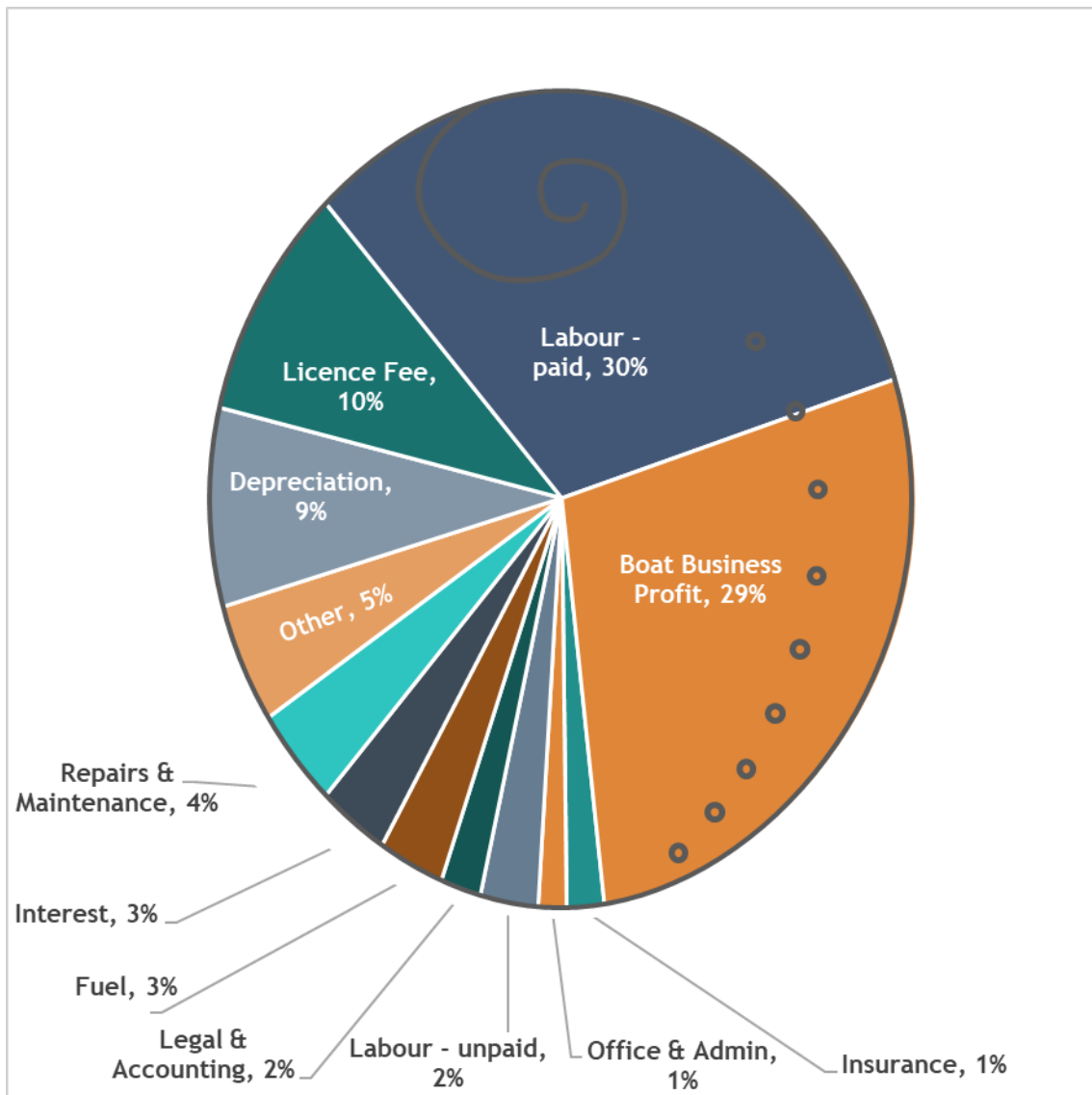
The average price for Abalone, followed a general downward trend between 2002/03 and 2013/14 where it began a gradual increase to 2018/19. However, average price fell marginally in 2019/20 before falling significantly since. Despite showing similar trends, real average costs per kilogram were 17 per cent lower in 2021/22 than in 2002/03, whereas real average price was 43 per cent lower. Real average costs per kilogram increased sharply between 2016/17 and 2019/20 but fell significantly in 2020/21 and 2021/22.

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<sup>1</sup> There are other market factors at play in determining market price such as supply from other markets, market access, and consumer tastes and preferences. Analysis of these factors is outside the scope of this economic indicators report.

<sup>2</sup> That is, recorded some level of catch for the 2021/22 financial year.

Figure ES-1 Components of total boat gross income in the SA Abalone Fishery, 2021/22

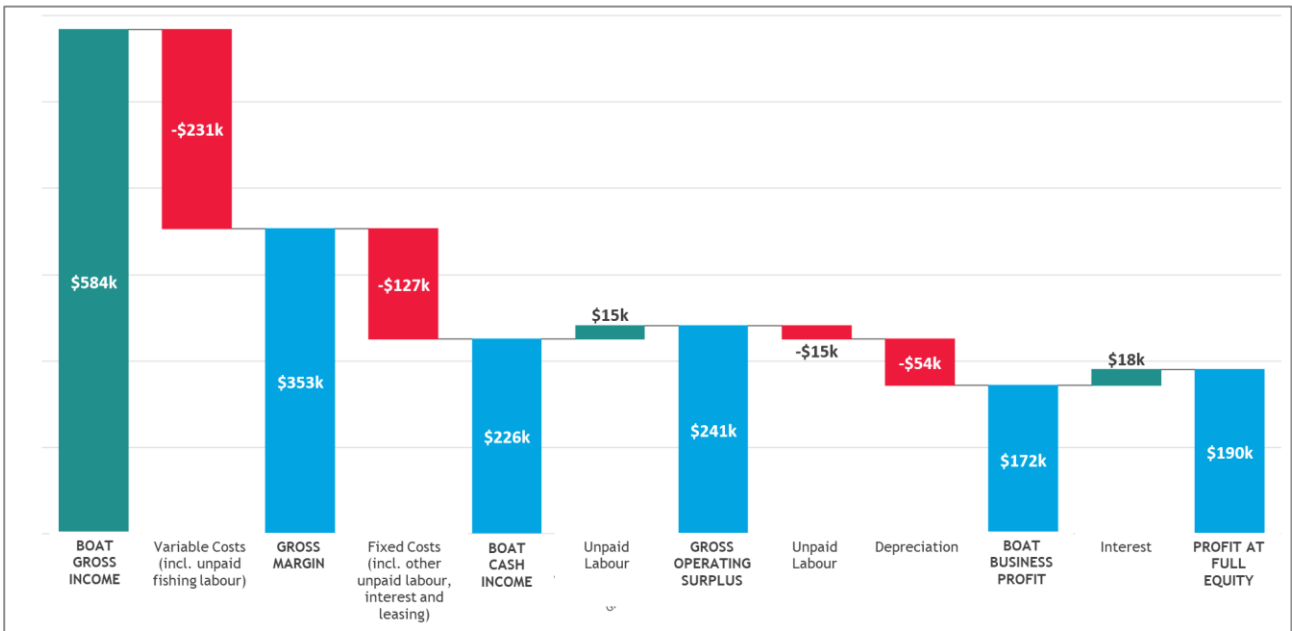


Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability measures generally followed a downward trend between 2002/03 to 2015/16 largely due to a decrease in average income driven by a decline in average product price over the period and a fall in catch in later years. Between 2016/17 and 2018/19 profitability measures began to recover and saw numbers close to those last seen in 2012/13. These measures dropped once again between 2019/20 to 2021/22, which was mostly attributable to the fall in catch and price over this period. A summary of boat level financial performance in the Abalone Fishery is illustrated in Figure ES-2 for 2021/22.

The estimated return to total capital for the fishery has declined since 2002/03, but a large part of the decline occurred between 2002/03 and 2006/07. This was a result of a decrease in gross income and an increase in both cash costs and depreciation. However, the rate of return to total capital varies with the value of fishing licences so is controlled by the yield that the market is willing to accept for the licence. While the rate of return to boat capital (i.e. fishing gear and equipment) is high (51 per cent in 2021/22), this was a significant decrease from 126 per cent in 2019/20. The decline is attributable to the increase in

fishing gear and equipment capital (58 per cent) and decrease in profit at full equity (42 per cent) since 2019/20. The increase in capital value of fishing gear and equipment is likely due to a combination of sampling variability and reinvestment by some operators. In comparison, the rate of return to total capital is much lower, estimated to be 2.8 per cent in 2021/22. This was a decrease from 4.8 per cent in 2019/20 and is likely due to the same reasons listed above. The return on total boat capital reflects strong demand for licences in the market rather than poor profitability.

Figure ES-2 Summary of boat level financial performance in the SA Abalone Fishery, 2021/22



### Contribution to South Australian Economy

The change in total output and Gross State Product (GSP) contributions are closely related to changes in price and fishery GVP. Between 2002/03 and 2021/22, there were fluctuations in GSP contributions, output, household income and employment, with none showing a clear trend. Output, employment and GSP all fell between 2018/19 and 2021/22. This decrease can be attributed to the decline GVP (42 per cent down from 2018/19) as a result of both lowered catch and price. GSP, output and employment in 2021/22 were also all lower than in 2002/03, despite having remained relatively stable over time. In 2021/22, the estimated total contribution of the fishery (including indirect effects) on the South Australian economy was \$88.8 million in output, 300 fte jobs, \$22.6 million in household income and \$45.3 million in GSP.

### 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. The net economic return generated in the South Australian Abalone Fishery generally followed a downward trend, with some fluctuations, from \$28.4 million in 2002/03 to \$4.8 million in 2021/22, in real terms. Net economic return expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. The indicator followed a downward trend, with some fluctuations, from 49 per cent in 2002/03 to 26 per cent in 2021/22.

## 1. INTRODUCTION

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.

This report is the twenty-fifth annual economic indicators report for the South Australian Abalone Fishery. The objective of this report, Economic and Social Indicators for the South Australian Abalone Fishery 2021/22, is to provide an update of the fishery's most recent economic and social performance based on the seventh licence holder survey undertaken in 2021.

This analysis was carried out for the 2021/22 financial year. The aim of all the studies is to present a set of economic and social performance indicators for the fishery 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 indicators detailed in this report include:

- gross value of production (catch and price)
- the cost of management of the fishery
- financial performance indicators (income, costs, profit, and return on investment)
- economic contribution of the fishery, both local and state
- net economic return
- Abalone exports from South Australia (quantity and value)
- external factors influencing the economic condition of the fishery
- a range of demographic and other indicators.

For purposes of comparison, summary economic indicators for all South Australian commercial fisheries, up to 2020/21, are presented in Appendix 3.

In 2016, 2018 and 2021, 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 (2022a).

## 2. METHOD OF ANALYSIS AND DEFINITION OF TERMS

### 2.1. Survey of Licence Holders, 2020/21

The questionnaire for the survey was based on the previous survey, conducted in 2018. It was drafted in consultation with each of the SA Abalone Fishery Executive Officers and management. 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).

Licence holders were sent an introductory letter from BDO EconSearch outlining the project and seeking their support. Telephone calls were then made by BDO EconSearch representatives to each licence holder seeking their participation in the survey. Interview times were arranged with willing participants. A total of twelve complete responses were collected, representing 35 per cent of the licences in the fishery. Two partial responses were also collected as these licence holders chose to answer specific questions. Nineteen licence holders representing twenty licences were not included in the survey for the following reasons:

- could not be contacted
- were unable or unwilling to provide sufficient detail about their fishing operations to make the survey data useable.

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

The 2021/22 economic indicators for the SA Abalone Fishery were derived using a range of primary and secondary data and the survey-based 2020/21 indicators. The following information was used to adjust the 2020/21 indicators to reflect the fisheries' performance in 2021/22.

- SARDI data were used to reflect changes in catch and its value between 2020/21 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 2020/21 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).

### 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 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 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 harvest.

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 licence holder. 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 licence holders, 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)
- bait
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs (nets, lines, etc.).

## 3. ECONOMIC INDICATORS FOR THE SA ABALONE FISHERY

### 3.1. Economic Objectives of the SA Abalone Fishery

According to the *Management Plan for the South Australian Commercial Abalone Fishery* (PIRSA Fisheries and Aquaculture 2021), 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 objectives for the fishery. There are four key goals for the South Australian Commercial Abalone Fishery:


- Ensure the abalone resource is sustainably harvested
- Optimum use and equitable distribution of the abalone resource to the benefit of the community
- Minimise impacts on the ecosystem
- Cost effective and participative management of the fishery

The economic and social objectives of the fishery, as described by the management plan, are summarised in Table 3-1. These performance indicators are presented in the following sections.

Table 3-1 Economic and social objectives of the SA Abalone Fishery

Goal	Objectives	Strategies	Performance indicators	Reference points
2. Optimum use and equitable distribution of the abalone resource to the benefit of the community	2b. Maintain a flow of economic benefit from the fishery to the South Australian community	<p>2bi. Develop and implement management arrangements that allow commercial operators to maximise operational flexibility, economic efficiency and returns</p> <p>2bii. Communicate sustainability and economic outcomes of the fishery to the broader community</p>	<p>Gross Value of Product (GVP)</p> <p>Gross Operating Surplus (GOS)</p> <p>Profit at full equity</p> <p>Licence value</p> <p>Value of quota units</p> <p>Economic rent (net economic return)</p> <p>Return on capital</p>	<p>Economic indicators are monitored annually</p> <p>A decline in economic rent (net economic return) over three consecutive years</p>
4. Cost effective and participative management of the fishery	4a. Promote cost-effective and efficient management of the fishery, in line with the governments cost recovery policy	<p>4ai. Develop and implement management arrangements that are effective at achieving management objectives whilst minimising costs</p> <p>4aii. Determine and discuss the real costs of management, research and compliance for the fishery on an annual basis</p> <p>4aiii. Recover licence fees from commercial licence holders, sufficient to cover the attributed costs of management, research and compliance of fishery and report in accordance with cost-recovery policy</p>	<p>Fee per licence holder</p> <p>Licence fees as a proportion of total cash costs</p>	

 Indicators reported in economic reports.

 Reference points that can be calculated from reported economic indicators

Source: PIRSA 2021

### 3.2. Catch and Gross Value of Production

The total allowable catch is determined by management, with the industry also implementing additional catch limits beyond this. This means that changes in the catch are controlled, typically in response to changes in stock abundance. The data presented in Table 3-2 indicate that the total catch of Abalone in SA was relatively steady between 2002/03 and 2012/13. However, the catch in 2013/14 (661 tonnes) was 25 per cent lower than the previous year (875 tonnes) and was the first year to drop below 800 tonnes in over 15 seasons. In 2014/15, the catch somewhat recovered to 744 tonnes but in 2015/16, catch fell once again to 625 tonnes.

The fall in catch between 2014/15 and 2015/16, approximately 16 per cent, was mainly due to a 16 per cent decline in catch in the Western Zone and a 15 per cent reduction in the Central Zone. The Western Zone licence holders through the Abalone Industry Association of South Australia (AIASA) voluntarily withheld harvesting 21 per cent of the Blacklip quota and 4.5 per cent of the Greenlip quota due to concerns about the condition of stocks in 2015. For the Central Zone the decline in catch was a result of a combination of status of the stocks (transitional depleting), difficult conditions around Kangaroo Island at the start of the fishing season delaying catch towards the end on the 2016 calendar year and consequentially outside the 2015/16 financial year. For 2016 all of the Central Zone quota was caught.

Table 3-2 Catch and value of the SA Abalone Fishery, 2002/03 to 2021/22

	Catch (tonnes)	Nominal Value of Catch (\$'000)	Real Value of Catch (2021/22 \$'000)
2002/03	890	36,289	57,850
2003/04	879	31,582	48,915
2004/05	902	33,821	49,391
2005/06	896	33,859	49,447
2006/07	883	31,420	45,097
2007/08	889	31,044	42,605
2008/09	837	32,520	43,956
2009/10	855	28,068	36,904
2010/11	815	27,998	35,436
2011/12	822	28,901	36,141
2012/13	875	29,625	36,286
2013/14	661	22,087	26,232
2014/15	744	25,237	29,609
2015/16	625	22,207	25,884
2016/17	743	27,557	31,620
2017/18	700	27,214	30,419
2018/19	658	28,532	31,443
2019/20	509	21,659	23,681
2020/21	493	18,337	19,504
2021/22	492	18,279	18,279

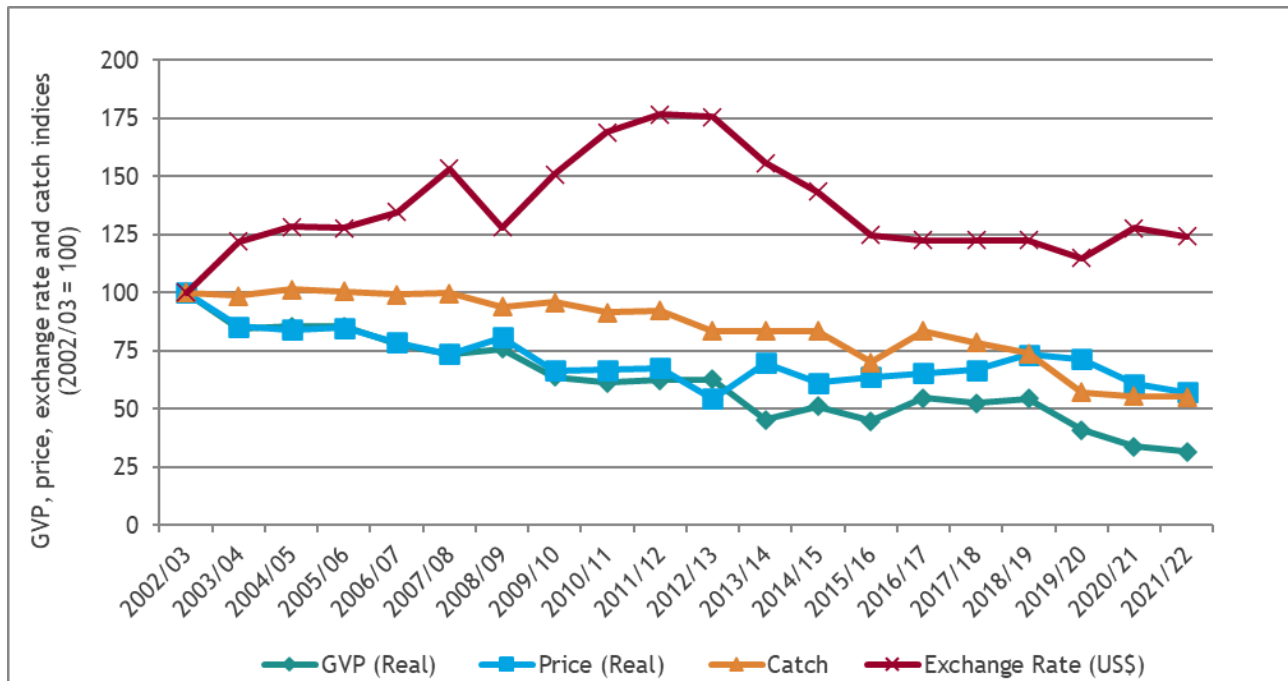
Source: SARDI Aquatic Sciences

Total catch recovered in 2016/17 (to 743t) but has decreased each year since, falling to 492t in 2021/22. This downward trend is a result of a reduction in the Western Zone TACC along with voluntary catch restrictions within the same zone and the Central Zone closing their Blacklip fishery in 2017 (Executive Officer Western Zone, pers. comm.). The additional decrease of catch between 2019/20 and 2020/21 is attributed to the impact of the COVID-19 pandemic and restrictions on accessing the Chinese market. Since 2019/20 the total catch has remained at the lowest levels over the 20-year period. From 2018/19 to 2021/22, the Central Zone catch decreased 52 per cent, the Western Zone catch decreased 26 per cent and the Southern Zone catch increased 6 per cent.

The falls in catch in 2013/14, 2015/16, and since 2019/20 have also affected the GVP of the Abalone fishery. As catch levels were relatively steady between 2002/03 and 2012/13, the GVP of the fishery closely followed the decline in price (Figure 3-1). However, due to the drop in catch in 2013/14, 2015/16, and since 2019/20 the GVP of the Abalone fishery was significantly reduced in these years in comparison to previous years.

Figure 3-1 and Figure 3-2 show that the average price of Abalone in SA decreased by 43 per cent in real terms between 2002/03 and 2021/22, noting that 2002/03 had the highest price over the 20-year period and 2021/22 had the second lowest price over the 20-year period. The real price declined from \$65.00/kg in 2002/03 to \$37.15/kg in 2021/22. The average price of Abalone in 2021/22 in the Central Zone (\$43.18/kg) was higher than the Western Zone (\$39.84/kg) and the Southern Zone (\$28.85/kg). Greenlip Abalone generally commands a higher price than Blacklip, the Central Zone is a primarily a Greenlip Fishery, Western Zone a half-and-half and Southern Zone is primarily a Blacklip Fishery.

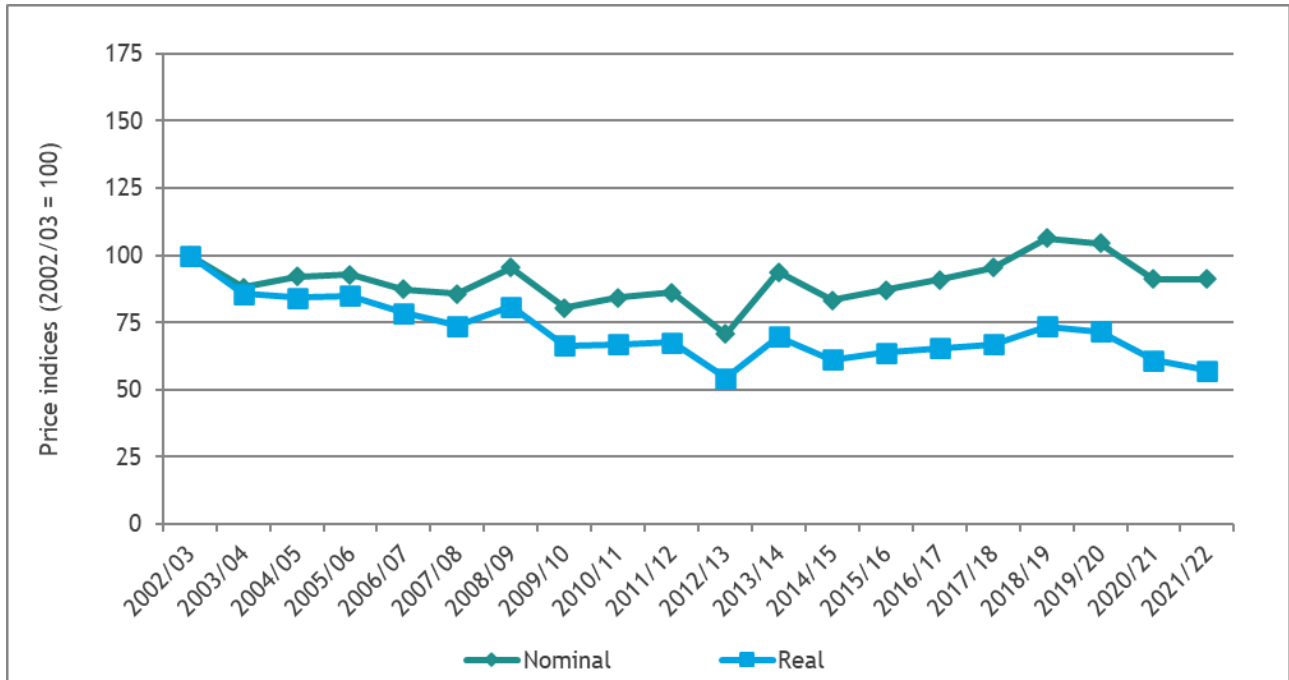
Figure 3-1 GVP, price, catch and exchange rate indices for the SA Abalone Fishery <sup>a</sup>



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

Source: SARDI Aquatic Sciences

Figure 3-2 Price indices for the SA Abalone 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 Adelaide 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: SARDI Aquatic Sciences

Exchange rate, price and catch are determining factors in GVP, which itself determines fishers' total boat gross income. Exchange rate has an influence on Abalone price (as explained in Section 4.1.4), which is a determining factor, alongside catch, in GVP. Figure 3-1 shows the long-term relationship these factors have with one another. While many factors determine price, exchange rate and price have a moderate inverse relationship meaning that as the exchange rate increases (the Australian Dollar appreciates), it tends to push price down. Since 2002/03, falling price and catch have each contributed to the fall in GVP. The appreciation of the Australian Dollar over the same period will have contributed to the falling price.

