

Economic Indicators
for the South Australian
Abalone Fishery
2007/08

A report prepared for
Primary Industries and Resources South Australia

Prepared by



27 May 2009

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Acknowledgments

EconSearch has relied heavily on the voluntary cooperation of fishing operators in providing data for the four surveys. Without this assistance, the compilation and estimation of the 1997/98, 2000/01, 2004/05 and 2007/08 economic indicators would not have been possible. Similarly, in the task of updating the indicators, EconSearch is indebted to various individuals and institutions for providing the necessary information. The continuing advice provided by industry representatives is also greatly appreciated. PIRSA and SARDI officers provided assistance, were supportive of the data collection and offered valuable advice.

Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
CPI	consumer price index
FRDC	Fisheries Research and Development Corporation
fte	full time equivalent
GDP	gross domestic product
GRP	gross regional product
GSP	gross state product
GVP	gross value of production
PIRSA	Primary Industries and Resources South Australia
RBA	Reserve Bank of Australia
R&M	repairs and maintenance
SA	South Australia
SARDI	South Australian Research and Development Institute

Document History and Status

Doc Ver	Doc Status	Issued To	Qty elec	Qty hard	Date	Reviewed	Approved
1	DRAFT	Michael Tokley Bob Pennington	1	-	30/03/09	JBM	JBM
1	DRAFT	Lianos Triantafillos	1	-	31/03/09	JBM	JBM
2	FINAL	Will Zacharin Lianos Triantafillos Michael Tokley Bob Pennington	1	5	27/05/09	JBM	JBM

Printed: 27/05/2009 2:22:00 PM
 Last Saved: 12/05/2009 5:10:00 PM
 File Name: S:\1_Projects\Current\0426_Economic Indicators\2008\Abalone\Reports\Abalone_Final_Report_090527.doc
 Project Manager: Julian Morison
 Principal Author/s: Elizabeth Clark, Matthew Ferris, Julian Morison and Lisa Rippin
 Name of Client: Primary Industries and Resources South Australia
 Name of Project: Economic Indicators for the SA Abalone Fishery, 2007/08
 Document Version: 2
 Job Number: 0426

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 Agriculture, Food and Fisheries to meet the obligations of section 7 of the *Fisheries Management Act 2007*.

This report is the eleventh annual economic indicators report for the South Australian Abalone fishery. The first report, prepared for 1997/98, entitled *Economic Indicators for the South Australian Abalone Fishery 1997/98* (EconSearch 1999), reported on the results of an initial economic survey of the fishery. The second and third annual reports, prepared for 1998/99 and 1999/00 respectively, provided an update of the 1997/98 economic indicators (EconSearch 2000 and 2001). The fourth annual report, prepared for 2000/01 outlined the fishery's economic performance based on the results of a second survey of licence holders (EconSearch 2002). The fifth, sixth and seventh reports, prepared for 2001/02, 2002/03 and 2003/04, provided an update of the economic indicators based on the second survey of licence holders (EconSearch 2003, 2004 and 2005a). The eighth report, prepared for 2004/05, provided an outline of the fishery's economic performance based on the results of a third licence holder survey, conducted in 2006 (EconSearch 2006). The ninth and tenth reports, prepared for 2005/06 and 2006/07, provided updates of the 2004/05 survey based indicators (EconSearch 2007 and 2008a).

The objective of this report, *Economic Indicators for the South Australian Abalone Fishery 2007/08*, is to provide an update of the economic indicators based on results of the fourth licence holder survey, conducted in 2008.

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

- gross value of production (catch and price);
- the cost of management of the fishery;
- financial performance indicators (income, costs, profit, and return on investment);
- economic impact of the fishery, both local and state;
- economic rent;
- external factors influencing the economic condition of the fishery; and
- abalone exports from SA (quantity and value).

For purposes of comparison, summary economic indicators for all SA commercial fisheries, up to 2006/07, are presented in Appendix 3.

2. Method of Analysis and Definition of Terms

2.1 Survey of Licence Holders in the Fishery, 2007/08

The questionnaire for the 2007/08 survey was based on the previous surveys conducted for 1997/98, 2000/01 and 2004/05.¹ It was drafted by the consultants in consultation with the President of the Abalone Fishermen's Association (Mr Bob Pennington) and the Executive Officer of the Abalone Industry Association of South Australia (Mr Michael Tokley).