### 3.3. Summary of Factors Affecting Costs in the SA Abalone 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 were 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, bait 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 SA Abalone Fishery, 2020/21 to 2021/22

	2020/21	2021/22	Change
Total Days Fished <sup>a</sup>	1,335	1,271	-4.8%
Price of Fuel - Transportation Index <sup>b</sup>	105.7	119.7	13.2%
Interest charges (%/annum) <sup>c</sup>	6.51%	6.59%	1.4%
CPI Adelaide <sup>d</sup>	117.8	125.3	6.4%
Wage Price Index <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 SA Abalone 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 SA Abalone 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
- observer services (specifically observer coverage)
- research services (including the FRDC levy).

Table 3-4 shows licence fee receipts for the SA Abalone Fishery for the period 2002/03 to 2022/23. Licence fee values shown are in real 2021/22 dollars. Total licence fees decreased from \$2.59m in 2020/21 to \$2.02m in 2021/22. The decrease in licence fees was attributable to credits for undelivered services by SARDI in the Western Zone, and the recognition of decreased fishing activity with compliance decreasing by 150 days (Executive Officer Western Zone, pers. comm. 2023).

For the fishery as a whole (Table 3-4) for the period 2002/03 to 2021/22:

- licence fees as a percentage of GVP increased from 5.1 per cent in 2002/03 to 11.2 per cent in 2013/14 due to the decline in GVP and an increase in aggregate licence fees. This indicator fell to 7.8 per cent in 2018/19 before increasing to 13.3 per cent in 2020/21. In 2021/22 this indicator has decreased to 11.1 per cent due to the decrease in licence fees from \$2.59 million in 2020/21 to \$2.02 million in 2021/22 in real dollars.
- licence fees per kilogram of landed Abalone increased from \$3.31/kg in 2002/03 to \$5.25/kg in 2020/21 as a result of a reduction in catch. However, this has decreased to \$4.11/kg in 2021/22 due to the decreased licence fee.
- the cost per licence peaked at \$101,080 in 2004/05 but has since fallen by 41 per cent and was \$59,529 in 2021/22.
- the total number of licences did not change between 1970/71 and 2012/13. In 2013/14, the number was reduced by one in the Western Zone through the Commercial Fisheries Voluntary Catch/Effort Reduction Program to mitigate any potential biological or economic effects from the redistribution of commercial fishing effort on establishment of marine parks in the state.



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

	Licence Fee	GVP	Fee/GVP	Catch	Fee/Catch	Licences	Fee/Licence <sup>b</sup>
	(\$'000)	(\$'000)	(%)	(tonnes)	(\$/kg)	(No.)	(\$/licence)
2002/03	2,946	57,850	5.1%	890	\$3.31	35	\$84,179
2003/04	3,250	48,915	6.6%	879	\$3.70	35	\$92,846
2004/05	3,538	49,391	7.2%	902	\$3.92	35	\$101,080
2005/06	3,392	49,447	6.9%	896	\$3.79	35	\$96,909
2006/07	3,433	45,097	7.6%	883	\$3.89	35	\$98,086
2007/08	3,472	42,605	8.1%	889	\$3.91	35	\$99,205
2008/09	3,414	43,956	7.8%	837	\$4.08	35	\$97,537
2009/10	3,303	36,904	9.0%	855	\$3.86	35	\$94,379
2010/11	3,079	35,436	8.7%	815	\$3.78	35	\$87,980
2011/12	3,068	36,141	8.5%	822	\$3.73	35	\$87,663
2012/13	3,001	36,286	8.3%	875	\$3.43	35	\$85,746
2013/14	2,925	26,232	11.2%	661	\$4.43	34	\$86,033
2014/15	2,890	29,609	9.8%	744	\$3.88	34	\$84,985
2015/16	2,489	25,884	9.6%	625	\$3.98	34	\$73,220
2016/17	2,588	31,620	8.2%	743	\$3.48	34	\$76,125
2017/18	2,473	30,419	8.1%	700	\$3.53	34	\$72,735
2018/19	2,450	31,443	7.8%	658	\$3.72	34	\$72,058
2019/20	2,451	23,681	10.4%	509	\$4.82	34	\$72,096
2020/21	2,586	19,504	13.3%	493	\$5.25	34	\$76,057
2021/22	2,024	18,279	11.1%	492	\$4.11	34	\$59,529
2022/23 <sup>c</sup>	2,196	n.a.	-	n.a.	-	34	\$64,581

<sup>a</sup> This table presents management costs in real 2021/22 dollars. Nominal management costs are presented in Appendix 5.

<sup>b</sup> The fee per licence holder comprises the Abalone unit fee and the Abalone base fee as an average across all three zones.

<sup>c</sup> 2022/23 values have not been adjusted.

Source: PIRSA Fisheries and Aquaculture and SARDI Aquatic Sciences

### 3.5. Financial Performance Indicators

The major measures of the financial performance of surveyed licences in the SA Abalone Fishery for the years 2019/20 to 2021/22 are shown in Table 3-5. Estimates for 2019/20 were based on the 2018 survey and estimates for 2020/21 and 2021/22 were based on the most recent survey conducted in 2021. Financial performance estimates for 2002/03 to 2018/19 are provided in Appendix 4.

The survey responses were divided into three groups according to the zones in which they fished. The results for the Central (CZ) and Southern Zones (SZ) are presented together in order to maintain the confidentiality of licence holders in those zones. The 2021 survey covered 6 licences in the Western Zone (WZ) and 6 in the Central and Southern Zones combined and the 2018 survey covered 12 licences in the WZ and 6 in the Central and Southern Zones combined. The financial performance estimates are presented, by zone, in Table 3-6. Operating costs for licence holders who hire a contractor rather than dive themselves were allocated based on the expenditure patterns of the divers and owner/operators surveyed.

#### Income

Gross receipts from the sale of Abalone decreased by 16 per cent between 2019/20 and 2020/21, followed by a small decrease of 0.3 per cent in 2021/22. The decrease in total income was due the decline in catch and price (Figure 3-1). The estimated average income per licence surveyed in the SA Abalone Fishery was almost \$584,000 in 2021/22, a decrease from \$694,000 in 2019/20 (Table 3-5). The average income for licences surveyed in the combined SZ and CZ was higher (\$658,000) than the average income for boats surveyed in the WZ (\$510,000) (Table 3-6).

#### Costs

Table 3-5 shows total costs separated into variable and fixed costs. Variable costs (64 per cent of total boat cash costs in 2021/22) represented a greater proportion of total boat cash costs than fixed costs (36 per cent). Variable costs as a proportion of total costs have decreased over time, falling from a high of 79 per cent in 2002/03 (Appendix Table 4-1) to 64 per cent in 2021/22. This shift is largely due to increased interest costs and licence fees (fixed costs) and decreased variable labour costs. Variable labour costs are influenced by fluctuations in the number of days fished as reduced fishing days (from factors such as weather or season length) reduce the labour required for fishing. As a proportion of total costs, variable costs were slightly lower in the combined CZ and SZ (60 per cent) than in the WZ (68 per cent) (Table 3-6).

It was estimated that average total boat cash costs (TBCC) decreased by 4 per cent between 2020/21 and 2021/22. It is likely that the majority of this decrease is a result of the decreased number of days fished.

Table 3-5 Financial performance in the SA Abalone Fishery, 2019/20 to 2021/22 (average per licence) <sup>a</sup>

		2019/20		2020/21		2021/22	
		Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1)	Total Boat Gross Income	\$693,724		\$585,788		\$583,935	
Variable Costs							
	Fuel	\$13,765	3%	\$15,214	4%	\$16,396	5%
	Repairs & Maintenance <sup>c</sup>	\$22,206	5%	\$24,130	6%	\$24,436	7%
	Ice	\$613	0%	\$527	0%	\$533	0%
	Provisions	\$0	0%	\$3,806	1%	\$3,854	1%
	Labour - paid	\$200,169	49%	\$185,740	50%	\$180,596	50%
(2)	Labour - unpaid <sup>d</sup>	\$2,524	1%	\$1,342	0%	\$1,305	0%
	Other	\$19,867	5%	\$3,593	1%	\$3,639	1%
(3)	<b>Total Variable Costs</b>	<b>\$259,144</b>	<b>63%</b>	<b>\$234,353</b>	<b>63%</b>	<b>\$230,759</b>	<b>64%</b>
Fixed Costs							
	Licence Fee	\$63,550	16%	\$72,620	20%	\$60,458	17%
	Insurance	\$5,888	1%	\$8,283	2%	\$8,810	2%
(4)	Interest	\$27,734	7%	\$18,080	5%	\$18,327	5%
(5)	Labour - unpaid <sup>d</sup>	\$7,909	2%	\$13,418	4%	\$13,703	4%
(6)	Leasing	\$17,121	4%	\$0	0%	\$0	0%
	Legal & Accounting	\$12,154	3%	\$9,191	2%	\$9,776	3%
	Telephone etc.	\$2,632	1%	\$2,451	1%	\$2,607	1%
	Slipping & Mooring	\$980	0%	\$1,271	0%	\$1,352	0%
	Travel	\$1,830	0%	\$5,482	1%	\$5,831	2%
	Office & Admin	\$10,038	2%	\$6,229	2%	\$6,626	2%
(7)	<b>Total Fixed Costs</b>	<b>\$149,835</b>	<b>37%</b>	<b>\$137,025</b>	<b>37%</b>	<b>\$127,489</b>	<b>36%</b>
(8)	<b>Total Boat Cash Costs (3+7)</b>	<b>\$408,979</b>	<b>100%</b>	<b>\$371,377</b>	<b>100%</b>	<b>\$358,248</b>	<b>100%</b>
	<b>Boat Gross Margin (1-3)</b>	<b>\$434,581</b>		<b>\$351,435</b>		<b>\$353,176</b>	
(9)	<b>Total Unpaid Labour (2+5)</b>	<b>\$10,432</b>		<b>\$14,760</b>		<b>\$15,008</b>	
	<b>Gross Operating Surplus (1-8+9)</b>	<b>\$295,178</b>		<b>\$229,170</b>		<b>\$240,694</b>	
(10)	<b>Boat Cash Income (1-8)</b>	<b>\$284,745</b>		<b>\$214,411</b>		<b>\$225,687</b>	
(11)	<b>Depreciation</b>	<b>\$29,830</b>		<b>\$53,300</b>		<b>\$53,999</b>	
(12)	<b>Boat Business Profit (10-11)</b>	<b>\$254,915</b>		<b>\$161,111</b>		<b>\$171,688</b>	
(13)	<b>Profit at Full Equity (12+4+6)</b>	<b>\$299,770</b>		<b>\$179,191</b>		<b>\$190,014</b>	
Boat Capital							
(14)	Fishing Gear & Equip	\$237,408		\$369,703		\$374,555	
	Licence Value	\$5,991,836		\$6,326,294		\$6,358,481	
(15)	<b>Total Boat Capital</b>	<b>\$6,229,244</b>		<b>\$6,695,997</b>		<b>\$6,733,036</b>	
	<b>Rate of Return on Fishing Gear &amp; Equip (13/14*100)</b>	<b>126.3%</b>		<b>48.5%</b>		<b>50.7%</b>	
	<b>Rate of Return on Total Boat Capital (13/15*100)</b>	<b>4.8%</b>		<b>2.7%</b>		<b>2.8%</b>	

<sup>a</sup> Financial performance estimates for 2019/20 are based on the 2018 licence holder survey and estimates for 2020/21 and 2021/22 are based on the 2021 licence holder survey. All figures are in nominal terms.

<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).

<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

Table 3-6 Financial performance in the SA Abalone Fishery 2021/22, by zone (average per licence)<sup>a</sup>

		Western Zone		Central & Southern Zone <sup>a</sup>		South Australia	
		Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1)	Total Boat Gross Income	\$509,576		\$658,295		\$583,935	
Variable Costs							
	Fuel	\$11,298	3%	\$21,495	6%	\$16,396	5%
	Repairs & Maintenance <sup>c</sup>	\$22,313	6%	\$26,560	8%	\$24,436	7%
	Ice	\$169	0%	\$898	0%	\$533	0%
	Provisions	\$6,610	2%	\$1,098	0%	\$3,854	1%
	Labour - paid	\$210,805	57%	\$150,386	44%	\$180,596	50%
(2)	Labour - unpaid <sup>d</sup>	\$1,766	0%	\$843	0%	\$1,305	0%
	Other	\$625	0%	\$6,652	2%	\$3,639	1%
(3)	<b>Total Variable Costs</b>	<b>\$253,585</b>	<b>68%</b>	<b>\$207,933</b>	<b>60%</b>	<b>\$230,759</b>	<b>64%</b>
Fixed Costs							
	Licence Fee	\$58,476	16%	\$62,439	18%	\$60,458	17%
	Insurance	\$6,577	2%	\$11,043	3%	\$8,810	2%
(4)	Interest	\$4,055	1%	\$32,598	9%	\$18,327	5%
(5)	Labour - unpaid <sup>d</sup>	\$21,205	6%	\$6,201	2%	\$13,703	4%
(6)	Leasing	\$0	0%	\$0	0%	\$0	0%
	Legal & Accounting	\$7,623	2%	\$11,930	3%	\$9,776	3%
	Telephone etc.	\$2,854	1%	\$2,360	1%	\$2,607	1%
	Slipping & Mooring	\$514	0%	\$2,190	1%	\$1,352	0%
	Travel	\$4,698	1%	\$6,964	2%	\$5,831	2%
	Office & Admin	\$11,443	3%	\$1,808	1%	\$6,626	2%
(7)	<b>Total Fixed Costs</b>	<b>\$117,445</b>	<b>32%</b>	<b>\$137,534</b>	<b>40%</b>	<b>\$127,489</b>	<b>36%</b>
(8)	<b>Total Boat Cash Costs (3+7)</b>	<b>\$371,031</b>	<b>100%</b>	<b>\$345,466</b>	<b>100%</b>	<b>\$358,248</b>	<b>100%</b>
	Boat Gross Margin (1-3)	\$255,990		\$450,362		\$353,176	
(9)	<b>Total Unpaid Labour (2+5)</b>	<b>\$22,971</b>		<b>\$7,044</b>		<b>\$15,008</b>	
	Gross Operating Surplus (1-8+9)	\$161,516		\$319,873		\$240,694	
(10)	<b>Boat Cash Income (1-8)</b>	<b>\$138,545</b>		<b>\$312,828</b>		<b>\$225,687</b>	
(11)	Depreciation	\$32,943		\$75,055		\$53,999	
(12)	<b>Boat Business Profit (10-11)</b>	<b>\$105,602</b>		<b>\$237,773</b>		<b>\$171,688</b>	
(13)	<b>Profit at Full Equity (12+4+6)</b>	<b>\$109,656</b>		<b>\$270,372</b>		<b>\$190,014</b>	
Boat Capital							
(14)	Fishing Gear & Equip	\$398,934		\$350,176		\$374,555	
	Licence Value	\$6,497,981		\$6,218,982		\$6,358,481	
(15)	<b>Total Boat Capital</b>	<b>\$6,896,915</b>		<b>\$6,569,157</b>		<b>\$6,733,036</b>	
	Rate of Return on Fishing Gear & Equip (13/14*100)	27.5%		77.2%		50.7%	
	Rate of Return on Total Boat Capital (13/15*100)	1.6%		4.1%		2.8%	

<sup>a</sup> Financial performance estimates for the Central and Southern Zones are presented together to ensure confidentiality of licence holders.

<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).

<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

The largest individual cost item in all zones was labour, which accounted for around 55 per cent of total boat costs in 2021/22. The labour costs reported in Table 3-5 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. Imputed unpaid labour (on average \$15,000 per boat for 2021/22) was divided into variable (fishing and repairs and maintenance) and fixed (management and administration) components based on the 2021 licence holder survey.

Similar to previous years, the other significant cash costs were licence fees (17 per cent), repairs and maintenance (7 per cent), interest (5 per cent) and fuel (5 per cent) (Table 3-6). Total boat cash costs were 7 per cent lower in the combined Central and Southern Zones than in the Western Zone, average fixed costs were 17 per cent higher, and variable costs were 18 per cent lower (Table 3-6).

### 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). There was a slight increase in boat gross margin in 2021/22 (\$353,000) compared to the previous year 2020/21 (\$351,000), however this is still a significant decrease compared to 2019/20 (\$435,000) since total boat gross income decreased by more than total variable costs over the two-year period. Boat gross margin was significantly higher (76 per cent) in the combined Central and Southern Zones than in the Western Zone due to a higher total boat gross income and lower total variable costs in the combined Central and Southern Zones.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members as a cost item. The average GOS of all licences in 2021/22 was estimated to be \$241,000, a 5 per cent increase from 2020/21, however an 18 per cent decrease from 2019/20. This was due to total boat gross income falling by more than total boat cash costs over the two-year period, but a decrease in total cash costs between 2020/21 and 2021/22. Gross operating surplus was about double in the Central and Southern Zones compared to the Western Zone since total boat cash costs were lower and total boat gross income was higher in the combined Central and Southern Zones.

Boat cash income is measured as gross operating surplus with imputed wages (unpaid labour) included as cash costs. The estimated average boat cash income in 2021/22 was around \$226,000 per boat, a 5 per cent increase from 2020/21, but a 21 per cent decrease from 2019/20. Boat cash income was 126 per cent higher in the combined Central and Southern Zones than in the Western Zone.

Gross operating surplus and boat business profit give an indication of the capacity of the operator to remain in the fishery in the short to medium term. In 2021/22, the average boat business profit was around \$172,000, 7 per cent higher than the previous year, but 33 per cent less than in 2019/20. Boat business profit was 125 per cent higher in the combined Southern and Central Zones than in the Western Zone.

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 because it is not affected by changes in the level of borrowing or interest rate. Profit at full equity in 2021/22 (\$190,000) was 6 per cent higher than the previous year (\$179,000), however 37 per cent lower than two years prior (almost \$300,000). Profit at full equity in the combined Central and Southern Zones was almost two times higher than that in the Western Zone (167 per cent).

## 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 in the fishery. 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. The rate of return to total capital has been calculated as the profit at full equity as a percentage of the total capital employed.

The average capital value of fishing gear and licence in the SA Abalone Fishery in 2021/22 was estimated to be \$6.7 million per licence. This included the licence holder's adjusted estimate of the value of a licence (\$6.4 million) and estimated investment in boats and fishing gear (almost \$375,000 per boat). The updated licence value estimate in the Central and Southern Zones were around 4.3 per cent lower than those in the Western Zone. The estimated value of fishing gear and equipment was also 12.2 per cent lower in the combined Central and Southern Zones than in the Western Zone.

The average rate of return to total capital for the fishery for the period 2019/20 to 2021/22 is reported in Table 3-5. While the rate of return to boat capital (i.e. fishing gear and equipment) is high (50.7 per cent in 2021/22), this was a significant decrease over two years from 126 per cent in 2019/20. The decline is attributable to the increase in fishing gear and equipment capital (58 per cent) and decrease in profit at full equity (37 per cent). The increase in capital value of fishing gear and equipment is likely due to a combination of sampling variability and reinvestment by some operators.

In comparison, the rate of return to total capital is much lower, estimated to be 2.8 per cent in 2021/22. This was a decrease from 4.8 per cent in 2019/20 and is likely due to the same reasons listed above. This low rate of return to total capital is a function of the valuation of licences by licence holders. It does not fully reflect profitability of fishing firms or performance of the fishery.

Profit at full equity in 2021/22 was significantly higher in the combined Central and Southern Zones (\$270,000) compared to the Western Zone (\$110,000). The rate of return to total capital followed a similar relationship between the Zones, being 4.1 per cent in the combined Central and Southern Zones) and 1.6 per cent in the Western Zone (Table 3-6).

## Licence values

The value of licences represents a significant proportion of the capital used by each licence holder in the fishery. The reported licence value for 2021/22 in Table 3-5 represents an updated estimate of the licence holders' estimate of the value of their licence based on the 2021 survey responses. The estimated licence value has been updated using a weighted average change of profit at full equity.

There was a large degree of variability in licence holder estimates of licence value. Estimates ranged from approximately \$2.5 million to \$8.5 million per licence, part of this variation was due to varying quota between licence holders and zones. Some of the licence holders and divers surveyed fished a single licence, others fished parts of multiple licences.

The PIRSA Fisheries and Aquaculture Public Register indicates 6 licence transfers between 2011/12 and 2021/22. Since there have been limited 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 3-7.

Table 3-7 Sensitivity of rate of return to changes in licence value, 2021/22 <sup>a</sup>

Estimated Licence Value	\$3,179,241	\$6,358,481	\$9,537,722
Rate of Return to Total Capital (%)	5.3%	2.8%	1.9%

<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 and Table 3-6 a licence value of \$3.2 million (approximately 50 per cent below the licence value estimated for 2021/22) would mean an annual return to the total asset of 5.3 per cent, while a licence value of \$9.5 million (approximately 50 per cent above the licence value estimated for 2021/22) would mean an annual return to the total asset of 1.9 per cent (Table 3-7). The Abalone Fishery's rate of return to total capital is particularly low when compared with other SA Fisheries generating this level of profit at full equity using industry estimated licence values. This suggests that industry may be overestimating the value of their licences and as a result other indicators derived using licence values, including return to total capital and net economic return may be underestimated. However, it is difficult to resolve this issue or obtain an accurate licence value without a transparent market for trading licences.

### 3.6. State and Regional Economic Contribution

Estimates of the economic contribution of the SA Abalone fishing industry on the South Australian and regional (Eyre/Western<sup>3</sup>, Yorke Peninsula<sup>4</sup> and Limestone Coast<sup>3</sup>) economies in 2021/22 are outlined below.

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

Estimates of the direct economic contribution of the SA Abalone 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 and regional levels were based on models for the State as a whole and for the Eyre and Western and Limestone Coast State Government regions which were prepared for the

<sup>3</sup> The Eyre and Western and Limestone Coast regions are consistent with the SA Government Regions, as defined by the Department of Planning, Transport and Infrastructure.

<sup>4</sup> The Yorke Peninsula region is comprised of Barunga West, Copper Coast, Mallala, Wakefield and Yorke Peninsula local government areas.

Department of Premier and Cabinet (BDO EconSearch 2020). The Yorke Peninsula region model was prepared for this study.

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 the financial survey for 2020/21 and updated for 2021/22, as described earlier. On an item-by-item basis, the expenditures were allocated between those occurring in the regions, those occurring in South Australia and those goods and services imported from outside the state.

Estimates of the net value of local (i.e. regional and 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 or regional 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 Gross Regional Product (GRP) 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 or GRP** is a measure of the net contribution of an activity to the state/regional economy. Contribution to GSP or GRP 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 or GRP 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 SA Abalone fishing industry in South Australia and the Eyre/Western, Yorke Peninsula and Limestone Coast regions are provided in Table 3-8 through to Table 3-11.

For each measure of economic activity, the contributions at the state level are greater than the sum of the regional level contributions. This is to be expected, as the regional contribution is simply a component, albeit a significant one, of the total state contribution.

The direct contribution measures fishing and downstream activities (such as processing, transport, retail/food services and capital expenditure). The flow-on contribution measures the economic effects in



other sectors of the economy (trade, manufacturing, etc.) generated by the fishing industry activities, that is, the multiplier effects.

**Table 3-8 The economic contribution of the SA Abalone fishing industry in South Australia, 2021/22**

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	18.3	21%	52	17%	6.3	28%	14.4	32%
Processing	13.3	15%	109	36%	6.0	26%	13.1	29%
Transport	1.2	1%	5	2%	0.4	2%	0.5	1%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.1	0%	1	0%	0.0	0%	0.1	0%
Capital expenditure <sup>b</sup>	0.8	1%	4	1%	0.3	1%	0.4	1%
<b>Total Direct <sup>c</sup></b>	<b>33.6</b>	<b>38%</b>	<b>170</b>	<b>57%</b>	<b>13.0</b>	<b>57%</b>	<b>28.4</b>	<b>63%</b>
<b>Flow-on effects</b>								
Trade	3.5	4%	22	7%	1.4	6%	2.0	5%
Business Services	4.7	5%	28	9%	2.3	10%	2.6	6%
Manufacturing	3.0	3%	8	3%	0.6	3%	0.9	2%
Transport	1.8	2%	7	2%	0.5	2%	0.8	2%
Other Sectors	42.3	48%	64	21%	4.7	21%	10.6	23%
<b>Total Flow-on <sup>c</sup></b>	<b>55.2</b>	<b>62%</b>	<b>129</b>	<b>43%</b>	<b>9.6</b>	<b>43%</b>	<b>16.9</b>	<b>37%</b>
<b>Total <sup>c</sup></b>	<b>88.8</b>	<b>100%</b>	<b>300</b>	<b>100%</b>	<b>22.6</b>	<b>100%</b>	<b>45.3</b>	<b>100%</b>
Total/Direct	2.6	-	2	-	1.7	-	1.6	-
Total/Tonne	\$180,500	-	0.6	-	\$45,800	-	\$92,100	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 21 full-time and 75 part-time jobs, that is, 96 jobs in aggregate, which was estimated to be equal to 52 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

**Table 3-9 The economic contribution of the Western Zone SA Abalone fishing industry in the Eyre & Western regions, 2021/22**

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	11.1	36%	32	32%	4.7	52%	8.5	48%
Processing	4.6	15%	25	25%	1.4	15%	3.3	19%
Transport	0.2	0%	1	1%	0.1	1%	0.1	0%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.3	1%	2	2%	0.1	1%	0.1	1%
<b>Total Direct <sup>c</sup></b>	<b>16.2</b>	<b>52%</b>	<b>60</b>	<b>59%</b>	<b>6.2</b>	<b>69%</b>	<b>12.0</b>	<b>68%</b>
<b>Flow-on effects</b>								
Trade	1.4	5%	9	9%	0.6	6%	0.8	5%
Business Services	1.3	4%	8	8%	0.6	7%	0.7	4%
Manufacturing	0.5	2%	2	2%	0.1	1%	0.2	1%
Transport	1.2	4%	4	4%	0.3	3%	0.5	3%
Other Sectors	10.2	33%	20	19%	1.3	14%	3.3	19%
<b>Total Flow-on <sup>c</sup></b>	<b>14.6</b>	<b>48%</b>	<b>42</b>	<b>41%</b>	<b>2.8</b>	<b>31%</b>	<b>5.6</b>	<b>32%</b>
<b>Total <sup>c</sup></b>	<b>30.8</b>	<b>100%</b>	<b>102</b>	<b>100%</b>	<b>9.1</b>	<b>100%</b>	<b>17.5</b>	<b>100%</b>
Total/Direct	1.9	-	1.7	-	1.5	-	1.5	-
Total/Tonne	\$110,300	-	0.4	-	\$32,500	-	\$62,700	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 20 full-time jobs and 40 part-time jobs, that is, 60 jobs in aggregate, which was estimated to be equal to 28 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

**Table 3-10 The economic contribution of the Central Zone SA Abalone fishing industry in the Yorke Peninsula region, 2021/22**

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	3.1	55%	7	38%	0.9	54%	2.2	62%
Processing	0.3	6%	1	4%	0.0	2%	0.1	3%
Transport	0.0	1%	0	1%	0.0	1%	0.0	0%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.3	5%	1	7%	0.1	6%	0.1	3%
<b>Total Direct <sup>c</sup></b>	<b>3.7</b>	<b>66%</b>	<b>10</b>	<b>51%</b>	<b>1.1</b>	<b>63%</b>	<b>2.5</b>	<b>69%</b>
<b>Flow-on effects</b>								
Trade	0.3	5%	2	9%	0.1	6%	0.1	4%
Business Services	0.3	5%	2	9%	0.1	8%	0.2	4%
Manufacturing	0.1	2%	0	2%	0.0	1%	0.0	1%
Transport	0.1	3%	1	3%	0.0	2%	0.1	2%
Other Sectors	1.1	20%	5	26%	0.3	19%	0.7	20%
<b>Total Flow-on <sup>c</sup></b>	<b>1.9</b>	<b>34%</b>	<b>9</b>	<b>49%</b>	<b>0.7</b>	<b>37%</b>	<b>1.1</b>	<b>31%</b>
<b>Total <sup>c</sup></b>	<b>5.6</b>	<b>100%</b>	<b>19</b>	<b>100%</b>	<b>1.8</b>	<b>100%</b>	<b>3.6</b>	<b>100%</b>
Total/Direct	1.5	-	2.0	-	1.6	-	1.5	-
Total/Tonne	\$79,100	-	0.3	-	\$24,700	-	\$50,200	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 2 full-time jobs and 16 part-time jobs, that is, 18 jobs in aggregate, which was estimated to be equal to 7 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

**Table 3-11 The economic contribution of the Southern Zone SA Abalone fishing industry in Limestone Coast region, 2021/22**

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	4.1	49%	10	37%	0.9	46%	3.2	62%
Processing	0.9	10%	4	15%	0.2	10%	0.5	10%
Transport	0.1	1%	0	1%	0.0	1%	0.0	1%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.1	1%	0	1%	0.0	1%	0.0	1%
<b>Total Direct <sup>c</sup></b>	<b>5.1</b>	<b>61%</b>	<b>14</b>	<b>55%</b>	<b>1.2</b>	<b>59%</b>	<b>3.8</b>	<b>73%</b>
<b>Flow-on effects</b>								
Trade	0.4	5%	2	9%	0.2	8%	0.2	4%
Business Services	0.4	4%	2	8%	0.2	9%	0.2	4%
Manufacturing	0.2	2%	1	2%	0.0	2%	0.0	1%
Transport	0.2	3%	1	4%	0.1	4%	0.1	2%
Other Sectors	2.1	25%	6	22%	0.4	19%	0.9	16%
<b>Total Flow-on <sup>c</sup></b>	<b>3.3</b>	<b>39%</b>	<b>12</b>	<b>45%</b>	<b>0.8</b>	<b>41%</b>	<b>1.4</b>	<b>27%</b>
<b>Total <sup>c</sup></b>	<b>8.4</b>	<b>100%</b>	<b>26</b>	<b>100%</b>	<b>2.0</b>	<b>100%</b>	<b>5.2</b>	<b>100%</b>
Total/Direct	1.6	-	1.8	-	1.7	-	1.4	-
Total/Tonne	\$58,900	-	0.2	-	\$14,300	-	\$36,900	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 2 full-time jobs and 16 part-time jobs, that is, 18 jobs in aggregate, which was estimated to be equal to 10 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

### Value of output

The value of output generated directly in South Australian Abalone fishing enterprises summed to \$18.3 million in 2021/22 (Table 3-8). Output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$15.3 million (Table 3-8). Of this, \$5.0 million occurred in the Eyre/Western region, \$0.6 million occurred in the Yorke Peninsula region and \$1.0 million occurred in the Limestone Coast region (Table 3-9, Table 3-10 and Table 3-11).

Flow-ons to other sectors of the state economy added another \$55.2 million in output (\$19.8 million in the regional economies). The flow-on sectors (i.e. those sectors not directly related to fishing and aquaculture) most affected were the business services (\$4.7 million), trade (\$3.5 million), manufacturing (\$3.0 million) and transport (\$1.8 million) sectors. The total output contribution in SA (direct plus indirect) was estimated to be \$88.8 million in 2021/22 (\$30.8 million in the Eyre/Western region, \$5.6 million in the Yorke Peninsula region and \$8.4 million in the Limestone Coast region).

### Employment and household income

In 2021/22, the SA Abalone Fishery was responsible for the direct employment of around 52 full-time equivalents (fte) and downstream activities created employment of around 119 fte jobs state-wide. Flow-on business activity was estimated to generate a further 129 fte jobs state-wide (42 in the Eyre/Western region, 9 in the Yorke Peninsula region and 12 in the Limestone Coast region). These state-wide fte jobs were concentrated in the business services (28), trade (22), manufacturing (8) and transport (7) sectors. The total employment contribution in SA was estimated to be 300 fte jobs (102 in the Eyre/Western region, 19 in the Yorke Peninsula region and 26 in the Limestone Coast region).

Personal income of \$6.3 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$6.7 million in downstream activities in SA. An additional \$9.6 million was earned by wage earners in other businesses in SA as a result of fishing and associated downstream activities. The total household income contribution was estimated to be \$22.6 million in SA (\$9.1 million in the Eyre/Western region, \$1.8 million in the Yorke Peninsula region and \$2.0 million in the Limestone Coast region).

### Contribution to GSP and GRP

As noted above, contribution to GSP or GRP is measured as value of output less the cost of goods and services (including imports) used in producing the output. In 2021/22, total Abalone fishing industry related contribution to GSP in South Australia was \$45.3 million (\$17.5 million in the Eyre/Western region, \$3.6 million in the Yorke Peninsula region and \$5.3 million in the Limestone Coast region). Of the \$45.3 million contribution to GSP in South Australia, \$14.4 million was generated by fishing directly, \$14.0 million was generated by downstream activities and \$16.9 million was generated in other sectors of the state economy.

### Total contributions over time

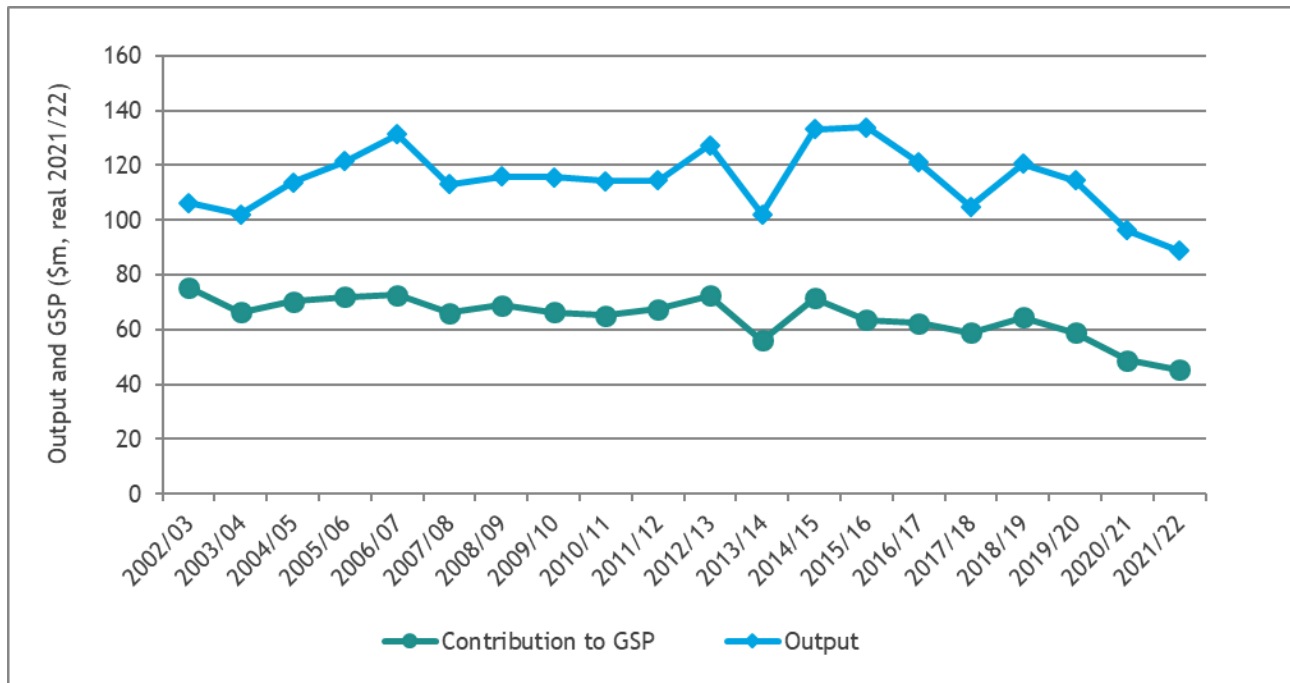
Figure 3-3 and Figure 3-4 illustrate the total economic contribution (direct plus flow-on effects) of the fishery on the SA economy for the 20 years, 2002/03 to 2021/22. Estimates of economic contribution are expressed in 2020/21 dollars. The Adelaide Consumer Price Index was used to adjust for inflation (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 are 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 total output and GSP contributions are closely related to changes in price and fishery GVP (Figure 3-3). Over the 20-year period there were multiple fluctuations in contribution to GSP, output, household income and employment but no clear trend overall. Household income peaked in 2014/15, fell through to 2016/17 and once again increased in 2018/19 before declining in 2020/21 and 2021/22. This is likely to have been affected by the updated estimates of activity from the 2016 licence holder survey and by the update of the economic model used to estimate the contributions. Output, employment and GSP all fell between 2018/19 and 2021/22. This decrease can be attributed to the decline in GVP (36 per cent down from 2018/19) as a result of both lowered catch and price. GSP, output and household income in 2021/22 were all lower than in 2002/03, despite having remained relatively stable over time.

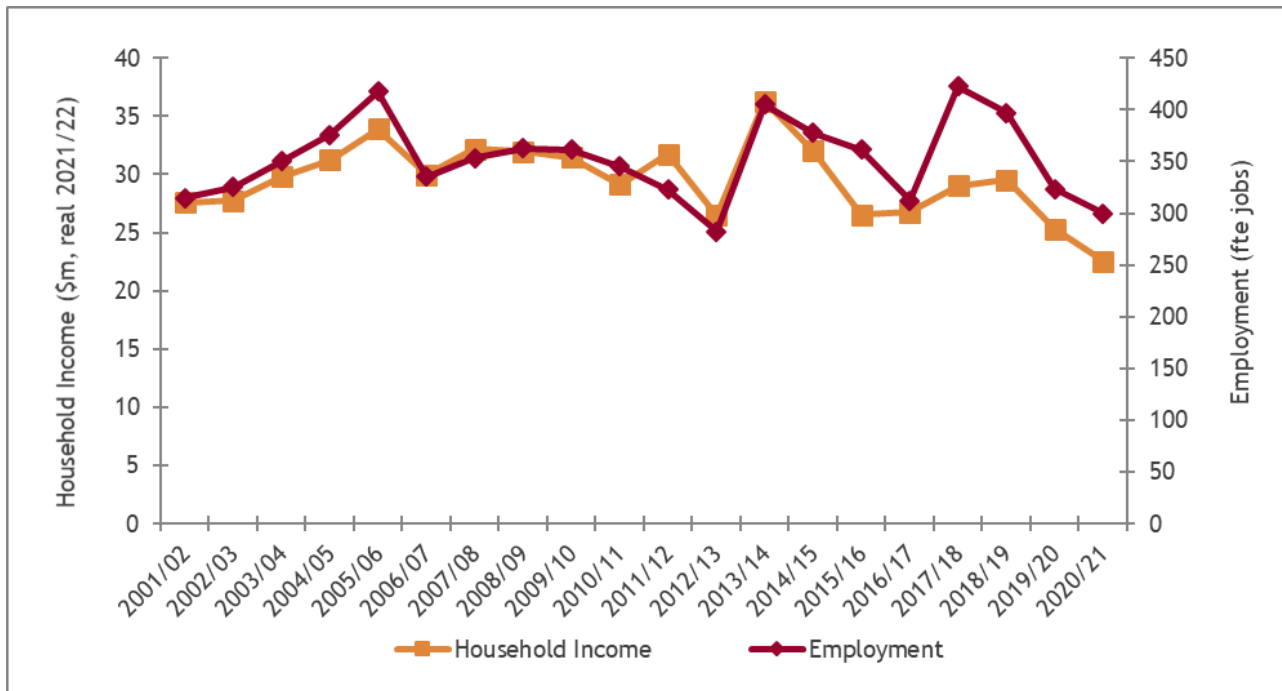
Figure 3-3 Total gross state product and output contribution of the SA Abalone Fishery on the South Australian economy, 2002/03 to 2021/22 <sup>a</sup>



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

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

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



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

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

### 3.6.3. Additional expenditures and contributions

In addition to the contributions generated by recurrent expenditures in the Abalone Fishery (as detailed in Table 3-8 to Table 3-11), further regional economic contributions are generated by the investment of Abalone profits in new, local ventures by Abalone licence holders.

In principle, for any new venture to succeed it must eventually be producing goods or services at a price sufficient to cover the cost of production and yield a return on the initial investment. By that stage, the contribution generated by the “new” venture can be attributed to the venture itself and the demand for the goods or services it produces.

However, for many businesses the time period from initial investment to self-sufficiency can take several years (e.g. a vineyard taking three to four years before the first commercial harvest). It is during this establishment phase that the contributions of the new venture can be attributed to the source of the investment.

Anecdotal evidence from the survey suggested that net economic return generated in the SA Abalone Fishery has been and continues to be used to finance new ventures. Although new investments outside the Abalone industry have been declining over the last few years, the 2021 licence-holder survey indicated that a small amount of local investment has still been made in new ventures and existing businesses in the last five years. Average annual investment expenditures in new and existing enterprises are reported in Table 3-12. It was estimated that aggregate annual local investment expenditure by the SA Abalone Fishery is around \$1.7 million in SA, \$50,000 per licence holder (Table 3-12). This is nine times lower than the value of investment estimated in the previous survey (2018).

While investment in existing businesses has the potential to add significantly to local economic activity, the approach taken to estimate the regional economic contribution was to focus solely on investment in new, local enterprises as these investments are unquestionably a net addition to local economic activity. Around half of this local investment expenditure was into new enterprises that generate additional wealth to the region. The proportion of local expenditure that went into new enterprises estimated from the 2018 survey was around one third (BDO EconSearch 2022a).

**Table 3-12 Average annual local investment expenditure by licence holders in the SA Abalone Fishery, 2020/21**

	Existing Businesses/ Assets (supports existing employment opportunities) (\$'000)	New Enterprises (creates new employment opportunities) (\$'000)	Total (\$'000)
Estimated Average Annual Expenditure per Licence Holder <sup>a</sup>	18	31	50
Estimated Aggregate Annual Expenditure for the Abalone Fishery <sup>b</sup>	623	1,069	1,692

<sup>a</sup> Based on survey respondents' estimated investment expenditures over the 5 years, 2017/18 to 2020/21.

<sup>b</sup> These estimates are based on a sample (12) of licence holders. Given the 'lumpy' nature of investment expenditure they may not be representative of all licence holders.

Source: BDO EconSearch analysis

The contributions of local investment expenditure in new enterprises are reported in Table 3-13. In aggregate, it was estimated that the contribution of local investment expenditure in new enterprises generated the following economic activity:

- approximately \$1.5 million in gross regional product (GRP)
- approximately 11 fte jobs
- almost \$900,000 in household income.

The estimated contributions of local investment by Abalone licence holders in 2020/21, shown in Table 3-13, indicate the extent to which such investments add to the regional contribution of the industry.

**Table 3-13 Regional economic contribution of local investment expenditures in new enterprises by licence holders in the SA Abalone Fishery, 2020/21 <sup>a</sup>**

Sector	Investment/ Turnover (\$'000)	Employment (fte jobs)	Household income (\$'000)	Contribution to GRP (\$'000)
Investment Sectors (direct)	1,069	3	163	357
All other sectors <sup>a</sup> (indirect)	1,919	8	711	1,135
<b>Total</b>	<b>2,988</b>	<b>11</b>	<b>874</b>	<b>1,492</b>

<sup>a</sup> 'All other sectors' refers to the other industry sectors in the regional economy such as manufacturing, trade, business and property services, transport and finance.

Source: BDO EconSearch analysis



### 3.7. Net Economic Return

Net economic return (NER) 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). NER is maximised when economic efficiency is maximised. NER<sup>5</sup> can also be defined as the difference between the price of a good produced using a natural resource and the unit cost of turning that natural resource into the good. It is worth noting that zero NER is the usual situation for firms in a market without limited or restricted entry and that this rent is the income received by ownership of a licence. In this case the natural resource is the SA Abalone Fishery and the good produced is the landed Abalone.

The unit costs or long term costs all need to be covered if the licence holder is to remain in the fishery. 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 licences and the cost of capital invested in the boat and gear (excluding licence). Capital costs 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.

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. It is important to keep in mind that rates applied have a strong influence on estimated rent and is subjective.

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 (this assumes entrepreneurial and quasi rents are zero in aggregate). In real terms, the NER generated in the SA Abalone Fishery was estimated to have decreased from \$28.5 million in 2002/03 to \$4.8 million in 2021/22 (Table 3-14). The NER for 2021/22 was the second lowest estimated over the past 20 years, only slightly ahead of the NER for 2020/21 (\$4.7m). Notably, the estimate for 2019/20 period was the fourth lowest over the 20-year period. These recent years are significantly lower than the average over the 20-year period (\$15.5 million).

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<sup>5</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.

Table 3-14 Net economic return (NER) <sup>a</sup> in the SA Abalone 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
2002/03	57,850	19,469	6,882	2,084	966	28,449
2003/04	48,915	17,924	7,133	2,086	967	20,805
2004/05	53,861	13,758	9,145	2,877	1,443	26,637
2005/06	51,973	14,470	9,141	3,379	1,696	23,287
2006/07	47,401	14,362	9,212	3,331	1,671	18,824
2007/08	42,153	12,665	7,353	1,866	1,325	18,946
2008/09	43,491	13,061	7,303	1,880	1,335	19,912
2009/10	36,513	11,120	7,239	1,872	1,329	14,953
2010/11	35,060	10,713	7,001	1,846	1,311	14,189
2011/12	35,854	8,871	6,524	1,814	1,210	17,434
2012/13	36,286	9,688	6,583	1,923	1,241	16,851
2013/14	26,232	7,795	5,964	1,633	1,054	9,787
2014/15	29,609	7,767	8,188	2,066	923	10,664
2015/16	25,884	6,784	7,242	1,912	854	9,093
2016/17	31,620	8,386	7,784	1,779	794	12,877
2017/18	30,419	8,984	5,792	1,121	892	13,629
2018/19	31,443	8,869	5,727	1,063	846	14,938
2019/20	23,681	7,189	5,241	1,018	810	9,423
2020/21	19,504	6,676	5,088	1,775	1,231	4,735
2021/22	18,279	6,123	4,518	1,690	1,172	4,776

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

<sup>b</sup> This table presents net economic return in real 2021/22 dollars. Values have been converted to 2021/22 dollars using Adelaide CPI (ABS 2022a). Nominal values of net economic return are presented in Appendix 5.

Source: BDO EconSearch analysis

Licences have value because the owner receives current and expected flows of NER from the fishery. The return to the capital value of the fishery can be interpreted as the NER generated relative to the market value of licences. It follows that the rate of return varies when either the NER or the market valuation of licences varies. The aggregate value of licences in 2021/22 was estimated to be approximately \$216 million (34 licences with an average value of \$6.4 million). An aggregate value of licences of \$216 million means the market is willing to accept a return of 2.2 per cent on the annual net economic return of \$4.8 million in 2021/22 (Table 3-14 and Figure 5-14).

The Abalone Fishery's rate of return to total capital is particularly low when compared with other SA Fisheries generating this level of profit at full equity using industry estimated licence values. This suggests that industry may be overestimating the value of their licences and as a result other indicators derived using licence values, including return to total capital and net economic return may be underestimated. However, it is difficult to resolve this issue or obtain an accurate licence value without a transparent market for trading licences.