In November 2008 all licence holders were sent a letter from the consultant seeking their participation in the survey. Licence holders were then contacted by phone to arrange a convenient time to complete a face-to-face interview. Interviews were conducted with 15 of the fishery's 35 licence holders. The majority of the remaining licence holders were either not contactable or were unavailable at the time of the interviews. The 15 completed responses represented 43 per cent of licence holders in the fishery. Thus, the economic indicators for 2007/08 are survey-based estimates.

2.2 Definition of Terms²

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

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

- fuel, oil and grease for the boat (net of diesel fuel rebate)
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs
- repairs & maintenance: ongoing (slipping, painting, motor)

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.

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

¹ Surveys conducted for 1997/98 and 2000/01 are described in EconSearch (2005a). The 2004/05 survey is described in EconSearch (2008a).

² Where possible definitions have been kept consistent with those used by Brown (1997) in ABARE's *Australian Fisheries Survey Report*.

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

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

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.

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 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).

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

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.

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.

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.

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 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.

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.

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. 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.

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

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

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

3. Economic Indicators for the SA Abalone Fishery

3.1 Catch and Gross Value of Production

The data shown in Table 3.1 indicate that the total catch of abalone in SA has remained relatively steady during the period 1990/91 to 2007/08. This is due to the quota management arrangements for the fishery. However, the value of the fishery has increased significantly over the same period. The catch in 2007/08 (889 tonnes) was just over 3 per cent greater than that in 1990/91 (863 tonnes), but the value of the catch has more than doubled in nominal terms, increasing from \$14.0 million in 1990/91 to \$31.0 million in 2007/08.

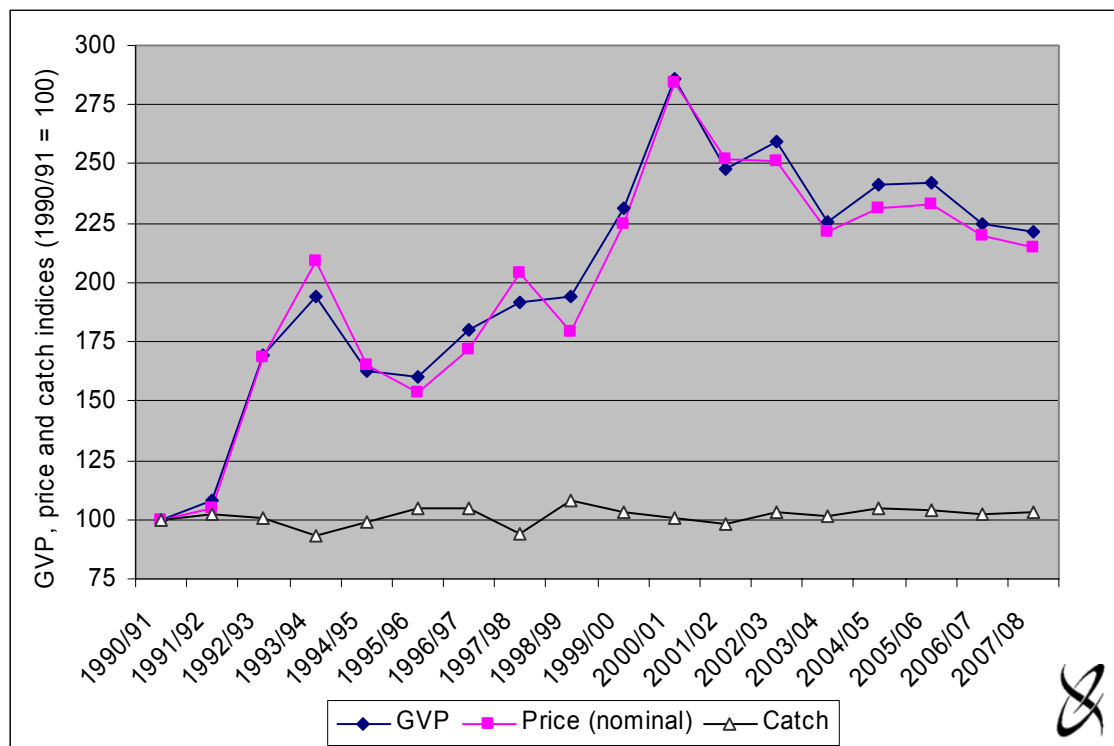
Table 3.1 SA Abalone catch and value of catch, 1990/91 to 2007/08

Year	Southern Zone		Central Zone		Western Zone		South Australia	
	(tonnes)	(\$m)	(tonnes)	(\$m)	(tonnes)	(\$m)	(tonnes)	(\$m)
1990/91	121	2.0	187	3.0	555	9.1	863	14.0
1991/92	131	2.2	191	3.3	563	9.5	885	15.1
1992/93	176	4.0	168	4.9	525	14.9	869	23.7
1993/94	141	5.4	151	5.1	510	16.8	802	27.2
1994/95	154	4.4	205	5.5	492	12.8	851	22.8
1995/96	155	3.8	177	4.5	570	14.1	902	22.5
1996/97	146	3.8	195	5.7	562	15.7	903	25.2
1997/98	123	4.0	180	5.7	509	17.2	812	26.9
1998/99	171	4.7	170	5.0	592	17.4	933	27.2
1999/00	149	5.2	190	7.2	550	20.0	889	32.4
2000/01	145	6.7	188	9.1	534	24.1	867	40.0
2001/02	141	5.9	193	9.0	516	19.9	850	34.8
2002/03	146	5.8	171	8.0	573	22.5	890	36.3
2003/04	143	4.3	177	6.6	559	20.6	879	31.6
2004/05	157	5.9	180	7.4	565	20.5	902	33.8
2005/06	136	5.1	181	7.2	579	21.5	896	33.9
2006/07	164	6.1	168	6.2	551	19.3	883	31.5
2007/08	146	4.5	193	7.0	550	19.6	889	31.0

Source: SARDI Aquatic Sciences

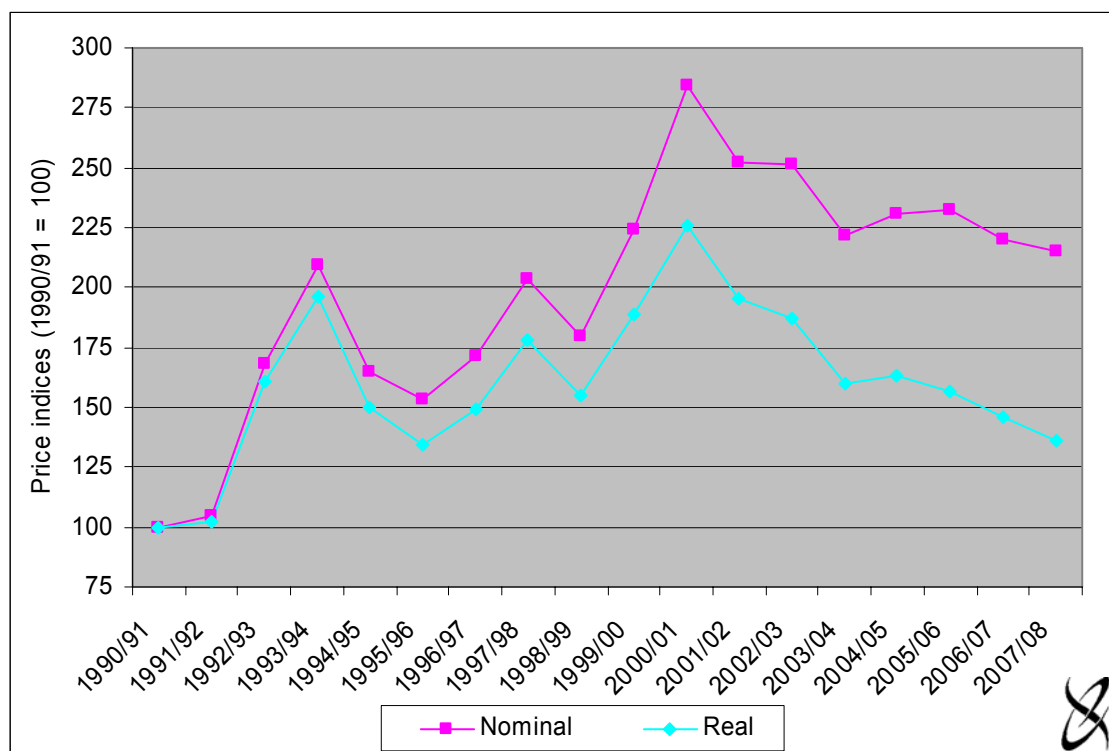
This significant increase in the value of the fishery over the 17-year period 1990/91 to 2007/08 is illustrated in Figure 3.1. As noted above, the nominal value of the abalone catch in 2007/08 was 122 per cent above that in 1990/91. This is principally as a result of a substantial increase in price during the 1990s. Figure 3.1 shows that the average price of abalone in SA has increased over the 17-year period by 115 per cent in nominal terms, despite decreasing in 2006/07 and 2007/08. Because total catch has remained relatively steady throughout the period, variations in gross value of production have closely followed changes in average price. The nominal price of abalone peaked at \$46.15/kg in 2000/01 but declined to \$34.92/kg in 2007/08.