## 4. OTHER INDICATORS

### 4.1. Factors Influencing the Economic Condition of the SA Abalone Fishery

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

#### 4.1.1. COVID-19

The Abalone Fishery was one of the South Australian fisheries that was affected by the COVID-19 pandemic. In January 2020, the COVID-19 pandemic was beginning to affect key export markets, as countries closed their borders and entered into lockdowns. By May 2020, South Australian Abalone exporters indicated that COVID-19 was having a significant detrimental impact on international markets. This was due to uncertainty around the timing and scale of recovery from the pandemic. The impact of the COVID-19 pandemic was most significant in 2019/20 and then eased in 2020/21 despite other on-going challenges.

In the 2021 survey, most licence holders indicated that COVID-19 affected their business operations in 2019/20. In comparison to a typical operational year, the most impacted aspect of the Abalone Fishery business operations was business revenue (down 34 per cent), followed by the price received for products (down 21 per cent) and volume of catch (down 16 per cent) (Table 4-1). Based on licence holder estimates, the total loss of Abalone Fishery GVP attributable to the COVID-19 pandemic was \$11.3 million in 2019/20. It is therefore estimated that if the COVID-19 pandemic had not impacted the Abalone in 2019/20, GVP would have totalled at around \$33.0m.

Table 4-1 Estimated impact of COVID-19 in 2019/20 on various operational aspects of the SA Abalone Fishery

Impact of COVID-19 on the following factors	Average percentage change
Price received for products	-21%
Volume of catch	-16%
Business revenue	-34%
Cost of a day of commercial fishing (wages only)	0%
Cost of a day of commercial fishing (non-wage costs)	7%

Source: 2021 survey response

#### 4.1.2. Access to Chinese markets

In November 2020, trade disputes between China and Australia created difficulties for Abalone fishers' market access in China. In the 2021 survey, most licence holders indicated that access to Chinese markets affected their business operations in 2020/21. In comparison to a typical operational year, the most impacted aspects of Abalone Fishery business operations were business revenue (down 28 per cent), followed by the price received for products (25 per cent) and volume of catch (down 24 per cent) (Table 4-2). Based on licence holder estimates, the total loss of Abalone Fishery GVP attributable loss of access to Chinese markets was \$7.3 million in 2020/21. It is therefore estimated that if a loss of access to Chinese markets had not impacted the revenue of the Abalone Fishery in 2020/21, GVP would have totalled at around

\$25.6m. This would have seen the fishery brought closely back to trend from 2018/19 which had a GVP of \$28.5m.

Licence holders also provided commentary on the impact of a loss of access to Chinese markets on their businesses. The overall drop in price of Abalone was mainly attributable to a 40 to 50 per cent decline in price for Blacklip Abalone. In comparison Greenlip Abalone prices remained stable, resulting in an overall Abalone price decrease estimated at around 25 per cent (Table 4-2). Licence holders also explained that market access issues in China created other complications with cash flow and shipping. Some licence holders could not ship their product, leading to periods of having stock of Abalone with no buyer. Other licence holders were able to ship the product, but then had difficulties accessing freezer space once the stock arrived in China.

**Table 4-2** Estimated impact of China market access in 2020/21 on various operational aspects of the Abalone Fishery

Impact of China market access on the following factors	Average percentage change
Price received for products	-25%
Volume of catch	-24%
Business revenue	-28%
Cost of a day of commercial fishing (wages only)	0%
Cost of a day of commercial fishing (non wage costs)	6%

Source: 2021 survey response

### 4.1.3. Stock assessment

In order to ensure that the Abalone Fishery is harvested sustainably the *Management Plan for the South Australian Commercial Abalone Fishery* (PIRSA Fisheries and Aquaculture 2021) links the TACC setting process to a number of key indicators of fishery performance. The Management Plan requires annual application of the harvest strategy to determine stock status and review the total allowable commercial catch (TACC). The harvest strategy adopted in 2012 has been identified to have several limitations (Stobart et al. 2014, 2015). The harvest strategy was under review and redevelopment during 2018/19, with a strategy developed for each fishery zone in 2020 (Burnell et al. 2021a).

The changes from the previous stock assessment to 2020/21 include that in the Western Zone, Greenlip’s stock status was reclassified from depleting to sustainable, while in the Central Zone, Blacklip’s stock status was reclassified from depleting to recovering (Table 4-3).

Table 4-3 summarises the most recent stock assessments by Abalone Fishery zone, including 2021 for the Western Zone, 2020 for the Central Zone, and 2020/21 for the Southern Zone. Full details of the stock assessments can be found in Burnell et al. (2022 and 2021b) and Stobart et al. (2022).

Table 4-3 Harvest strategy stock status by Abalone Fishery zone, 2020 <sup>a</sup>

	Greenlip	Blacklip
Western Zone	Sustainable	Sustainable
Central Zone	Depleting	Recovering
Southern Zone	Undefined	Sustainable

<sup>a</sup> Data available for the Western Zone is for the 2021 calendar year, data for the Central Zone is for the 2020 calendar year, while the data available for the Southern Zone is for the 2020/21 financial year.

<sup>b</sup> Low catch and limited data on Greenlip in the Southern Zone prevents determination of stock status.

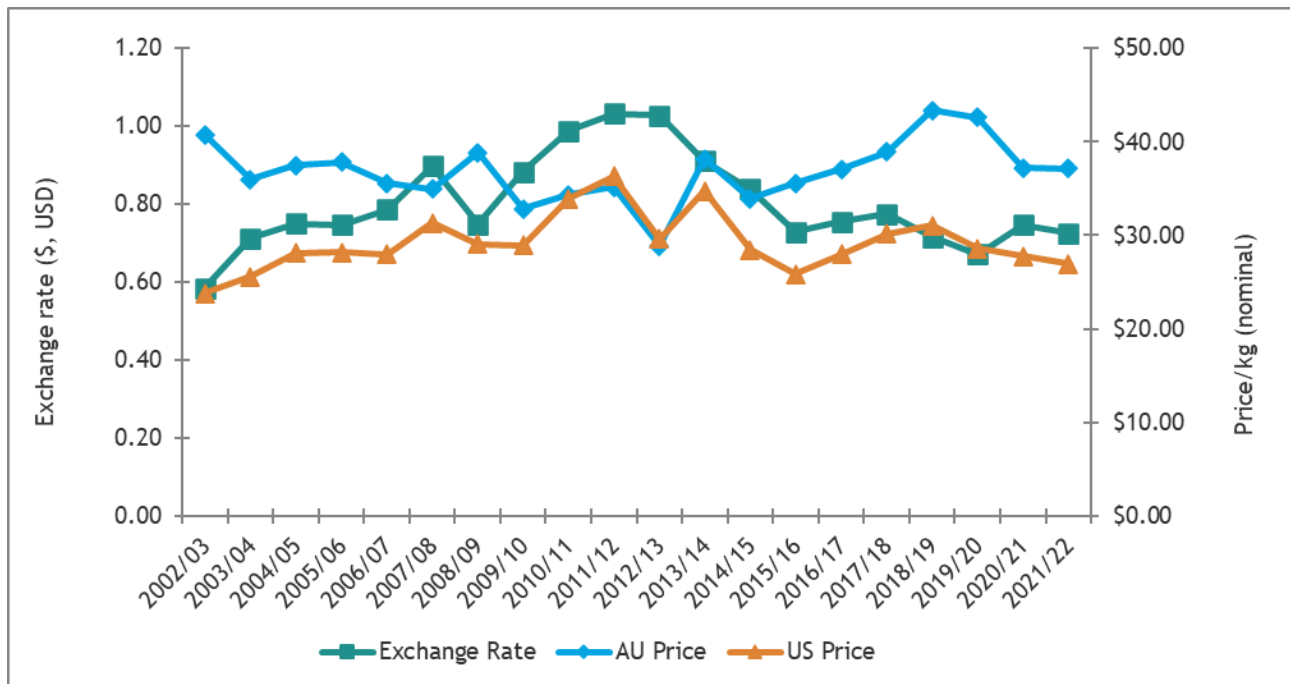
Source: Burnell et al. (2022 and 2021b), and Stobart et al. (2022).

#### 4.1.4. Exchange rates

A proportion of the SA Abalone catch is exported overseas each year (Section 4.2). The value of the Australian dollar can have a significant impact on the economic performance of the fishery since the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar, therefore, have the potential to influence the demand for Australian Abalone exports. The Australian dollar (AUD) has been weaker through to 2021/22 after being valued above or very close to parity with the US dollar (USD) in 2012/13. The weaker dollar is generally a boost to exports as it effectively reduces the overseas price for all Australian exports, increasing demand from foreign buyers.

The most significant export destination for South Australian Abalone in 2021/22 in terms of value was Hong Kong (Figure 4-7). As the Hong Kong Dollar (HKD) is pegged to the USD, the relationship between the USD and AUD can be expected to affect the price of Abalone. The average exchange rate in 2021/22 was US \$0.73, a slight depreciation from the previous year (US \$0.75) (Figure 4-1). Other things held equal, a rise in the value of the currency would have the effect of decreasing the price of Abalone received by Australian exporters.

Figure 4-1 Exchange rate (USD) and average price for SA Abalone, 2002/03 to 2021/22



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

The relationship between the price of Abalone in Australian dollars and US dollars and the exchange rate between 2002/03 and 2021/22 is displayed in Figure 4-1. 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 Australian price for SA Abalone for the period 2002/03 to 2021/22 is -0.72<sup>6</sup>. This indicates that there was an inverse or moderate relationship between the two variables over this period. Thus, when the Australian dollar depreciates, the average Australian price received by SA Abalone fishers tends to increase, as it did between 2013/14 and 2015/16. The coefficient of correlation between the exchange rate (USD) and the US price for SA Abalone is 0.78 over the same period. As this is such a strong correlation, the US price follows the exchange rate trend closely. While these relationships are not expected to hold in each individual year, they do hold over the longer periods as evidenced by the relative trends in Figure 4-1<sup>7</sup>.

<sup>6</sup> Because the HKD is pegged to the USD, the coefficient of correlation between the (HKD) exchange rate and the price for SA Abalone for the period 2002/03 to 2021/22 is almost identical (-0.71).

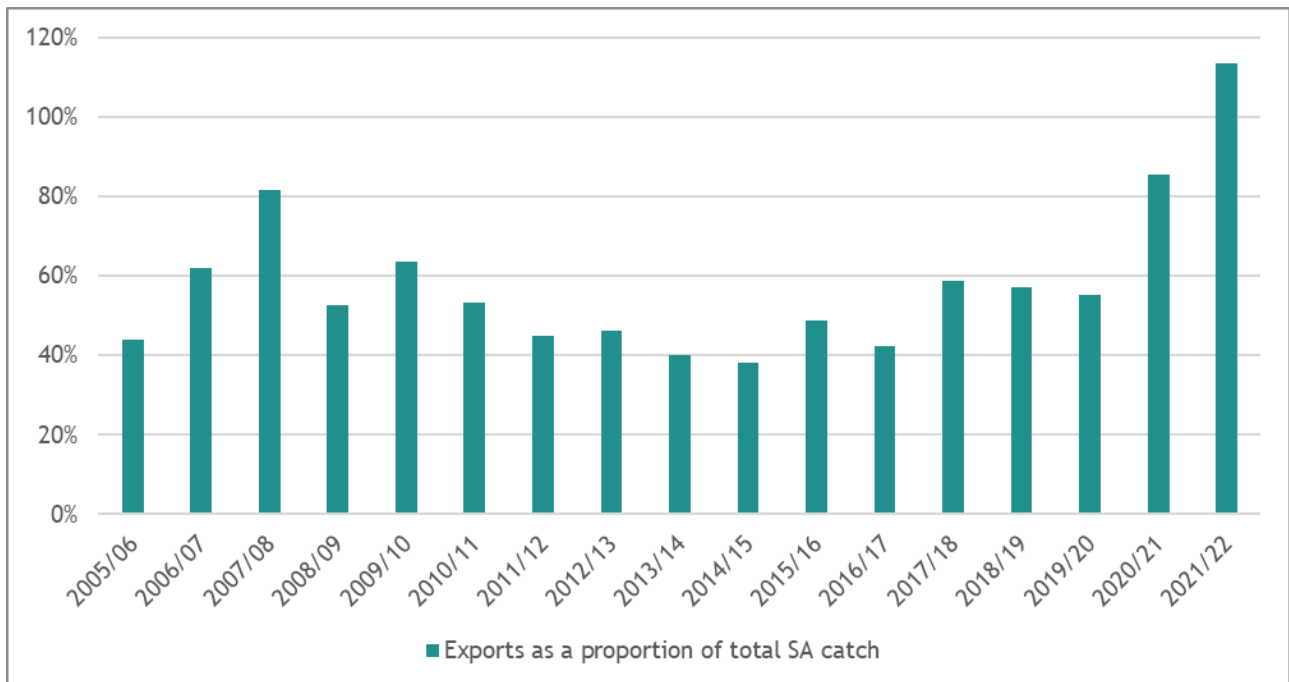
<sup>7</sup> There are other market factors at play in determining market price such as supply from other markets, market access, and consumer tastes and preferences. Analysis of these factors is outside the scope of this economic indicators report.

## 4.2. Abalone Exports from SA

The total quantity of Abalone products exported in 2021/22 represented approximately 114 per cent of total SA Abalone catch, compared to 85 per cent in the previous year (Figure 4-2). While the majority of Abalone harvested in SA does get exported not all of it leaves directly from SA. In some instances, it is further processed in other states and then exported, and in other instances, it is flown to another state before it is transferred to an international flight. Export data only includes product that is exported directly from South Australia. Therefore, product that is shipped interstate prior to export is not included. The export data may also include Abalone grown in aquaculture in addition to wild caught Abalone. An estimated 402 tonnes of Abalone was produced by aquaculture in South Australia in 2021/22 (BDO EconSearch 2022c).

The total value of Abalone products exported in 2020/21 represented approximately 224 per cent of total SA Abalone catch, that is 124 per cent more than the estimated GVP for the fishery as a whole (Figure 4-3 and Table 3-2). The estimate of GVP reported in Table 3-2 reflects the beach price of landed Abalone. The value of exports reflects the free on board (fob) price of processed and packaged Abalone. The value of Abalone exports, therefore, include processing, transport and trade margins. It may also include Abalone produced in aquaculture operations.

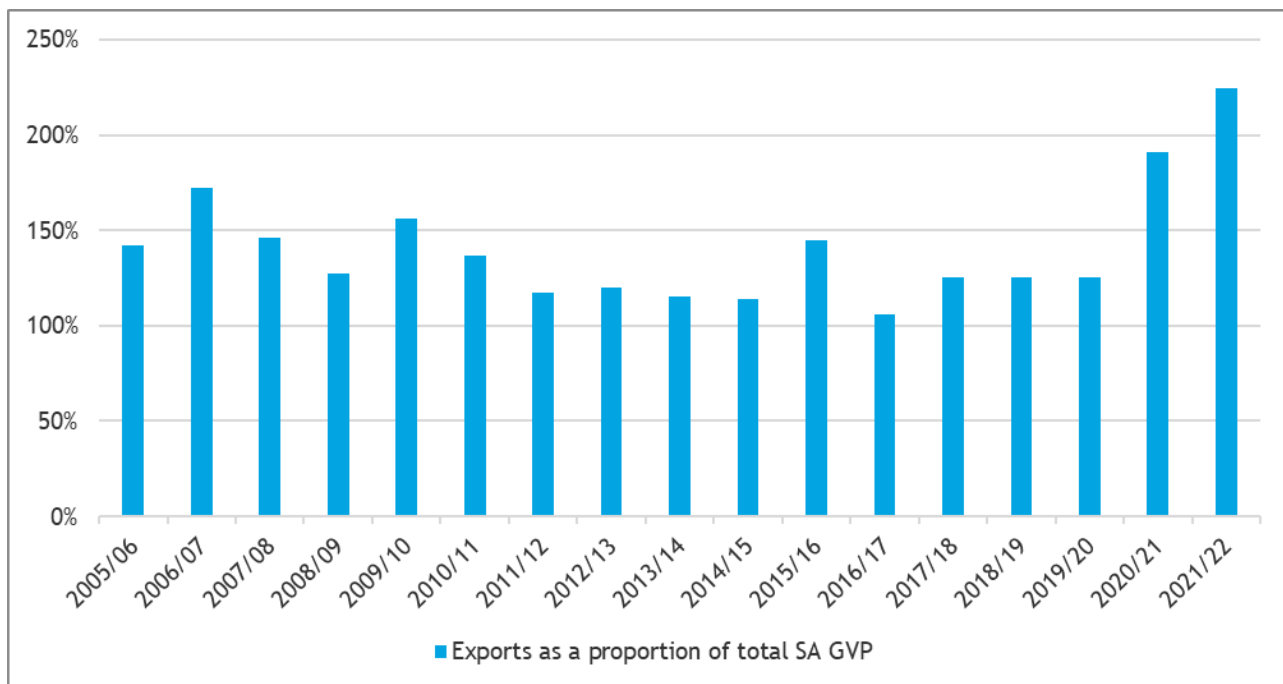
Figure 4-2 Abalone exports from South Australia as a proportion of total catch (quantity), 2005/06 to 2021/22 <sup>a</sup>



<sup>a</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Appendix Table 2-1, Table 3-2

Figure 4-3 Abalone exports from South Australia as a proportion of GDP, 2005/06 to 2021/22<sup>a,b</sup>



<sup>a</sup> Value of Abalone exports is measured in fee on board of processed and packaged Abalone so includes processing, transport and trade margins. It may also include the value of Abalone grown in aquaculture operations. This allows for the proportion of exports to GDP to be greater than 100 per cent.

<sup>b</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

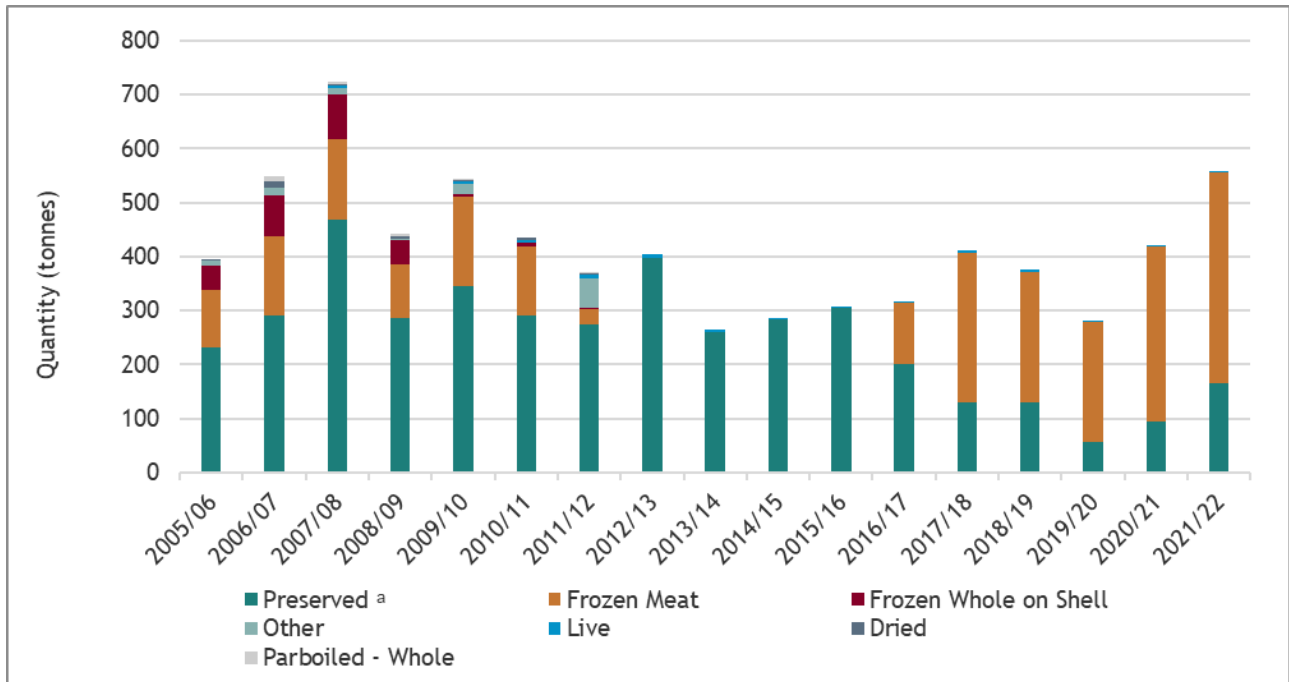
Source: Appendix Table 2-2 and Table 3-2

Figure 4-4 and Figure 4-5 provide a breakdown of total Abalone exports from SA by product type. In 2021/22 the most significant products exported were frozen and preserved Abalone, which accounted for over 99 per cent of the total quantity and total value of exports in 2020/21.

Figure 4-6 and Figure 4-7 provide a breakdown of total Abalone exports from SA by country of destination for 2005/06 to 2021/22. The most significant export destination for the period of analysis was Hong Kong. In 2021/22, exports to Hong Kong accounted for 16 per cent of the total quantity and 39 per cent of the total value of exports. The last two years has seen a significant rise in exports to the USA and Japan. In 2015/16 no Abalone was exported to Japan and USA received 1 per cent of the total quantity of exports, accounting for 1 per cent of the total value. By 2020/21, USA accounted for 47 per cent of the total quantity and 30 per cent of the total value of exports, which declined to 40 per cent and 29 per cent respectively in 2021/22. In 2021/22 Japan accounted for 15 per cent of the total quantity and 9 per cent of the total value of exports.



Figure 4-4 Abalone exports from South Australia, quantity (t) by category, 2005/06 to 2021/22<sup>b</sup>

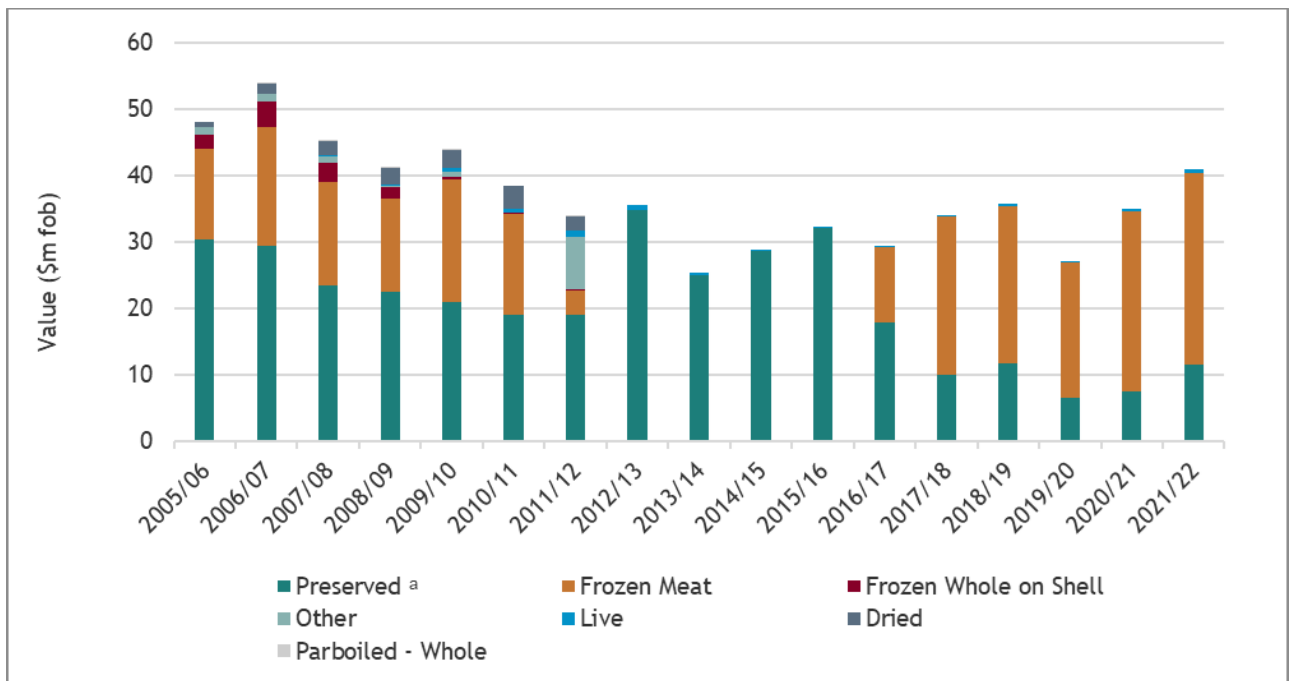


<sup>a</sup> Note that the ABS occasionally alters the classifications of export commodities. In the period above the ABS released several separate export commodity classification reports. Consequently, names and commodity classification numbers can alter between years. The classifications given in the above figure are uniform terms that summarize the classifications across the entire period.