Figure 3.1 GVP, price and catch indices for the SA Abalone fishery (1990/91=100)



Source: SARDI Aquatic Sciences.

In a period of low inflation, the rate of price increase for abalone has been well above the CPI. Figure 3.2 shows that the 115 per cent increase in nominal price was equivalent to a 36 per cent real price increase between 1990/91 and 2007/08. This means that the value of the abalone catch in South Australia in 2007/08 was 40 per cent higher in real terms than it was in 1990/91 (122 per cent higher in nominal terms as noted above). However, since the price peak in 2000/01, the real price of abalone has fallen 40 per cent and, in nominal terms, GVP is 22 per cent lower.

Figure 3.2 Price indices for the SA Abalone fishery (1990/91=100) ^a

^a Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The CPI (consumer price index) has been used to make this adjustment (ABS 2008). It enables meaningful comparisons of prices to be made between years.

Source: SARDI Aquatic Sciences and ABS (2008).

3.2 Cost of Management

South Australian commercial fisheries operate under full cost recovery. Accordingly, licence fees are set to cover the cost of managing the fishery. Management services include:

- annual reports on biological and economic indicators;
- policy and management services;
- regulatory/legislation and licensing services;
- compliance services;
- directorate services;
- extension services;
- research services, including the Fisheries Research and Development Corporation (FRDC) levy; and
- the services of various committees.

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 (Will Zacharin, pers. comm.).

Table 3.2 shows actual licence fee receipts for the SA Abalone fishery for the period 1996/97 to 2008/09 for each of the zones and for the fishery as a whole. For the fishery as a whole:

- licence fees as a percentage of gross value of production decreased between 1996/97 and 2000/01 from 8.8 per cent to 4.0 per cent and have increased in subsequent years to 8.1 per cent in 2007/08;
- the cost of licence fees per kilogram of landed abalone decreased from \$2.46 in 1996/97 to \$1.85 in 2000/01 and has increased since reaching \$2.85 in 2007/08;
- the cost per licence holder peaked at \$74,519 in 1997/98 and then fell to \$45,817 in 2000/01. Since 2000/01, the cost per licence holder has increased, and was \$72,286 in 2007/08; and
- the total number of licence holders in each of the zones has not changed over the entire period across all of the zones.

Between 2007/08 and 2008/09, the cost per licence holder decreased marginally from \$72,286 to \$72,160 per licence holder.

3.3 Financial Performance Indicators

The major measures of the financial performance of the surveyed boats in the SA Abalone fishery are shown in Table 3.4 for the period 2005/06 to 2007/08.³

Income...

Total recorded abalone catch increased by 0.7 per cent from 2006/07 to 2007/08. Gross receipts from sale of abalone decreased by 1.5 per cent over the same period due to a decrease in nominal prices (Table 3.1). The estimated average gross income per boat in the SA Abalone fishery was almost \$878,000 in 2007/08, down from \$947,000 per boat in the previous year⁴ (Table 3.3).

Costs...

Table 3.3 shows total costs separated into variable and fixed costs. Variable costs (67 per cent of total boat cash costs in 2007/08) represented a significantly greater proportion of total boat cash costs than fixed costs (33 per cent).

It was estimated that average total boat cash costs decreased by approximately 9 per cent between 2006/07 and 2007/08. This decrease was the net result of a 15 per cent decrease in variable costs (e.g. fuel, repairs and maintenance and paid labour) and a 7 per cent increase in fixed costs. Notable changes include a significant decline in paid labour, reflecting a decrease in value of catch, a reduction in repairs and maintenance cost of 47 per cent and an increase in interest payment from just over \$5,300 to approximately \$17,100 (Table 3.3)⁴.

³ Similar data for the years 1997/98 to 2004/05 are provided in Appendix 4 of this report.

⁴ Financial performance estimates for the 2007/08 were based on different survey samples to earlier years. Some of the difference between years is, therefore, attributable to sampling variability.

Table 3.2 Cost of management in the SA Abalone fishery, 1996/97 to 2008/09

	Licence Fee (\$'000)	GVP (\$'000)	Fee/GVP (%)	Catch (tonnes)	Fee/Catch (\$/kg)	Licence Holders (No.)	Fee/Licence Holder (\$/licence)
Southern							
1996/97	368	3,824	9.6%	146	\$2.52	6	\$61,276
1997/98	446	3,978	11.2%	123	\$3.63	6	\$74,391
1998/99	341	4,682	7.3%	171	\$1.99	6	\$56,854
1999/00	406	5,215	7.8%	149	\$2.73	6	\$67,696
2000/01	274	6,736	4.1%	145	\$1.89	6	\$45,641
2001/02	294	5,873	5.0%	141	\$2.08	6	\$48,985
2002/03	311	5,757	5.4%	146	\$2.13	6	\$51,888
2003/04	359	4,329	8.3%	143	\$2.51	6	\$59,827
2004/05	400	5,914	6.8%	157	\$2.55	6	\$66,621
2005/06	397	5,144	7.7%	136	\$2.92	6	\$66,134
2006/07	409	6,076	6.7%	164	\$2.49	6	\$68,142
2007/08	432	4,453	9.7%	146	\$2.96	6	\$72,061
2008/09	433	n.a.	-	n.a.	-	6	\$72,178
Central							
1996/97	456	5,659	8.1%	195	\$2.34	6	\$75,931
1997/98	513	5,726	9.0%	180	\$2.85	6	\$85,470
1998/99	426	5,032	8.5%	170	\$2.51	6	\$71,036
1999/00	437	7,152	6.1%	190	\$2.30	6	\$72,839
2000/01	277	9,140	3.0%	188	\$1.47	6	\$46,188
2001/02	297	8,961	3.3%	193	\$1.54	6	\$49,545
2002/03	345	8,046	4.3%	171	\$2.02	6	\$57,539
2003/04	389	6,618	5.9%	177	\$2.20	6	\$64,859
2004/05	406	7,402	5.5%	180	\$2.26	6	\$67,702
2005/06	403	7,241	5.6%	181	\$2.23	6	\$67,189
2006/07	414	6,164	6.7%	168	\$2.46	6	\$68,974
2007/08	437	6,957	6.3%	193	\$2.27	6	\$72,867
2008/09	436	n.a.	-	n.a.	-	6	\$72,688
Western							
1996/97	1,394	15,701	8.9%	562	\$2.48	23	\$60,593
1997/98	1,649	17,179	9.6%	509	\$3.24	23	\$71,696
1998/99	1,122	17,447	6.4%	592	\$1.90	23	\$48,800
1999/00	938	20,027	4.7%	550	\$1.71	23	\$40,789
2000/01	1,053	24,135	4.4%	534	\$1.97	23	\$45,767
2001/02	1,128	19,921	5.7%	516	\$2.19	23	\$49,037
2002/03	1,192	22,486	5.3%	573	\$2.08	23	\$51,810
2003/04	1,350	20,635	6.5%	559	\$2.42	23	\$58,695
2004/05	1,529	20,505	7.5%	565	\$2.71	23	\$66,482
2005/06	1,523	21,474	7.1%	579	\$2.63	23	\$66,202
2006/07	1,569	19,289	8.1%	551	\$2.85	23	\$68,225
2007/08	1,660	19,634	8.5%	550	\$3.02	23	\$72,193
2008/09	1,656	n.a.	-	n.a.	-	23	\$72,018
Total Fishery							
1996/97	2,217	25,184	8.8%	903	\$2.46	35	\$63,339
1997/98	2,608	26,883	9.7%	812	\$3.21	35	\$74,519
1998/99	1,890	27,161	7.0%	933	\$2.03	35	\$53,993
1999/00	1,781	32,394	5.5%	889	\$2.00	35	\$50,896
2000/01	1,604	40,011	4.0%	867	\$1.85	35	\$45,817
2001/02	1,719	34,755	4.9%	850	\$2.02	35	\$49,115
2002/03	1,848	36,289	5.1%	890	\$2.08	35	\$52,805
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	31,529	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	n.a.	-	n.a.	-	35	\$72,160

Source: PIRSA Fisheries and SARDI Aquatic Sciences.