<sup>b</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Appendix Table 2-1

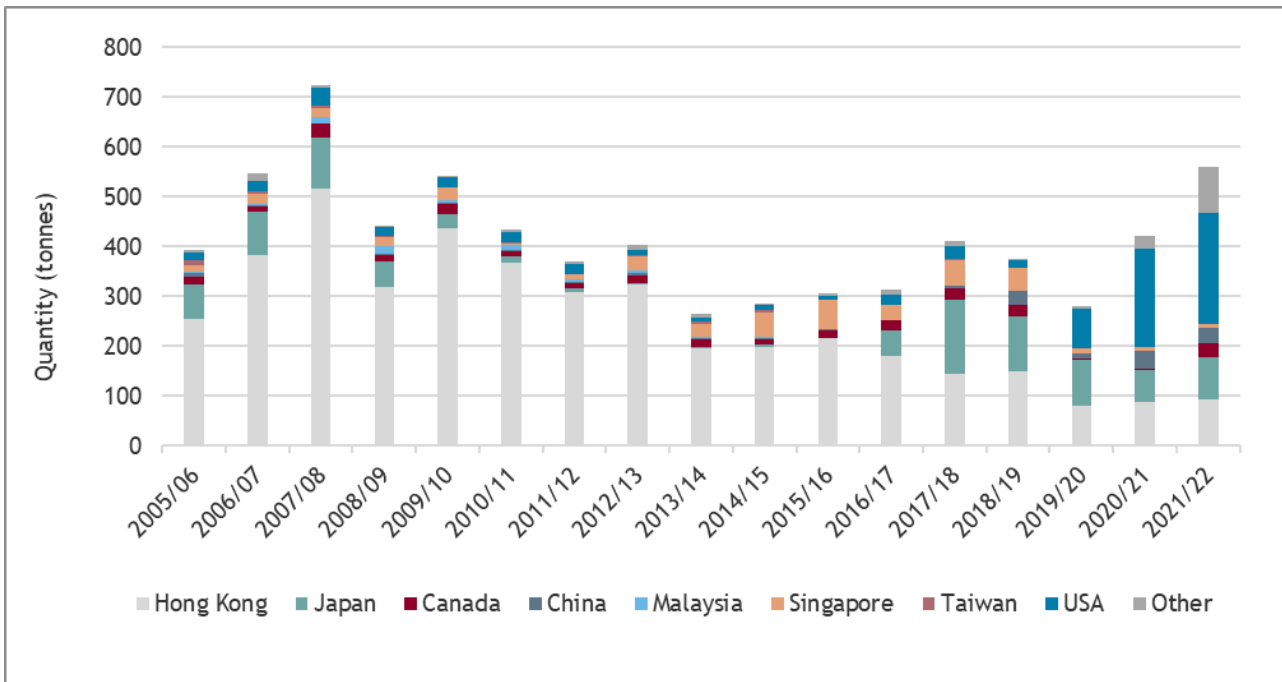
Figure 4-5 Abalone exports from South Australia, value (\$m fob) by category, 2005/06 to 2021/22<sup>b</sup>



<sup>a-b</sup> See Figure 4-4.

Source: Appendix Table 2-2

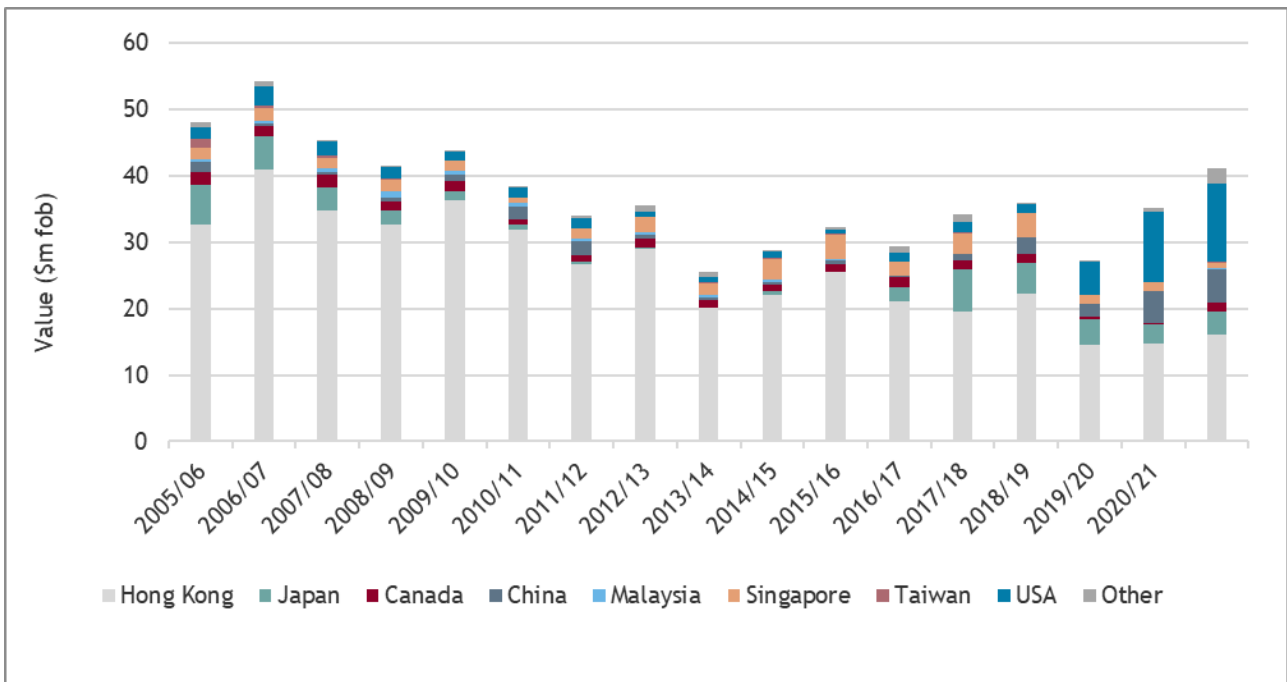
Figure 4-6 Abalone exports from South Australia, quantity (t) by country of destination, 2005/06 to 2021/22 <sup>a</sup>



<sup>a</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Appendix Table 2-1 Appendix Table 2-3

Figure 4-7 Abalone exports from South Australia, value (\$m fob) by country of destination, 2005/06 to 2021/22 <sup>a</sup>



<sup>a</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Appendix Table 2-2 and Appendix Table 2-4

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

The operation of the SA Abalone Fishery (and the employment the fishery generates and the households it maintains) either directly or indirectly contributes to keeping families in regional communities.

As a part of the 2021 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 (2022a).

### **4.4. Social Indicators**

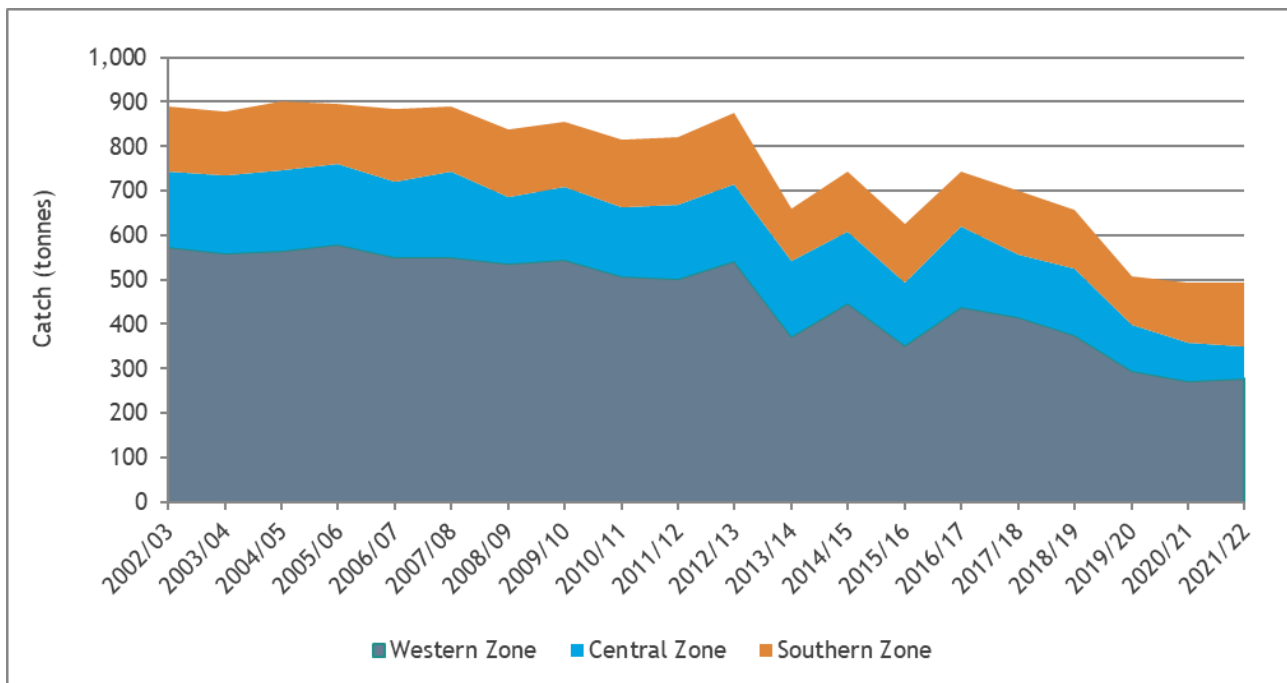
In 2016, 2018 and 2021, the economic indicators survey of commercial fisheries was extended to include the collection of social indicators. The results of the social indicators component of the survey are detailed in BDO EconSearch (2022a).

## 5. ECONOMIC TRENDS IN THE FISHERY

### 5.1. Catch and Gross Value of Production

The data shown in Figure 5-1 indicate that the total catch of Abalone from SA remained relatively steady between 2001/02 and 2012/13. This can be credited to the stable performance of all three Abalone Zones. The catch decreased below 700 tonnes in 2013/14, began to recover in 2014/15 before falling once again in 2015/16. Part of the fall in catch in 2015/16 was the result of licence holders in the Western Zone voluntarily withholding harvesting quota due to concerns about the harvest control rule and in part a result of a delay in catch towards the end on the 2016 calendar year in the Central Zone. Total catch recovered once again in 2016/17 only to fall again continuously for the past five years and reach a low of 492t in 2021/22.

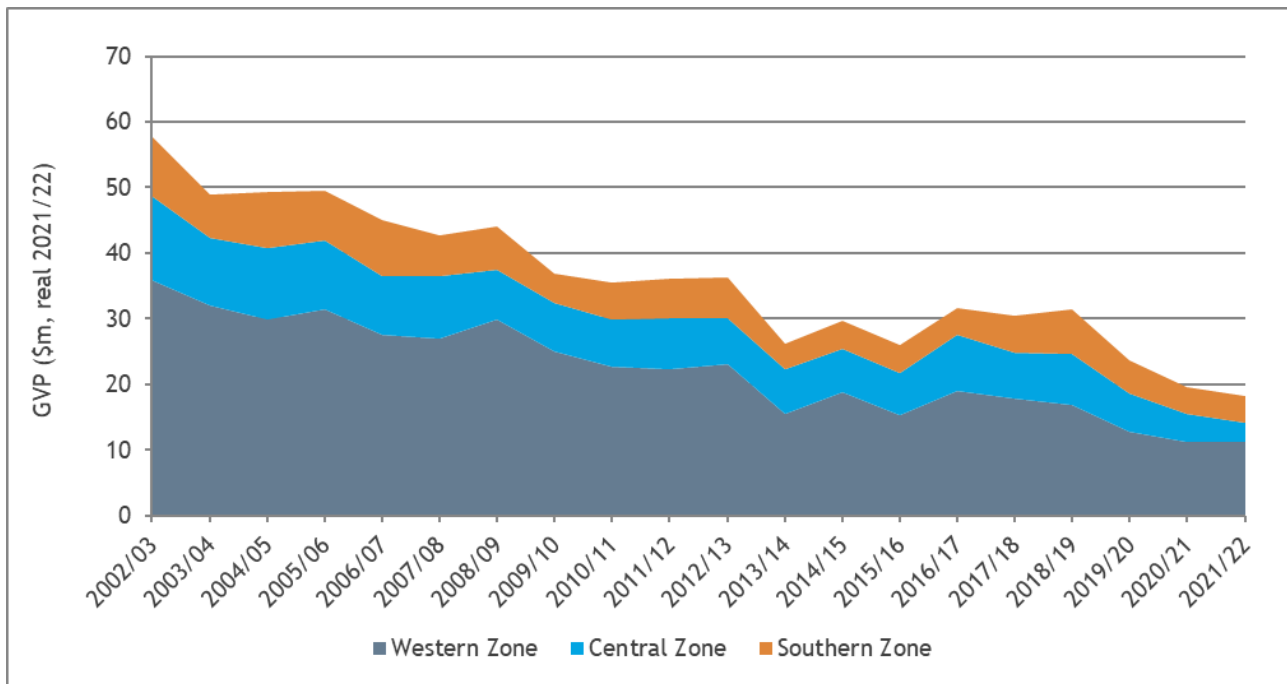
Figure 5-1 Total catch from the SA Abalone Fishery, 2002/03 to 2021/22



Source: SARDI Aquatic Sciences

The total GVP for the SA Abalone Fishery for the period 2002/03 to 2021/22 is illustrated in Figure 5-2. The value of the catch in each zone has followed a steady declining trend over the period, leading to an overall decrease in real value of catch of 68 per cent. This was due to a decrease in real price (43 per cent) and volume of catch (45 per cent) over the same period. The real price of South Australian Abalone (in 2021/22 dollars) declined from \$65.00/kg in 2002/03 to \$37.15/kg in 2021/22 (Figure 3-1).

Figure 5-2 SA Abalone Fishery gross value of production, 2002/03 to 2021/22



<sup>a</sup> Estimates of GDP are expressed in real 2021/22 terms.

Source: SARDI Aquatic Sciences

Most Abalone caught in South Australia is exported overseas. The value of the Australian dollar can have a significant impact on the economic performance of the fishery since the Australian dollar influences the price of Australian exports overseas. The relationship between the price of Abalone and the exchange rate over the past 20 years can be observed in Figure 4-1. There is a moderate inverse relationship between the price of Abalone and the USD and HKD (Section 4.1.4). Thus, when the Australian dollar depreciates, the average price received by SA Abalone fishers tends to increase. While this relationship is not expected to hold in each individual year, it does hold over the longer periods as evidenced by the relative trends in Figure 4-1. Between 2012/13 and 2015/16, the exchange rate depreciated significantly but price only increased marginally in these years. The relationship here suggests that price can be expected to rise if the exchange rate trend continues.

## 5.2. Management Costs

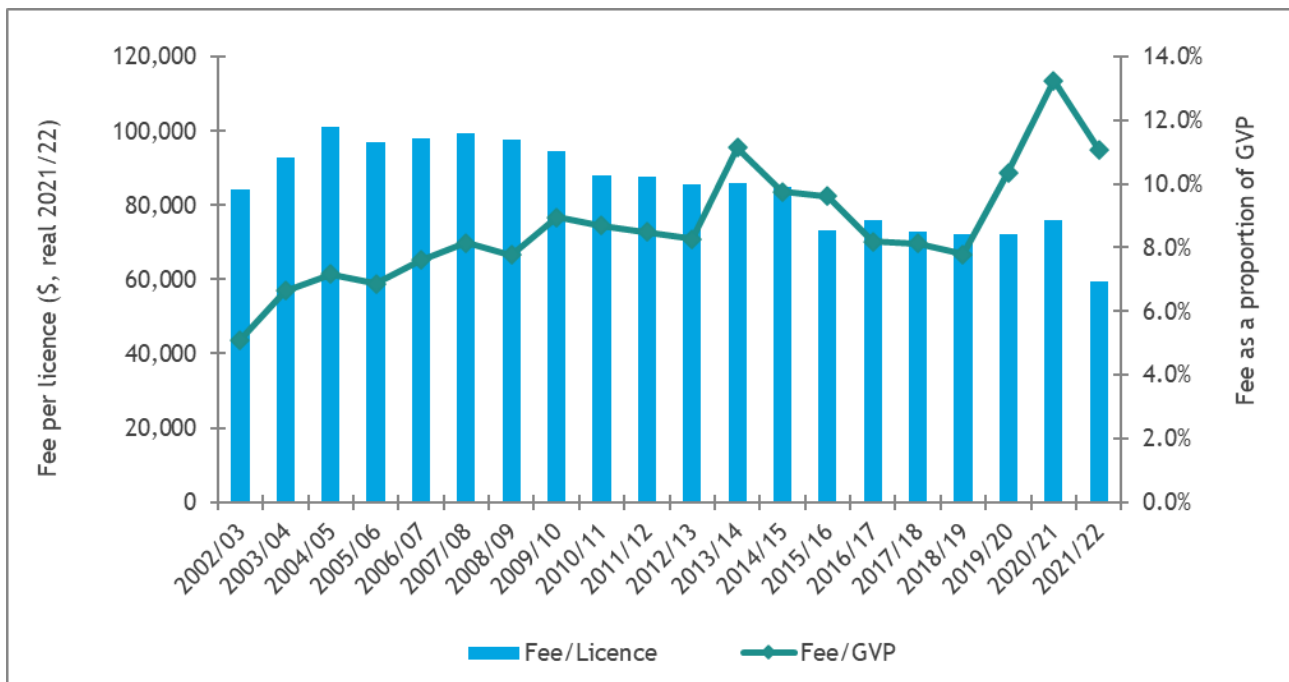
The average management fee per Abalone licence and the licence fee as a proportion of GDP are illustrated in Figure 5-3. Licence fees as a percentage of GDP followed an increasing trend between 2002/03 and 2021/22, from 5.1 per cent to 13.3 per cent at its peak in 2020/21 but fell to 11.1 per cent in 2021/22. Over the period from 2002/03 to 2013/14, and again from 2016/17 to 2021/22, GDP declined. This resulted in a significant increase in the proportion of licence fee to GDP. As GDP does not determine the cost of management, its decline did not have an effect on licence fees. While there have been minor fluctuations in aggregate management fees, there were no significant changes in its components (compliance, stock assessment and others) between 2002/03 and 2020/21. In 2021/22 the licence fee was reduced considerably, by almost 22 per cent, resulting in a lower proportion of licence fees to GDP than the previous year.

One of the objectives of management of the fishery is full cost recovery (Table 3-1). To achieve this objective, licence fees are set at a level sufficient to recover the costs of managing the fishery that are

attributable to the commercial sector. PIRSA Fisheries and Aquaculture and industry associations are involved in annual negotiations in relation to the proposed compliance and research programs and associated costs. Fees per licence followed an increasing trend between 2002/03 and 2004/05 before decreasing until 2015/16 and steadily decreasing since, before a sharp fall in 2021/22 (Figure 5-3).

In 2013/14 the total number of licences was reduced by one in the Western Zone as a result of the introduction of marine parks in the state. The Southern and Central Zones licence numbers remain unchanged.

Figure 5-3 Management fee per licence holder and as a proportion of gross value of production in the SA Abalone Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Estimates of the fee per licence holder are expressed in real 2021/22 terms.

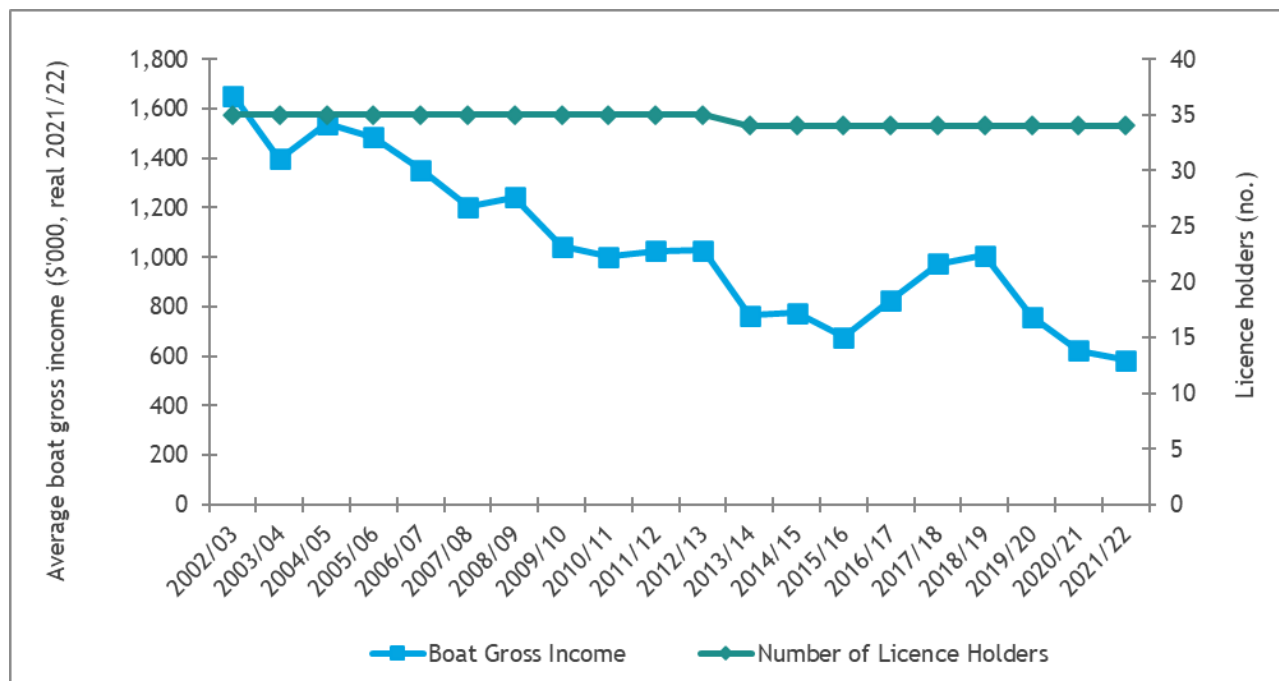
Source: Table 3-4

### 5.3. Financial Performance Indicators

#### Average Income

Average real income and total number of licences in the fishery for the period 2002/03 to 2021/22 is illustrated in Figure 5-4. In 2013/14, the total number of licences was reduced by one in the Western Zone through the Commercial Fisheries Voluntary Catch/Effort Reduction Program to mitigate any potential biological or economic effects from the redistribution of commercial fishing effort on establishment of marine parks in the state. The Southern and Central Zones licence numbers remained unchanged over the same period. Average real income per licence followed a steady decreasing trend, with small fluctuations, from 2002/03 to 2015/16. Over the following three years from 2016/17 to 2018/19, average boat gross income began to slowly recover before falling sharply again between 2019/20 and 2021/22. Over the 20 year period average boat gross income declined by 66 per cent, including an 42 per cent drop between 2018/19 and 2021/22. The decreasing trends follow the overall decrease in GVP in the fishery over the same periods (Figure 5-2).

Figure 5-4 Average real income per licence holder in the SA Abalone Fishery, 2002/03 to 2021/22 <sup>a</sup>



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

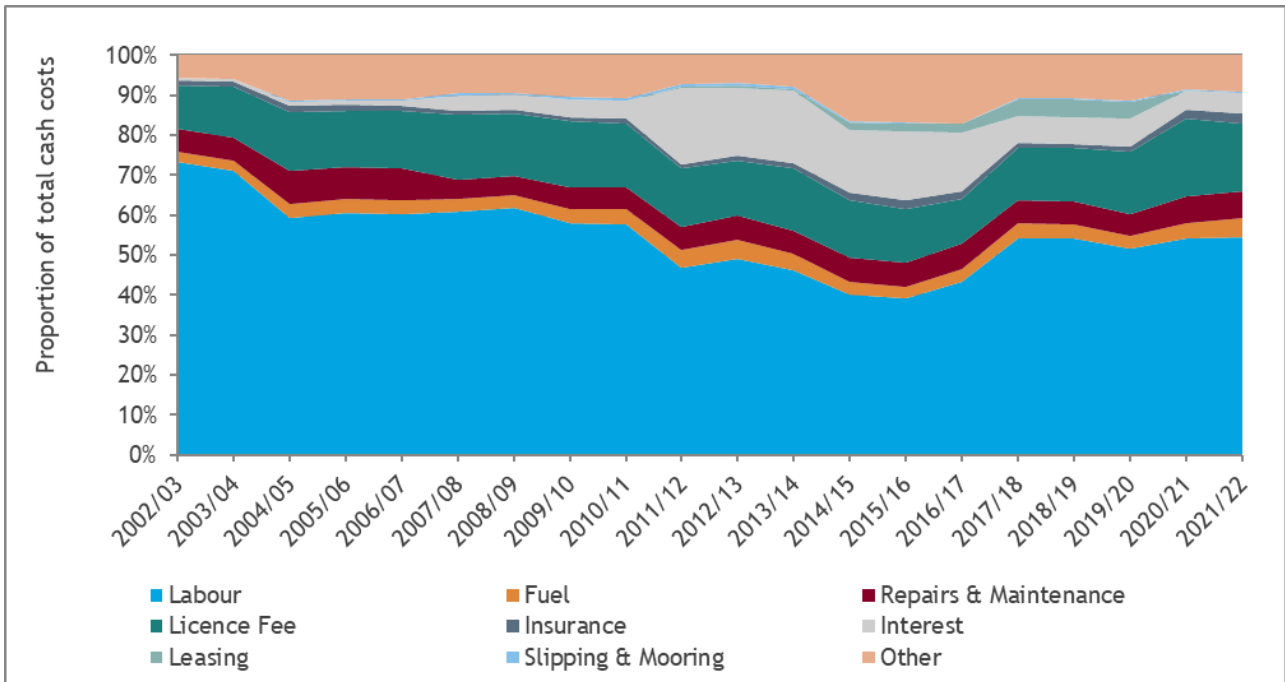
Source: Table 3-5 and Appendix 4

### Operating Cost Trends

A breakdown of major cost items as a proportion of total cash costs is illustrated in Figure 5-5. Labour costs accounted for the largest share of total cash costs since 2002/03, although the share has decreased over time from 73 per cent in 2002/03 to 55 per cent in 2021/22. 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. Despite the decreasing trend, labour costs share of expenditure has been higher over the past five years. The first influence is a result of GVP changes, as most labour is paid as a percentage of GVP this leads to an increase in labour costs. Another reason for the increase in labour costs could be due to a change in the survey sample. The 2016 survey has comparatively low estimates of labour costs when considering the figures provided in the 2013, 2018 and 2021 surveys. Other significant cash costs were licence fees, repairs and maintenance, and interest (Figure 5-5). Interest payments were around 1 per cent of operating costs between 2002/03 and 2006/07 then peaked around 19 per cent in 2011/12. By 2021/22 interest payments had fallen to just 5 per cent of total cash costs.

The cash costs detailed in Figure 5-5 can be categorised as either variable or fixed costs (see Table 3-5). Total variable costs and total fixed costs are illustrated in Figure 5-6 on an average per boat basis. Total variable costs fluctuated between years but generally followed a decreasing trend over the period 2002/03 to 2015/16 and then begins an increasing trend in to 2018/19, before declining into 2021/22. This decrease in variable costs is also likely attributable to the reduced number of days fished between 2019/20 and 2021/22, which resulted in less money spent on the resources required for a day of fishing. Total fixed costs have fluctuated much less from year to until and have followed a slight increasing trend from 2002/03 to 2011/12 where it began a slow decrease into 2021/22 (Figure 5-6).

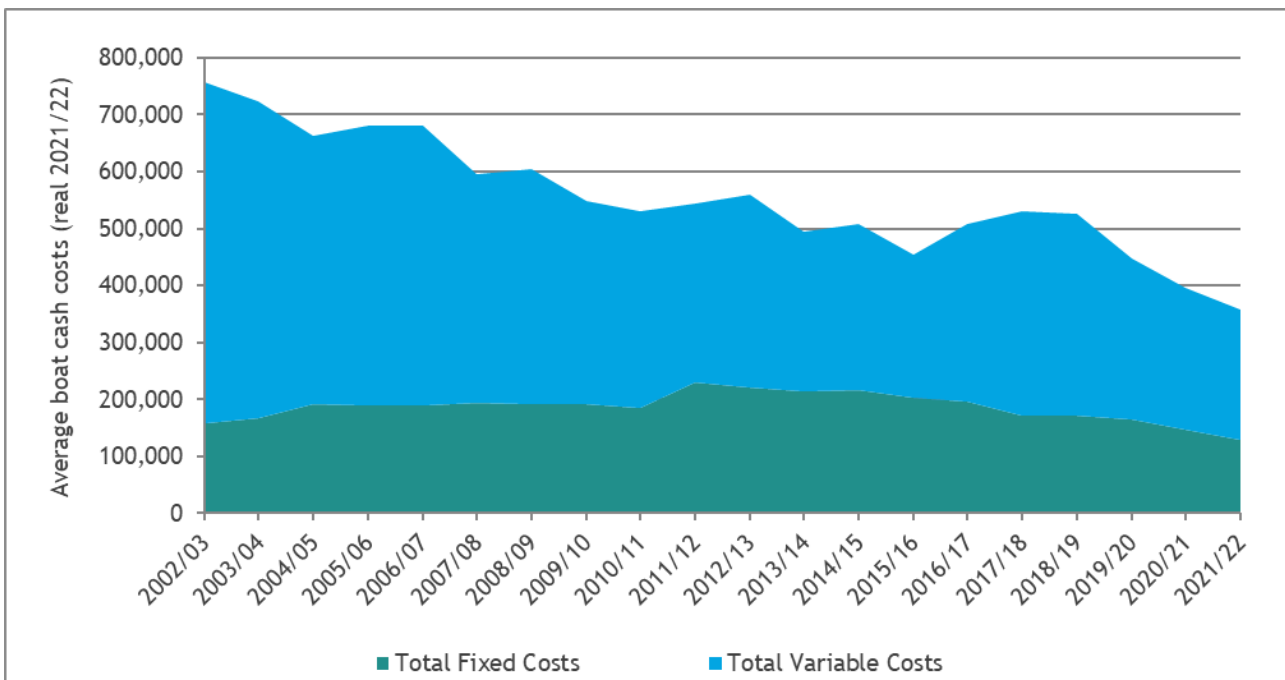
Figure 5-5 Cost shares in the SA Abalone Fishery, 2002/03 to 2021/22 <sup>a</sup>



<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 4

Figure 5-6 Average total costs in the SA Abalone Fishery 2002/03 to 2021/22<sup>a</sup>



<sup>a</sup> Estimates of average costs are expressed in real 2021/22 terms.

Source: Table 3-5 and Appendix 4

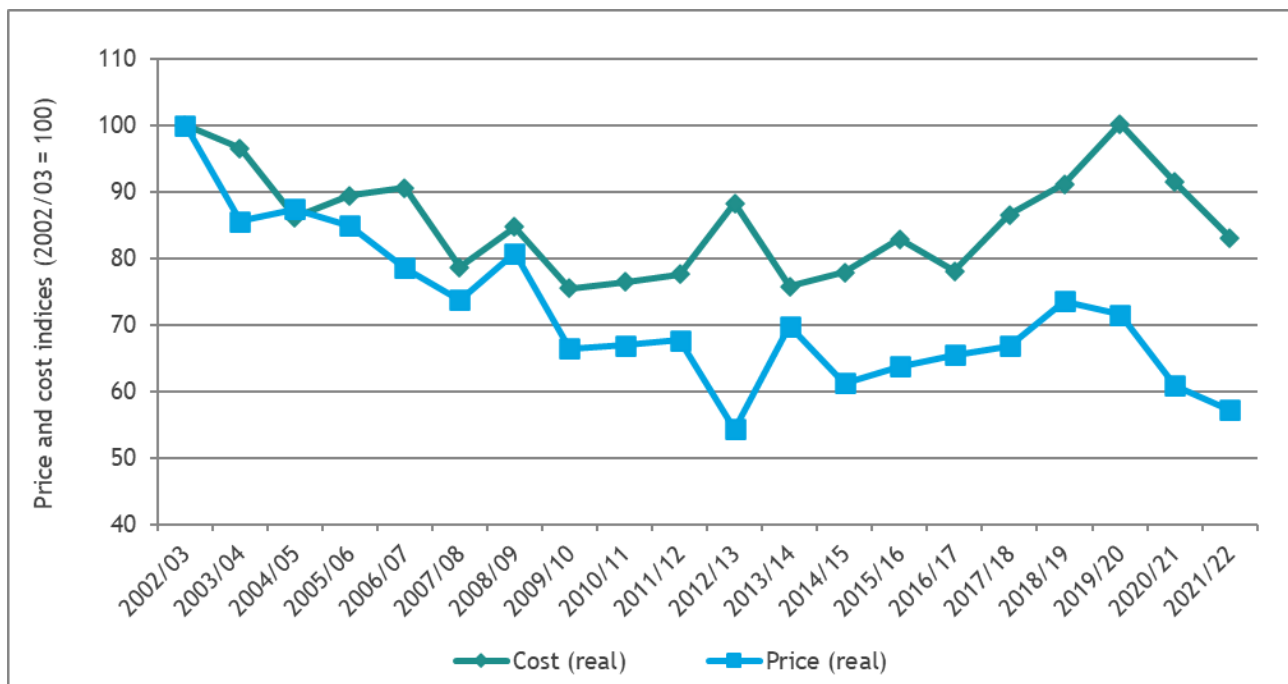


### Cost Price Squeeze

Real price and cost indices (in 2021/22 dollars) for the SA Abalone Fishery for the years 2002/03 to 2021/22 are summarised in Figure 5-7. These indicators are derived from the average price and average cost per kilogram of catch. After peaking in 2002/03 at \$65.00/kg in real terms, the average price followed a downward trend with some fluctuations to 2012/13 where it began a gradual increase to 2018/19. However, average price fell marginally in 2019/20 before falling significantly in 2020/21 and 2021/22. Overall, between 2002/03 and 2021/22, average price decreased by 43 per cent in real terms to \$37.15 per kilogram (Figure 5-7).

The average costs of catching Abalone fluctuated between years but slowly fell from 2002/03 until 2009/10 after which time average costs began to generally increase to 2019/20. Between 2019/20 and 2021/22 the average costs have fallen by 17 per cent from \$29.87, the highest over the 20 year period, to \$24.76 (Figure 5-7).

Figure 5-7 Price and cost indices for the SA Abalone Fishery, 2002/03 to 2021/22<sup>a</sup>



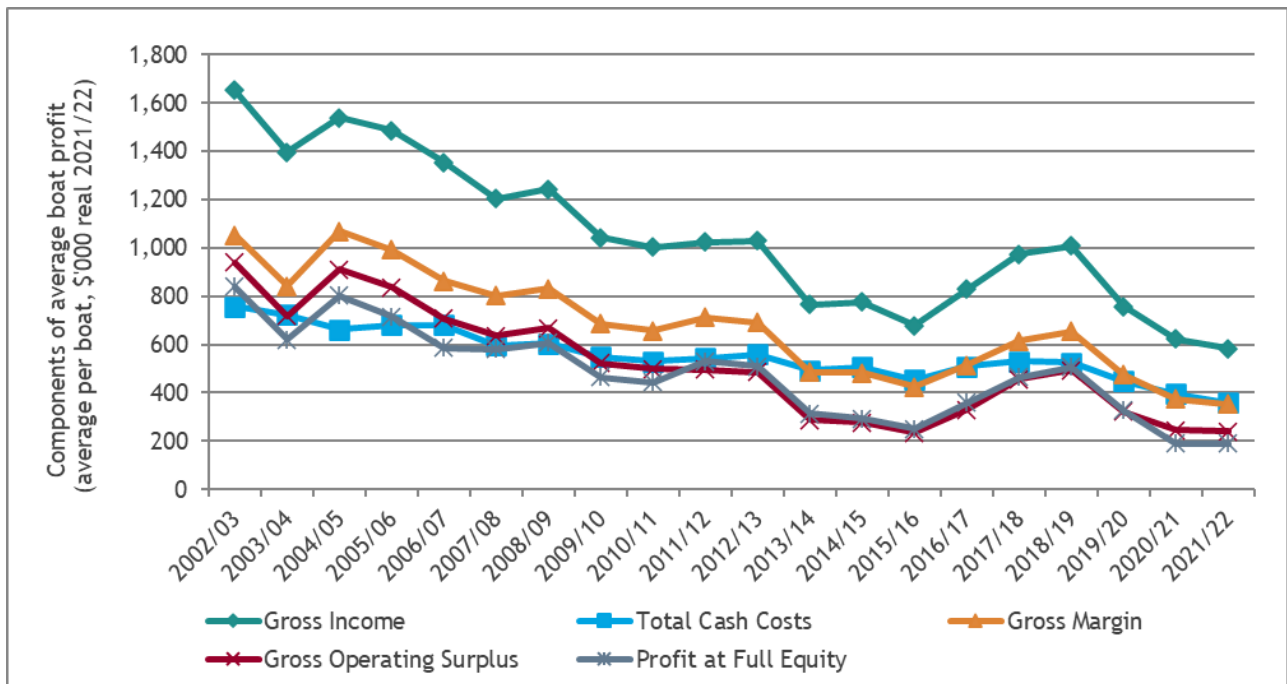
<sup>a</sup> Estimates of price and cost are expressed in real 2021/22 terms indexed against 2002/03.

Source: Figure 3-1, Table 3-5 and Appendix 4

### Profitability

Selected measures of profitability for the SA Abalone Fishery are summarised in Figure 5-8 for the years 2002/03 to 2021/22. Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability measures generally followed a downward trend between 2002/03 and 2015/16 due largely to a decrease in average income driven by a decline in average product price over the period and a decline in catch. Between 2016/17 and 2018/19 profitability measures began to recover and saw numbers close to those last seen in 2012/13 (Figure 5-8). These measures dropped once again from 2019/20 to 2021/22 to continue the downward trend, which was mostly attributable to the fall in catch and price over this period.

Figure 5-8 Average income and profit per boat in the SA Abalone Fishery, 2002/03 to 2021/22 <sup>a</sup>



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

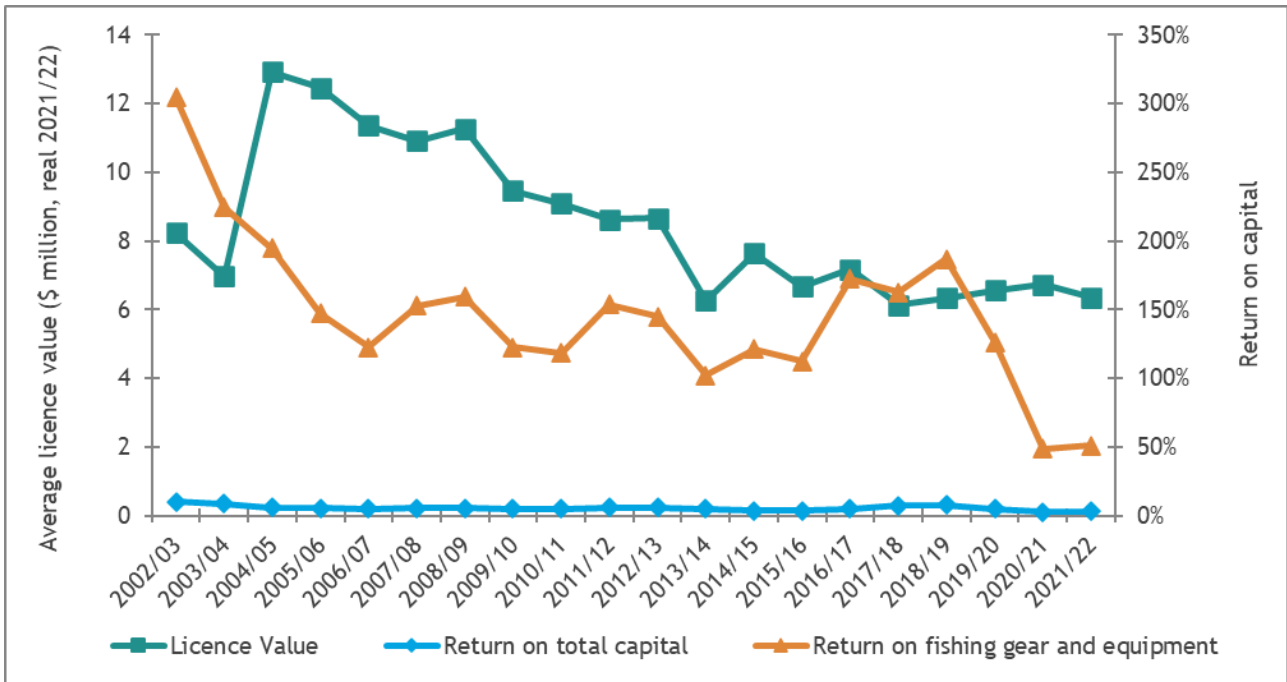
Source: Table 3-5 and Appendix 4

### Return to Capital

Estimates of the average licence value and the rate of return to total capital are illustrated in Figure 5-9. 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 total 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 was fairly consistent with a gradual downward trend, with minor fluctuations, over the 20-year period (Figure 5-8 and Figure 5-9). The return to total capital reported here is equivalent to rental yield on licences and is not a measure of the profitability of the aggregate industry (i.e. the rate of return to fishing gear and equipment). Return on fishing gear and equipment declined rapidly between 2002/03 and 2004/05 then decreased more slowly, with some fluctuations, through to 2015/16. This measure increased in 2016/17 through to 2018/19 but then experienced a sharp decrease in 2019/20 before declining to a 20 year low in 2020/21, followed by a slight recovery in 2021/22. The profitability of the fishery is still evident in the estimated return on fishing gear and equipment in 2021/22 of 51 per cent, despite the fact that it fell significantly from 126 per cent in 2019/20 (Table 3-5). The decline between 2019/20 and 2021/22 is attributable to the increase in fishing gear and equipment capital (58 per cent) and decrease in profit at full equity (37 per cent). The increase in the investment of capital observed in the 2021 survey is likely due in part to the historically consistent high profitability of the Abalone Fishery allowing licence holders to reinvest their profits. It is also likely that some of this increase is due to sample variability.

Figure 5-9 Return on capital in the SA Abalone Fishery, 2002/03 to 2021/22



<sup>a</sup> Estimates of average costs are expressed in real 2021/22 terms.

Source: Table 3-5 and Appendix 4

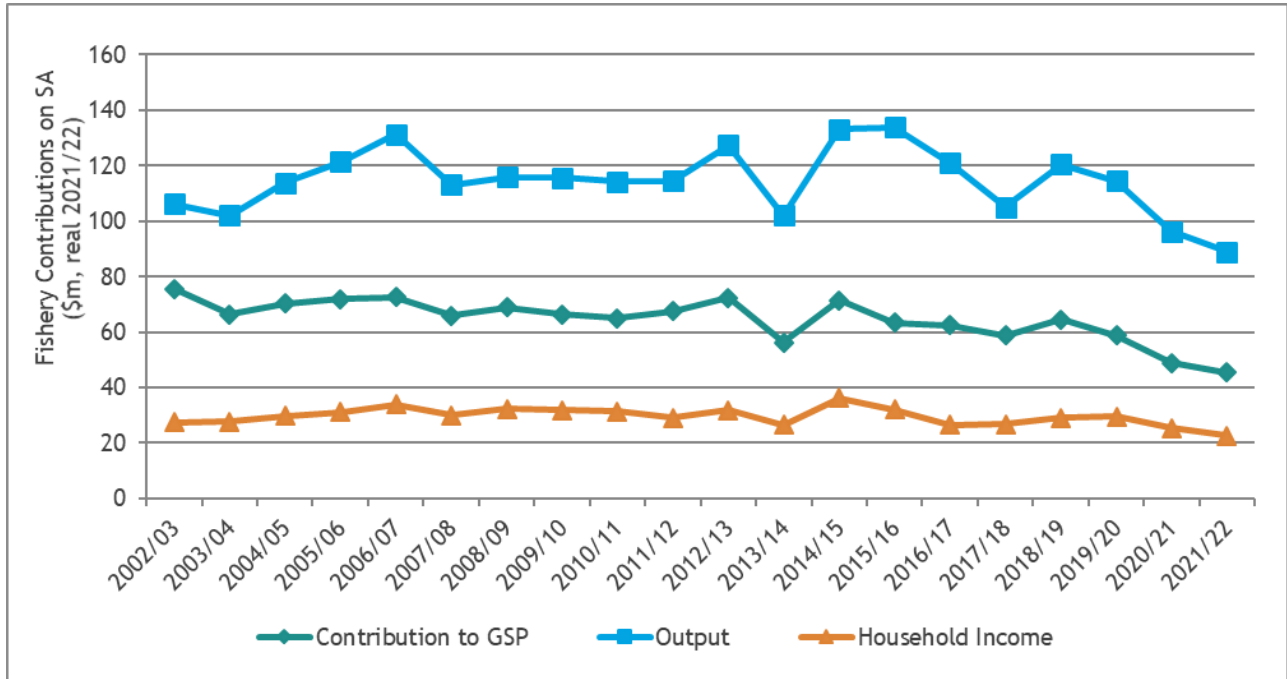
### 5.4. Contribution to SA Economy

Figure 5-10 and Figure 5-11 illustrate the total economic contribution<sup>8</sup> of the fishery on the SA economy for the 20 years, 2002/03 to 2021/22. Total economic contribution refers to the direct fishing industry contributions (fishing, processing, etc.) and the indirect contributions on other sectors of the economy.

The change in total output and GSP contributions are closely related to changes in price and fishery GDP, explaining the noticeable decline since 2018/19 (Figure 5-10). Employment (direct and indirect) increased overall between 2002/03 to 2018/19, however this has fallen since, due to decreased fishing days and shut downs throughout COVID-19 pandemic (Figure 5-11). Between 2002/03 and 2021/22, there were fluctuations in GSP contributions, output, household income and employment but no clear trend. Contribution to GSP had the largest decrease of these indicators of around 40 per cent over the 20-year period, however most of this decrease is over the last four years. Overall, this is likely due to the decrease in total value of catch.

<sup>8</sup> Estimates of economic contribution for 2002/03 do not include the contribution of local retail and food service trade; these effects have been included in subsequent years.

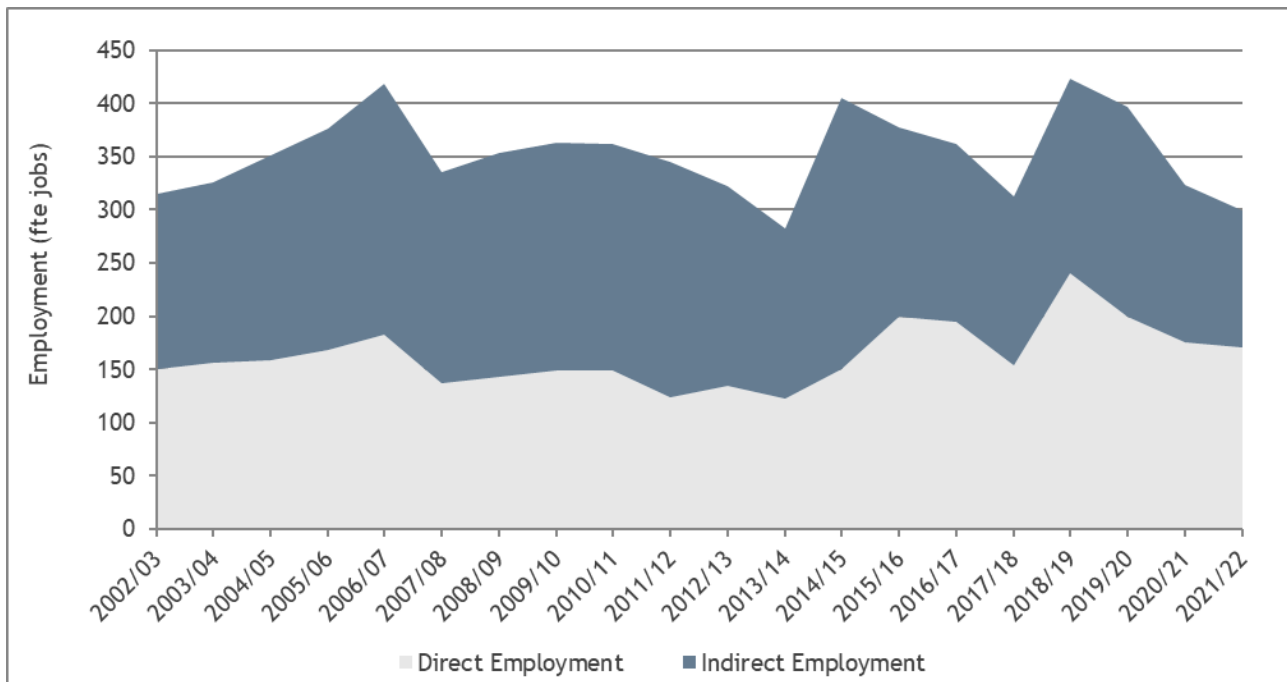
Figure 5-10 Total gross state product, output and household income contribution of the SA Abalone Fishery on the SA economy, 2002/03 to 2021/22 <sup>a</sup>



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

Source: Table 3-8 and BDO EconSearch (2022a)

Figure 5-11 Total direct and indirect employment contribution of the SA Abalone Fishery on the SA economy, 2002/03 to 2021/22

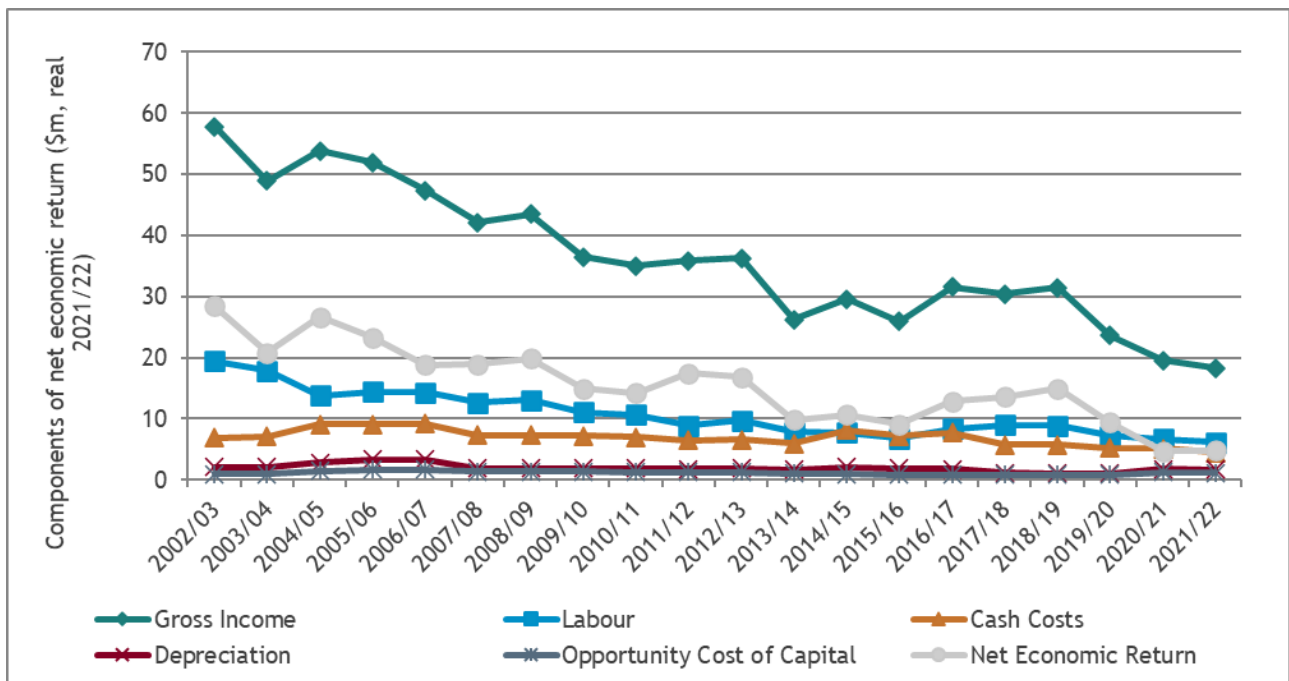


Source: Table 3-8 and BDO EconSearch (2022a)

### 5.5. Net Economic Return

Net economic return (NER) 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). NER is maximised when economic efficiency is maximised. Estimates of the NER generated in the Abalone fishery are summarised in Figure 5-12 for the period 2002/03 to 2021/22. The NER generated in the SA Abalone Fishery followed a downward trend, with some fluctuations, between 2002/03 and 2021/22. Real NER decreased by 83 per cent over the period, falling to a 20 year minimum of \$4.7 million in 2020/21, which was slightly recovered to \$4.8 million in 2021/22.

Figure 5-12 Net economic return in the SA Abalone Fishery, 2002/03 to 2021/22 <sup>a</sup>



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

Source: Table 3-14

NER 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 5-13 and shows an overall downward trend, with some fluctuations, between 2002/03 to 2019/20, followed by a sharp downturn in 2020/21, followed by a slight recovery in 2021/22. In 2021/22, rent as a percentage of GVP was 26 per cent, the second lowest value for the 20 year period.

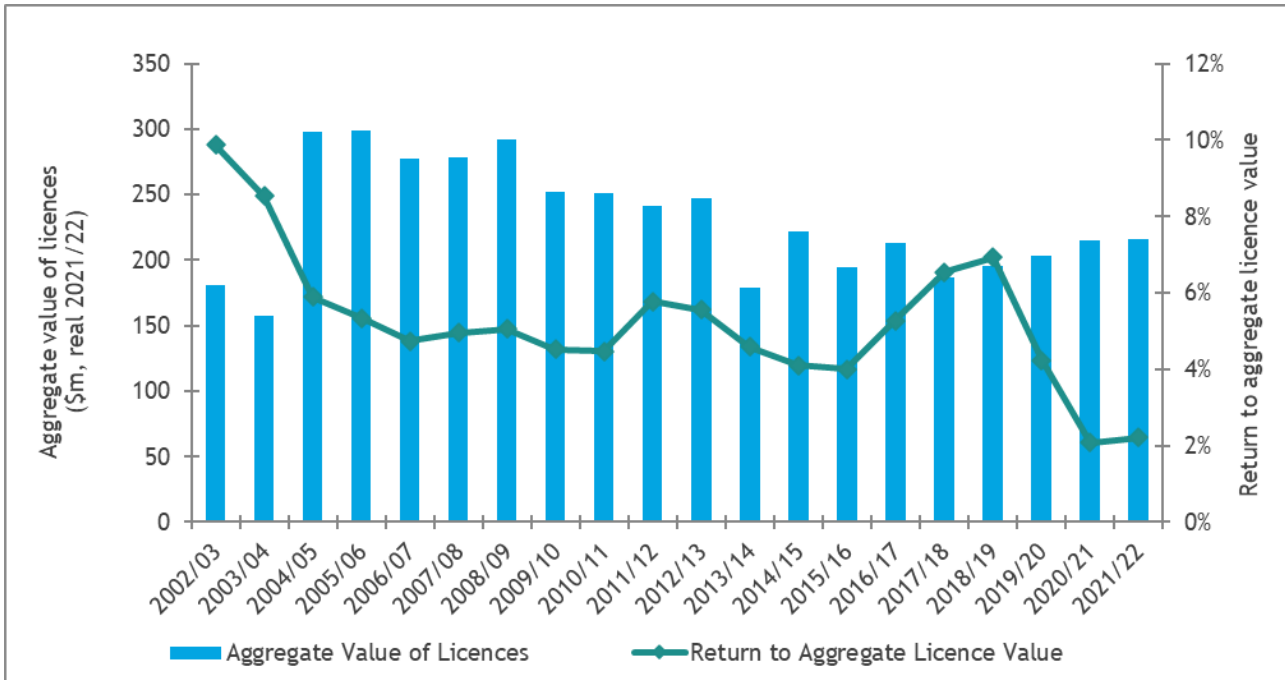
Net economic return represents a return to the value of licences in the fishery. The aggregate value of licences in the Abalone fishery and the return to the aggregate value of licences in the fishery are illustrated in Figure 5-14. The return to the aggregate value of licences in the fishery followed a downward trend between 2002/03 and 2019/20, followed by a sharp downturn in 2020/21 followed by a slight recovery in 2021/22. The aggregate value of licences increased sharply in 2004/05 then followed a slow downward trend until 2017/18 before increasing slightly for the last four years (Figure 5-14).

Figure 5-13 Net economic return and licence fee as proportions of GDP in the SA Abalone Fishery, 2002/03 to 2021/22



Source: Table 3-14

Figure 5-14 Aggregate value of licences and return to aggregate licence value in the SA Abalone Fishery, 2002/03 to 2021/22<sup>a</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.

Source: Table 3-5 and Appendix 4

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## 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 SA Abalone Fishery, 2020/21

Appendix Table 1-1 The economic contribution of the SA Abalone 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	18.3	20%	51	16%	6.8	29%	13.9	30%
Processing	13.1	14%	114	35%	5.9	25%	12.9	28%
Transport	1.2	1%	6	2%	0.4	2%	0.5	1%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.1	0%	1	0%	0.0	0%	0.1	0%
Capital expenditure <sup>b</sup>	0.8	1%	4	1%	0.3	1%	0.4	1%
<b>Total Direct <sup>c</sup></b>	<b>33.5</b>	<b>37%</b>	<b>176</b>	<b>54%</b>	<b>13.4</b>	<b>56%</b>	<b>27.7</b>	<b>60%</b>
<b>Flow-on effects</b>								
Trade	3.7	4%	25	8%	1.5	6%	2.2	5%
Business Services	4.2	5%	50	16%	2.6	11%	2.9	6%
Manufacturing	3.1	3%	9	3%	0.6	3%	0.9	2%
Transport	1.9	2%	8	2%	0.5	2%	0.8	2%
Other Sectors	44.0	49%	56	17%	5.1	21%	11.4	25%
<b>Total Flow-on <sup>c</sup></b>	<b>56.9</b>	<b>63%</b>	<b>148</b>	<b>46%</b>	<b>10.4</b>	<b>44%</b>	<b>18.1</b>	<b>40%</b>
<b>Total <sup>c</sup></b>	<b>90.5</b>	<b>100%</b>	<b>323</b>	<b>100%</b>	<b>23.8</b>	<b>100%</b>	<b>45.9</b>	<b>100%</b>
Total/Direct	2.7	-	2	-	1.8	-	1.7	-
Total/Tonne	\$183,500	-	0.7	-	\$48,200	-	\$93,000	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 23 full-time and 79 part-time jobs, that is, 102 jobs in aggregate, which was estimated to be equal to 51 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

Appendix Table 1-2 The economic contribution of the SA WZ Abalone fishing industry in the Eyre & Western Region, 2020/21

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	10.5	35%	30	29%	5.2	54%	7.4	45%
Processing	4.2	14%	25	23%	1.3	13%	3.0	18%
Transport	0.1	0%	1	1%	0.1	1%	0.1	0%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.3	1%	2	2%	0.1	1%	0.2	1%
<b>Total Direct <sup>c</sup></b>	<b>15.2</b>	<b>51%</b>	<b>58</b>	<b>55%</b>	<b>6.7</b>	<b>68%</b>	<b>10.6</b>	<b>64%</b>
<b>Flow-on effects</b>								
Trade	1.5	5%	10	9%	0.6	6%	0.9	5%
Business Services	1.5	5%	9	9%	0.7	7%	0.8	5%
Manufacturing	0.5	2%	2	2%	0.1	1%	0.2	1%
Transport	1.2	4%	4	4%	0.3	3%	0.5	3%
Other Sectors	10.2	34%	23	22%	1.4	14%	3.6	22%
<b>Total Flow-on <sup>c</sup></b>	<b>14.8</b>	<b>49%</b>	<b>48</b>	<b>45%</b>	<b>3.1</b>	<b>32%</b>	<b>5.9</b>	<b>36%</b>
<b>Total <sup>c</sup></b>	<b>30.0</b>	<b>100%</b>	<b>105</b>	<b>100%</b>	<b>9.7</b>	<b>100%</b>	<b>16.6</b>	<b>100%</b>
Total/Direct	2.0	-	1.8	-	1.5	-	1.6	-
Total/Tonne	\$109,800	-	0.4	-	\$35,600	-	\$60,700	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 22 full-time jobs and 44 part-time jobs, that is, 66 jobs in aggregate, which was estimated to be equal to 30 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

Appendix Table 1-3 The economic contribution of the SA CZ Abalone fishing industry in the Yorke Peninsula Region, 2020/21

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	5.2	56%	9	32%	1.8	60%	4.3	67%
Processing	0.7	7%	2	8%	0.1	2%	0.2	3%
Transport	0.1	1%	0	1%	0.0	1%	0.0	0%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.1	1%	1	2%	0.0	1%	0.0	1%
<b>Total Direct <sup>c</sup></b>	<b>6.0</b>	<b>66%</b>	<b>12</b>	<b>43%</b>	<b>1.9</b>	<b>64%</b>	<b>4.6</b>	<b>71%</b>
<b>Flow-on effects</b>								
Trade	0.4	5%	4	12%	0.2	7%	0.3	4%
Business Services	0.4	5%	3	11%	0.2	7%	0.2	4%
Manufacturing	0.3	3%	1	3%	0.0	2%	0.1	1%
Transport	0.2	3%	1	3%	0.1	2%	0.1	2%
Other Sectors	1.8	20%	8	28%	0.5	18%	1.2	18%
<b>Total Flow-on <sup>c</sup></b>	<b>3.2</b>	<b>34%</b>	<b>16</b>	<b>57%</b>	<b>1.1</b>	<b>36%</b>	<b>1.8</b>	<b>29%</b>
<b>Total <sup>c</sup></b>	<b>9.2</b>	<b>100%</b>	<b>29</b>	<b>100%</b>	<b>3.0</b>	<b>100%</b>	<b>6.4</b>	<b>100%</b>
Total/Direct	1.5	-	2.3	-	1.6	-	1.4	-
Total/Tonne	\$109,800	-	0.3	-	\$35,900	-	\$76,300	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 2 full-time jobs and 16 part-time jobs, that is, 18 jobs in aggregate, which was estimated to be equal to 9 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

Appendix Table 1-4 The economic contribution of the SA SZ Abalone fishing industry in the Limestone Coast Region, 2020/21

Sector	Output		Employment <sup>a</sup>		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
<b>Direct effects</b>								
Fishing	3.9	49%	10	36%	1.0	47%	3.0	60%
Processing	0.8	10%	4	14%	0.2	9%	0.5	9%
Transport	0.1	1%	0	1%	0.0	1%	0.0	1%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure <sup>b</sup>	0.1	1%	0	1%	0.0	1%	0.0	1%
<b>Total Direct <sup>c</sup></b>	<b>4.8</b>	<b>60%</b>	<b>14</b>	<b>53%</b>	<b>1.2</b>	<b>59%</b>	<b>3.5</b>	<b>71%</b>
<b>Flow-on effects</b>								
Trade	0.4	5%	3	9%	0.2	8%	0.2	5%
Business Services	0.4	5%	2	9%	0.2	9%	0.2	4%
Manufacturing	0.2	2%	1	2%	0.0	2%	0.0	1%
Transport	0.2	3%	1	4%	0.1	3%	0.1	2%
Other Sectors	2.0	26%	6	23%	0.4	20%	0.9	18%
<b>Total Flow-on <sup>c</sup></b>	<b>3.2</b>	<b>40%</b>	<b>13</b>	<b>47%</b>	<b>0.9</b>	<b>41%</b>	<b>1.4</b>	<b>29%</b>
<b>Total <sup>c</sup></b>	<b>8.0</b>	<b>100%</b>	<b>27</b>	<b>100%</b>	<b>2.1</b>	<b>100%</b>	<b>4.9</b>	<b>100%</b>
Total/Direct	1.7	-	1.9	-	1.7	-	1.4	-
Total/Tonne	\$58,500	-	0.2	-	\$15,100	-	\$36,100	-

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 2 full-time jobs and 16 part-time jobs, that is, 18 jobs in aggregate, which was estimated to be equal to 10 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

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

Source: BDO EconSearch analysis

## APPENDIX 2 Abalone Exports from SA

Appendix Table 2-1 Abalone exports from South Australia, quantity (kg), by category, 2005/06 to 2021/22<sup>b</sup>

Product	Preserved <sup>a</sup>	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
2005/06	232,401	0	106,062	43,913	587	0	9,645	392,608
2006/07	290,225	0	146,582	77,288	10,485	9,190	14,294	548,064
2007/08	467,724	4,945	148,583	82,836	2,639	4,336	12,526	723,589
2008/09	286,314	1,747	98,806	44,299	3,205	4,450	2,423	441,244
2009/10	346,237	4,588	163,870	5,933	3,605	504	18,165	542,902
2010/11	291,118	4,090	127,140	6,343	4,360	0	1,469	434,520
2011/12	272,995	7,660	29,201	1,664	2,190	400	54,634	368,744
2012/13	397,074	6,142	0	0	0	0	0	403,216
2013/14	259,290	5,372	0	0	0	0	0	264,662
2014/15	283,216	999	0	0	0	0	0	284,215
2015/16	305,159	260	0	0	0	0	0	305,419
2016/17	201,152	408	112,567	0	0	0	0	314,127
2017/18	129,467	2,877	278,236	0	0	0	0	410,580
2018/19	128,848	3,677	242,274	0	0	0	0	374,799
2019/20	55,392	1,110	224,069	0	0	0	0	280,571
2020/21	94,795	3,395	323,085	0	0	0	0	421,275
2021/22	165,260	3,235	390,349	0	0	0	0	558,844

<sup>a</sup> Weight of preserved Abalone is based on the number of cartons exported and on the assumption that the average weight per carton is 6.5kg (David Pickles, Dover Fisheries Pty Ltd, pers. comm.).

<sup>b</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-2 Abalone exports from South Australia, value (\$'000 fob) by category, 2005/06 to 2021/22<sup>b</sup>

Product	Preserved <sup>a</sup>	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
2005/06	30,360	0	13,688	2,207	613	0	1,143	48,011
2006/07	29,347	0	18,064	3,786	1,513	352	1,079	54,141
2007/08	23,436	160	15,547	3,004	2,165	227	871	45,410
2008/09	22,424	103	14,046	1,737	2,638	173	256	41,377
2009/10	20,986	540	18,440	336	2,759	27	768	43,856
2010/11	19,048	431	15,145	224	3,427	0	94	38,369
2011/12	19,019	987	3,679	85	2,162	16	7,941	33,889
2012/13	34,767	776	0	0	0	0	0	35,543
2013/14	24,929	488	0	0	0	0	0	25,417
2014/15	28,687	115	0	0	0	0	0	28,802
2015/16	32,030	183	0	0	0	0	0	32,213
2016/17	17,944	25	11,295	0	0	0	0	29,264
2017/18	9,969	314	23,827	0	0	0	0	34,111
2018/19	11,758	462	23,596	0	0	0	0	35,815
2019/20	6,454	135	20,554	0	0	0	0	27,143
2020/21	7,463	517	27,075	0	0	0	0	35,054
2021/22	11,486	685	28,833	0	0	0	0	41,004

<sup>a</sup> Weight of preserved Abalone is based on the number or cartons exported and on the assumption that the average weight per carton is 6.5kg (David Pickles, Dover Fisheries Pty Ltd, pers. comm.).

<sup>b</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-3 Abalone exports from South Australia, quantity (kg) by country of destination, 2005/06 to 2021/22<sup>a</sup>

Destination	Canada	China	Hong Kong	Japan	Malaysia	Singapore	Taiwan	USA	Other	Total
2005/06	14,036	7,756	254,022	70,990	2,256	14,119	10,342	13,475	5,613	392,608
2006/07	11,246	1,835	382,190	86,948	4,095	20,337	4,319	21,821	15,275	548,064
2007/08	27,005	1,679	515,617	103,297	11,265	18,590	6,490	34,546	5,100	723,589
2008/09	13,864	1,859	317,571	51,466	15,597	18,796	2,610	17,742	1,739	441,244
2009/10	20,184	2,954	437,550	27,077	6,612	23,991	1,142	18,924	4,468	542,902
2010/11	9,718	3,115	368,152	11,693	10,609	3,843	1,785	21,289	4,316	434,520
2011/12	10,474	2,435	308,758	7,118	5,705	9,146	0	20,408	4,700	368,744
2012/13	14,514	4,115	323,243	3,999	4,949	30,667	1,734	9,856	10,139	403,216
2013/14	13,735	2,986	196,321	2,330	2,918	25,963	4,000	7,518	8,894	264,665
2014/15	10,961	875	197,650	0	2,417	48,595	5,771	10,144	7,803	284,216
2015/16	13,359	2,132	217,160	0	1,284	57,766	2,200	6,311	5,206	305,418
2016/17	20,653	648	179,961	51,639	60	29,340	0	21,886	9,940	314,127
2017/18	23,718	5,015	143,964	147,983	520	52,508	1,260	25,242	10,370	410,580
2018/19	22,835	28,065	149,835	110,132	10	47,416	0	14,545	1,960	374,798
2019/20	2,052	8,881	80,443	92,908	33	10,267	0	81,005	4,982	280,571
2020/21	2,399	35,866	87,881	64,065	43	8,306	0	197,722	24,993	421,275
2021/22	29,837	30,291	92,205	84,210	118	7,653	170	223,518	90,842	558,844

<sup>a</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Australian Bureau of Statistics (by request), Dover Fisheries (pers. comm.)

Appendix Table 2-4 Abalone exports from South Australia, value (\$'000) by country of destination, 2005/06 to 2021/22<sup>a</sup>

Destination	Canada	China	Hong Kong	Japan	Malaysia	Singapore	Taiwan	USA	Other	Total
2005/06	1,921	1,572	32,624	6,022	281	1,784	1,301	1,804	704	48,011
2006/07	1,457	397	40,880	5,022	433	1,882	481	2,782	806	54,141
2007/08	1,909	313	34,708	3,553	619	1,565	312	2,180	251	45,410
2008/09	1,397	584	32,614	2,137	965	1,714	204	1,593	168	41,377
2009/10	1,549	1,110	36,293	1,272	397	1,648	68	1,239	279	43,856
2010/11	783	1,961	31,893	742	604	663	119	1,395	209	38,369
2011/12	842	2,125	26,609	492	372	1,672	0	1,469	307	33,889
2012/13	1,187	658	28,969	271	436	2,216	125	744	938	35,543
2013/14	1,100	499	20,026	91	228	1,920	170	661	721	25,417
2014/15	958	495	22,125	0	245	3,187	261	957	575	28,802
2015/16	1,216	565	25,455	0	125	3,740	96	568	447	32,213
2016/17	1,470	202	21,060	2,194	10	2,025	0	1,375	929	29,264
2017/18	1,434	831	19,562	6,326	64	3,057	119	1,539	1,179	34,111
2018/19	1,329	2,489	22,214	4,690	14	3,601	1	1,308	168	35,815
2019/20	309	1,896	14,585	3,860	24	1,349	0	4,968	151	27,143
2020/21	275	4,797	14,758	2,823	19	1,277	0	10,639	467	35,054
2021/22	1,312	5,082	16,020	3,563	57	805	139	11,798	2,229	41,004

<sup>a</sup> Values reported for 2012/13 to 2019/20 have been revised using updated information received in 2020/21.

Source: Australian Bureau of Statistics (by request), Dover Fisheries (pers. comm.)



## APPENDIX 3 Summary Economic Indicators for SA Commercial Fisheries

Appendix Table 3-1 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 (39t of Octopus, 21t of Southern Calamari and 3t 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 3-2 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 (\$444,000 of Octopus, \$542,000 of Southern Calamari and \$46,000 of Bugs in 2019/20) 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 2018/19 dollars.

Source: BDO EconSearch (2022b)

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

	Licence Fees	GVP	Fees/ GVP	Catch <sup>a</sup>	Fees/ Catch	Licence Holders	Fees/ Licence
	(\$'000)	(\$'000)	(%)	(t)	(\$/kg)	(no.)	(\$/licence)
Abalone	2,431	18,337	13.3%	493	\$4.93	34	\$71,505
Charter Boats <sup>b</sup>	180	2,907	6.2%	12,077	\$14.87	82	\$2,191
GSV Prawns	410	2,093	19.6%	110	\$3.73	10	\$40,991
SG Prawns <sup>c</sup>	1,055	35,653	3.0%	1,837	\$0.57	39	\$27,049
Sth'n Zone Rock Lobster	3,444	71,299	4.8%	1,275	\$2.70	180	\$19,131
Nth'n Zone Rock Lobster	1,601	11,643	13.8%	251	\$6.38	63	\$25,414
Blue Crabs	320	8,410	3.8%	592	\$0.54	9	\$35,565
Lakes and Coorong	704	13,721	5.1%	1,926	\$0.37	36	\$19,562
Marine Scalefish <sup>d</sup>	1,973	19,103	10.3%	1,689	\$1.17	305	\$6,469
Miscellaneous	119	1,484	8.0%	18	\$6.60	15	\$7,916
Sardines	893	23,955	3.7%	38,024	\$0.02	14	\$63,769
<b>Total SA</b>	<b>13,129</b>	<b>208,604</b>	<b>6.3%</b>	<b>46,215</b>	<b>\$0.28</b>	<b>787</b>	<b>\$16,683</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 3-4 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
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 3-5 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 3-6 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 3-7 Net economic return (NER) 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 4 Financial Performance, 2002/03 to 2018/19

Appendix Table 4-1 Financial performance in the SA Abalone Fishery, 2002/03 to 2004/05 (average per boat) <sup>a</sup>

	2002/03		2003/04		2004/05	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$1,036,829		\$902,343		\$1,015,691	
Variable Costs						
Fuel	\$11,478	2%	\$11,436	2%	\$14,369	3%
Repairs & Maintenance <sup>c</sup>	\$27,151	6%	\$27,410	6%	\$35,867	8%
Ice	\$141	0%	\$142	0%	\$280	0%
Provisions	\$1,054	0%	\$1,064	0%	\$8,767	2%
Labour - paid	\$320,791	68%	\$303,678	65%	\$236,945	54%
(2) Labour - unpaid <sup>d</sup>	\$12,252	3%	\$12,252	3%	\$4,309	1%
Other	\$3,439	1%	\$3,542	1%	\$10,109	2%
(3) Total Variable Costs	\$376,305	79%	\$359,525	77%	\$310,645	71%
Fixed Costs						
Licence Fee	\$52,372	11%	\$59,454	13%	\$65,060	15%
Insurance	\$4,882	1%	\$5,030	1%	\$6,618	2%
(4) Interest	\$2,958	1%	\$3,035	1%	\$4,922	1%
(5) Labour - unpaid <sup>d</sup>	\$15,896	3%	\$15,896	3%	\$18,196	4%
(6) Leasing	\$0	0%	\$0	0%	\$0	0%
Legal & Accounting	\$6,363	1%	\$6,555	1%	\$14,226	3%
Telephone etc.	\$3,268	1%	\$3,367	1%	\$3,540	1%
Slipping & Mooring	\$467	0%	\$481	0%	\$718	0%
Travel	\$5,049	1%	\$5,201	1%	\$4,164	1%
Office & Admin	\$7,673	2%	\$7,904	2%	\$8,735	2%
(7) Total Fixed Costs	\$98,929	21%	\$106,922	23%	\$126,179	29%
(8) Total Boat Cash Costs (3+7)	\$475,234	100%	\$466,447	100%	\$436,825	100%
Boat Gross Margin (1-3)	\$660,524		\$542,818		\$705,046	
(9) Total Unpaid Labour (2+5)	\$28,148		\$28,148		\$22,505	
Gross Operating Surplus (1-8+9)	\$589,743		\$464,044		\$601,371	
(10) Boat Cash Income (1-8)	\$561,595		\$435,896		\$578,866	
(11) Depreciation	\$37,359		\$38,485		\$54,250	
(12) Boat Business Profit (10-11)	\$524,236		\$397,411		\$524,616	
(13) Profit at Full Equity (12+4+6)	\$527,194		\$400,446		\$529,538	
Boat Capital						
(14) Fishing Gear & Equip	\$173,116		\$178,332		\$272,202	
Licence Value	\$5,169,761		\$4,499,198		\$8,525,000	
(15) Total Boat Capital	\$5,342,876		\$4,677,530		\$8,797,202	
Rate of Return on Fishing Gear & Equip (13/14*100)	304.5%		224.6%		194.5%	
Rate of Return on Total Boat Capital (13/15*100)	9.9%		8.6%		6.0%	

<sup>a</sup> Estimates of financial performance for the years 2002/03 to 2003/04 are based on the 2002 licence holder survey and 2004/05 is based on the 2006 survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2022a)



Appendix Table 4-2 Financial performance in the SA Abalone Fishery, 2005/06 to 2007/08 (average per boat) <sup>a</sup>

	2005/06		2006/07		2007/08	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$1,016,832		\$943,586		\$877,572	
Variable Costs						
Fuel	\$15,470	3%	\$15,848	3%	\$14,517	3%
Repairs & Maintenance <sup>c</sup>	\$37,974	8%	\$39,047	8%	\$20,576	5%
Ice	\$297	0%	\$305	0%	\$133	0%
Provisions	\$9,282	2%	\$9,544	2%	\$8,341	2%
Labour - paid	\$259,742	56%	\$262,707	55%	\$243,287	56%
(2) Labour - unpaid <sup>d</sup>	\$4,476	1%	\$4,316	1%	\$923	0%
Other	\$10,593	2%	\$10,775	2%	\$4,766	1%
(3) Total Variable Costs	\$337,833	72%	\$342,542	72%	\$292,542	67%
Fixed Costs						
Licence Fee	\$65,408	14%	\$67,360	14%	\$70,361	16%
Insurance	\$6,935	1%	\$7,054	1%	\$4,245	1%
(4) Interest	\$4,983	1%	\$5,347	1%	\$17,112	4%
(5) Labour - unpaid <sup>d</sup>	\$18,882	4%	\$18,882	4%	\$19,453	4%
(6) Leasing	\$0	0%	\$0	0%	\$0	0%
Legal & Accounting	\$14,907	3%	\$15,162	3%	\$8,384	2%
Telephone etc.	\$3,709	1%	\$3,773	1%	\$2,945	1%
Slipping & Mooring	\$752	0%	\$765	0%	\$2,022	0%
Travel	\$4,364	1%	\$4,438	1%	\$8,073	2%
Office & Admin	\$9,153	2%	\$9,310	2%	\$8,708	2%
(7) Total Fixed Costs	\$129,093	28%	\$132,092	28%	\$141,304	33%
(8) Total Boat Cash Costs (3+7)	\$466,927	100%	\$474,634	100%	\$433,846	100%
Boat Gross Margin (1-3)	\$678,999		\$601,044		\$585,030	
(9) Total Unpaid Labour (2+5)	\$23,358		\$23,198		\$20,376	
Gross Operating Surplus (1-8+9)	\$573,263		\$492,150		\$464,102	
(10) Boat Cash Income (1-8)	\$549,905		\$468,952		\$443,726	
(11) Depreciation	\$66,117		\$66,314		\$38,839	
(12) Boat Business Profit (10-11)	\$483,788		\$402,638		\$404,887	
(13) Profit at Full Equity (12+4+6)	\$488,771		\$407,985		\$421,999	
Boat Capital						
(14) Fishing Gear & Equip	\$331,745		\$332,732		\$275,803	
Licence Value	\$8,534,578		\$7,919,798		\$7,958,286	
(15) Total Boat Capital	\$8,866,323		\$8,252,530		\$8,234,088	
Rate of Return on Fishing Gear & Equip (13/14*100)	147.3%		122.6%		153.0%	
Rate of Return on Total Boat Capital (13/15*100)	5.5%		4.9%		5.1%	

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

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-3 Financial performance in the SA Abalone Fishery, 2008/09 to 2010/11 (average per boat) <sup>a</sup>

	2008/09		2009/10		2010/11	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$919,297		\$793,445		\$791,466	
Variable Costs						
Fuel	\$14,523	3%	\$15,008	4%	\$15,244	4%
Repairs & Maintenance <sup>c</sup>	\$21,136	5%	\$22,371	5%	\$23,155	6%
Ice	\$137	0%	\$145	0%	\$150	0%
Provisions	\$8,568	2%	\$9,068	2%	\$9,386	2%
Labour - paid	\$254,854	57%	\$219,964	53%	\$219,416	52%
(2) Labour - unpaid <sup>d</sup>	\$1,005	0%	\$891	0%	\$920	0%
Other	\$4,843	1%	\$4,976	1%	\$5,170	1%
(3) Total Variable Costs	\$305,065	68%	\$272,425	65%	\$273,441	65%
Fixed Costs						
Licence Fee	\$70,239	16%	\$69,871	17%	\$67,663	16%
Insurance	\$4,313	1%	\$4,432	1%	\$4,604	1%
(4) Interest	\$16,248	4%	\$18,755	4%	\$19,360	5%
(5) Labour - unpaid <sup>d</sup>	\$20,219	5%	\$20,785	5%	\$21,513	5%
(6) Leasing	\$0	0%	\$0	0%	\$0	0%
Legal & Accounting	\$8,519	2%	\$8,755	2%	\$9,095	2%
Telephone etc.	\$2,992	1%	\$3,075	1%	\$3,194	1%
Slipping & Mooring	\$2,055	0%	\$2,112	1%	\$2,194	1%
Travel	\$8,203	2%	\$8,429	2%	\$8,757	2%
Office & Admin	\$8,849	2%	\$9,093	2%	\$9,446	2%
(7) Total Fixed Costs	\$141,637	32%	\$145,305	35%	\$145,825	35%
(8) Total Boat Cash Costs (3+7)	\$446,702	100%	\$417,730	100%	\$419,266	100%
Boat Gross Margin (1-3)	\$614,231		\$521,020		\$518,025	
(9) Total Unpaid Labour (2+5)	\$21,223		\$21,676		\$22,433	
Gross Operating Surplus (1-8+9)	\$493,818		\$397,391		\$394,633	
(10) Boat Cash Income (1-8)	\$472,595		\$375,715		\$372,200	
(11) Depreciation	\$39,737		\$40,671		\$41,678	
(12) Boat Business Profit (10-11)	\$432,857		\$335,044		\$330,522	
(13) Profit at Full Equity (12+4+6)	\$449,106		\$353,798		\$349,882	
Boat Capital						
(14) Fishing Gear & Equip	\$282,182		\$288,812		\$295,961	
Licence Value	\$8,336,666		\$7,195,373		\$7,177,428	
(15) Total Boat Capital	\$8,618,848		\$7,484,185		\$7,473,389	
Rate of Return on Fishing Gear & Equip (13/14*100)	159.2%		122.5%		118.2%	
Rate of Return on Total Boat Capital (13/15*100)	5.2%		4.7%		4.7%	

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

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-4 Financial performance in the SA Abalone Fishery, 2011/12 to 2013/14 (average per boat) <sup>a</sup>

	2011/12		2012/13		2013/14	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$819,183		\$839,704		\$644,457	
Variable Costs						
Fuel	\$19,649	5%	\$21,352	5%	\$18,321	4%
Repairs & Maintenance <sup>c</sup>	\$25,206	6%	\$27,881	6%	\$23,817	6%
Ice	\$438	0%	\$484	0%	\$414	0%
Provisions	\$742	0%	\$821	0%	\$702	0%
Labour - paid	\$190,941	44%	\$212,056	46%	\$178,980	43%
(2) Labour - unpaid <sup>d</sup>	\$4,386	1%	\$4,533	1%	\$4,681	1%
Other	\$8,933	2%	\$9,120	2%	\$9,405	2%
(3) Total Variable Costs	\$250,295	58%	\$276,247	61%	\$236,318	57%
Fixed Costs						
Licence Fee	\$63,035	15%	\$62,949	14%	\$64,020	15%
Insurance	\$5,234	1%	\$5,343	1%	\$5,510	1%
(4) Interest	\$82,352	19%	\$77,867	17%	\$75,829	18%
(5) Labour - unpaid <sup>d</sup>	\$7,348	2%	\$7,596	2%	\$7,843	2%
(6) Leasing	\$1,964	0%	\$2,005	0%	\$2,068	0%
Legal & Accounting	\$8,499	2%	\$8,678	2%	\$8,949	2%
Telephone etc.	\$2,404	1%	\$2,454	1%	\$2,531	1%
Slipping & Mooring	\$2,812	1%	\$2,882	1%	\$2,149	1%
Travel	\$3,150	1%	\$3,216	1%	\$3,317	1%
Office & Admin	\$7,005	2%	\$7,152	2%	\$7,375	2%
(7) Total Fixed Costs	\$183,803	42%	\$180,142	39%	\$179,591	43%
(8) Total Boat Cash Costs (3+7)	\$434,097	100%	\$456,389	100%	\$415,909	100%
Boat Gross Margin (1-3)	\$568,888		\$563,457		\$408,139	
(9) Total Unpaid Labour (2+5)	\$11,734		\$12,129		\$12,524	
Gross Operating Surplus (1-8+9)	\$396,820		\$395,444		\$241,072	
(10) Boat Cash Income (1-8)	\$385,085		\$383,315		\$228,548	
(11) Depreciation	\$42,830		\$44,497		\$40,115	
(12) Boat Business Profit (10-11)	\$342,255		\$338,818		\$188,433	
(13) Profit at Full Equity (12+4+6)	\$424,607		\$416,685		\$264,262	
Boat Capital						
(14) Fishing Gear & Equip	\$276,502		\$287,264		\$258,973	
Licence Value	\$6,901,963		\$7,074,864		\$5,274,685	
(15) Total Boat Capital	\$7,178,465		\$7,362,129		\$5,533,657	
Rate of Return on Fishing Gear & Equip (13/14*100)	153.6%		145.1%		102.0%	
Rate of Return on Total Boat Capital (13/15*100)	5.9%		5.7%		4.8%	

<sup>a</sup> Estimates of financial performance for the years 2011/12 to 2013/14 are based on the 2012 licence holder survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-5 Financial performance in the SA Abalone Fishery, 2014/15 to 2016/17 (average per boat) <sup>a</sup>

	2014/15		2015/16		2016/17	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$660,332		\$581,051		\$721,035	
Variable Costs						
Fuel	\$13,610	3%	\$11,440	3%	\$14,221	3%
Repairs & Maintenance <sup>c</sup>	\$27,203	6%	\$23,356	6%	\$29,432	7%
Ice	\$381	0%	\$327	0%	\$413	0%
Provisions	\$56	0%	\$48	0%	\$61	0%
Labour - paid	\$164,121	38%	\$143,132	37%	\$181,459	41%
(2) Labour - unpaid <sup>d</sup>	\$1,051	0%	\$916	0%	\$1,162	0%
Other	\$42,979	10%	\$36,901	9%	\$46,502	10%
(3) Total Variable Costs	\$249,401	58%	\$216,121	55%	\$273,249	62%
Fixed Costs						
Licence Fee	\$61,194	14%	\$53,067	14%	\$48,603	11%
Insurance	\$8,336	2%	\$8,391	2%	\$8,579	2%
(4) Interest	\$67,418	16%	\$66,652	17%	\$65,516	15%
(5) Labour - unpaid <sup>d</sup>	\$8,058	2%	\$8,239	2%	\$8,608	2%
(6) Leasing	\$9,305	2%	\$8,188	2%	\$8,941	2%
Legal & Accounting	\$10,368	2%	\$10,436	3%	\$10,671	2%
Telephone etc.	\$3,594	1%	\$3,617	1%	\$3,699	1%
Slipping & Mooring	\$498	0%	\$501	0%	\$513	0%
Travel	\$2,141	0%	\$2,155	1%	\$2,203	0%
Office & Admin	\$12,256	3%	\$12,336	3%	\$12,613	3%
(7) Total Fixed Costs	\$183,168	42%	\$173,583	45%	\$169,946	38%
(8) Total Boat Cash Costs (3+7)	\$432,569	100%	\$389,704	100%	\$443,195	100%
Boat Gross Margin (1-3)	\$410,931		\$364,930		\$447,787	
(9) Total Unpaid Labour (2+5)	\$9,109		\$9,155		\$9,770	
Gross Operating Surplus (1-8+9)	\$236,872		\$200,502		\$287,610	
(10) Boat Cash Income (1-8)	\$227,763		\$191,347		\$277,840	
(11) Depreciation	\$46,085		\$42,910		\$40,560	
(12) Boat Business Profit (10-11)	\$181,678		\$148,437		\$237,281	
(13) Profit at Full Equity (12+4+6)	\$249,096		\$215,089		\$311,738	
Boat Capital						
(14) Fishing Gear & Equip	\$205,787		\$191,611		\$181,115	
Licence Value	\$6,512,397		\$5,730,507		\$6,257,304	
(15) Total Boat Capital	\$6,718,184		\$5,922,118		\$6,438,419	
Rate of Return on Fishing Gear & Equip (13/14*100)	121.0%		112.3%		172.1%	
Rate of Return on Total Boat Capital (13/15*100)	3.7%		3.6%		4.8%	

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

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-6 Financial performance in the SA Abalone Fishery, 2017/18 and 2018/19 (average per boat) <sup>a</sup>

	2017/18		2018/19	
	Average per Licence	Share of TBCC <sup>b</sup>	Average per Licence	Share of TBCC <sup>b</sup>
(1) Total Boat Gross Income	\$871,647		\$913,862	
Variable Costs				
Fuel	\$17,365	4%	\$17,431	4%
Repairs & Maintenance <sup>c</sup>	\$28,027	6%	\$27,840	6%
Ice	\$774	0%	\$769	0%
Provisions	\$0	0%	\$0	0%
Labour - paid	\$246,932	52%	\$247,107	52%
(2) Labour - unpaid <sup>d</sup>	\$3,113	1%	\$3,115	1%
Other	\$25,075	5%	\$24,907	5%
(3) Total Variable Costs	\$321,286	68%	\$321,171	67%
Fixed Costs				
Licence Fee	\$62,413	13%	\$62,714	13%
Insurance	\$5,679	1%	\$5,760	1%
(4) Interest	\$31,114	7%	\$31,189	7%
(5) Labour - unpaid <sup>d</sup>	\$7,400	2%	\$7,561	2%
(6) Leasing	\$20,519	4%	\$21,512	5%
Legal & Accounting	\$11,721	2%	\$11,889	2%
Telephone etc.	\$2,538	1%	\$2,575	1%
Slipping & Mooring	\$945	0%	\$959	0%
Travel	\$1,765	0%	\$1,790	0%
Office & Admin	\$9,680	2%	\$9,819	2%
(7) Total Fixed Costs	\$153,774	32%	\$155,767	33%
(8) Total Boat Cash Costs (3+7)	\$475,060	100%	\$476,937	100%
Boat Gross Margin (1-3)	\$550,361		\$592,692	
(9) Total Unpaid Labour (2+5)	\$10,513		\$10,677	
Gross Operating Surplus (1-8+9)	\$407,100		\$447,601	
(10) Boat Cash Income (1-8)	\$396,587		\$436,925	
(11) Depreciation	\$32,125		\$30,889	
(12) Boat Business Profit (10-11)	\$364,462		\$406,036	
(13) Profit at Full Equity (12+4+6)	\$416,095		\$458,737	
Boat Capital				
(14) Fishing Gear & Equip	\$255,671		\$245,833	
Licence Value	\$5,482,788		\$5,748,324	
(15) Total Boat Capital	\$5,738,458		\$5,994,157	
Rate of Return on Fishing Gear & Equip (13/14*100)	162.7%		186.6%	
Rate of Return on Total Boat Capital (13/15*100)	7.3%		7.7%	

<sup>a</sup> Estimates of financial performance for 2017/18 and 2018/19 are based on the 2018 licence holder survey. All figures are presented in nominal terms.

<sup>b-d</sup> See Table 3-5 footnotes.

Source: BDO EconSearch (2021a)

## APPENDIX 5 Nominal Licence Fees and Net Economic Return

Appendix Table 5-1 Costs of management in the SA Abalone Fishery, 2002/03 to 2022/23 <sup>a</sup>

	Licence Fee	GVP	Fee/GVP	Catch	Fee/Catch	Licences	Fee/Licence <sup>a</sup>
	(\$'000)	(\$'000)	(%)	(tonnes)	(\$/kg)	(No.)	(\$/licence)
2002/03	1,848	36,289	5.8%	890	\$2.36	35	\$59,946
2003/04	2,098	31,582	6.6%	879	\$2.39	35	\$59,946
2004/05	2,335	33,821	6.9%	902	\$2.59	35	\$66,715
2005/06	2,323	33,859	6.9%	896	\$2.59	35	\$66,359
2006/07	2,392	31,420	7.6%	883	\$2.71	35	\$68,339
2007/08	2,530	31,044	8.1%	889	\$2.85	35	\$72,286
2008/09	2,526	32,520	7.8%	837	\$3.02	35	\$72,160
2009/10	2,512	28,068	9.0%	855	\$2.94	35	\$71,782
2010/11	2,433	27,998	8.7%	815	\$2.99	35	\$69,514
2011/12	2,454	28,901	8.5%	822	\$2.98	35	\$70,102
2012/13	2,450	29,625	8.3%	875	\$2.80	35	\$70,007
2013/14	2,463	22,087	11.2%	661	\$3.73	34	\$72,438
2014/15	2,463	25,237	9.8%	744	\$3.31	34	\$72,438
2015/16	2,136	22,207	9.6%	625	\$3.42	34	\$62,818
2016/17	2,256	27,557	8.2%	743	\$3.04	34	\$66,344
2017/18	2,212	27,214	8.1%	700	\$3.16	34	\$65,072
2018/19	2,223	28,532	7.8%	658	\$3.38	34	\$65,387
2019/20	2,242	21,659	10.4%	509	\$4.40	34	\$65,940
2020/21	2,431	18,337	13.3%	493	\$4.93	34	\$71,505
2021/22	2,024	18,279	11.1%	492	\$4.11	34	\$59,529
2022/23	2,196	n.a.	-	n.a.	-	34	\$64,581

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

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Appendix Table 5-2 Net economic return <sup>a</sup> in the SA Abalone 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
2002/03	36,289	12,213	4,317	1,308	606	17,846
2003/04	31,582	11,573	4,605	1,347	624	13,433
2004/05	35,549	9,081	6,036	1,899	953	17,581
2005/06	35,589	9,908	6,260	2,314	1,161	15,946
2006/07	33,025	10,007	6,418	2,321	1,165	13,115
2007/08	30,715	9,228	5,357	1,359	965	13,805
2008/09	32,175	9,663	5,403	1,391	988	14,731
2009/10	27,771	8,457	5,506	1,423	1,011	11,373
2010/11	27,701	8,465	5,531	1,459	1,036	11,211
2011/12	28,671	7,094	5,217	1,451	968	13,942
2012/13	29,625	7,909	5,374	1,570	1,013	13,758
2013/14	22,087	6,563	5,021	1,375	888	8,240
2014/15	25,237	6,621	6,979	1,761	786	9,089
2015/16	22,207	5,820	6,213	1,640	732	7,801
2016/17	27,557	7,309	6,784	1,550	692	11,222
2017/18	27,214	8,038	5,182	1,003	798	12,193
2018/19	28,532	8,048	5,197	964	768	13,555
2019/20	21,659	6,575	4,793	931	741	8,618
2020/21	18,337	6,276	4,783	1,668	1,157	4,452
2021/22	18,279	6,123	4,518	1,690	1,172	4,776

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

Source: BDO EconSearch analysis



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