Table 3.3 Financial performance in the SA Abalone fishery, 2005/06 to 2007/08 ^a
(average per boat)

	2005/06		2006/07		2007/08	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$1,016,832		\$946,859		\$877,572	
Variable Costs						
Fuel	\$15,470	3%	\$15,848	3%	\$14,517	3%
Repairs & Maintenance ^c	\$37,974	8%	\$39,047	8%	\$20,576	5%
Bait/Ice	\$297	0%	\$305	0%	\$133	0%
Provisions	\$9,282	2%	\$9,544	2%	\$8,341	2%
Labour - paid	\$259,742	56%	\$263,618	55%	\$243,287	56%
(2) - unpaid ^d	\$4,476	1%	\$4,331	1%	\$923	0%
Other	\$10,593	2%	\$10,775	2%	\$4,766	1%
(3) Total Variable Costs	\$337,833	72%	\$343,468	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 ^d	\$18,882	4%	\$18,882	4%	\$19,453	4%
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%
(6) Total Fixed Costs	\$129,093	28%	\$132,092	28%	\$141,304	33%
(7) Total Boat Cash Costs (3 + 6)	\$466,927	100%	\$475,560	100%	\$433,846	100%
Boat Gross Margin (1 - 3)	\$678,999		\$603,391		\$585,030	
(8) Total Unpaid Labour (2 + 5)	\$23,358		\$23,213		\$20,376	
Gross Operating Surplus (1 - 7 + 8)	\$573,263		\$494,512		\$464,102	
(9) Boat Cash Income (1 - 7)	\$549,905		\$471,299		\$443,726	
(10) Depreciation	\$66,117		\$66,314		\$38,839	
(11) Boat Business Profit (9 - 10)	\$483,788		\$404,985		\$404,887	
(12) Profit at Full Equity (11 + 4)	\$488,771		\$410,332		\$421,999	
Boat Capital						
(13) Fishing Gear & Equip	\$331,745		\$332,732		\$275,803	
Licence Value	\$8,534,578		\$7,947,273		\$7,958,286	
(14) Total Boat Capital	\$8,866,323		\$8,280,005		\$8,234,088	
Rate of Return on Fishing Gear & Equip (12 / 12 * 100)	147.3%		123.3%		153.0%	
Rate of Return on Total Boat Capital (12 / 14 * 100)	5.5%		5.0%		5.1%	

^a Financial performance estimates for 2005/06 to 2006/07 are based on the February - March 2006 survey of licence holders. Financial performance estimates for 2007/08 are based on the most recent survey of licence holders.

^b Total boat cash costs.

^c 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).

^d 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: EconSearch analysis.

In 2007/08, for the fishery as a whole, approximately 61 per cent of total boat costs were attributable to fixed and variable labour costs (almost \$264,000 including unpaid labour), by far the largest individual cost item. The labour costs reported in Table 3.3 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 (\$20,376 per licence for 2007/08) was divided into variable (fishing and repairs and maintenance) and fixed (management and administration) components based on the 2008 licence holder survey.

The other significant cash costs were licence fees (16 per cent), repairs and maintenance (5 per cent), interest (4 per cent) and fuel (3 per cent) (Table 3.3).

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 decrease in boat gross margin in 2007/08 (\$585,000) compared to previous years mainly due to the decline in boat gross income in 2007/08.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members as a cost item. The average GOS of all boats in 2007/08 was estimated to be approximately \$464,000, 6 per cent lower than in 2006/07 (Table 3.3).

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 2007/08 is approximately \$444,000 per boat.

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 2007/08, the average boat business profit was almost \$405,000, virtually unchanged from 2006/07.

Profit at full equity is a measure of the profitability of an individual licence holder, assuming the licence holder has full equity in the operation. It is a useful absolute measure of the economic performance of fishing firms. Profit at full equity in 2007/08 (\$422,000) was slightly more than the previous year (\$410,000), an increase of around 3 per cent.

Return on Investment...

There are a number of interpretations of the concept of return on investment. For the purpose of this analysis it is appropriate to consider the investment as the capital 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 return on investment has been calculated as the profit at full equity as a percentage of the total capital employed.

The average total investment in fishing gear and licence in the Abalone Fishery in 2007/08 was estimated to be approximately \$8.23m per licence holder. This included the licence holder's estimate of the value of their licence (\$7.96m) and estimated investment in boats and fishing gear (approximately \$276,000 per licence).

The average return on investment for the fishery for the period 2005/06 to 2007/08 is reported in Table 3.3. While the rate of return to boat capital (i.e. fishing gear and

equipment) is high (153.0 per cent in 2007/08), the rate of return to total capital was estimated be 5.1 per cent, similar to the estimate for 2006/07.

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 2007/08 in Table 3.3 represents the licence holders' estimate of the value of their licence based on the 2008 survey responses.

There was a large degree of variability in the licence holders estimates of licence value. Survey respondents estimates of licence value ranged from approximately \$5 million to \$11 million.

The PIRSA Fisheries Public Register indicates that there was one licence transfer over the 12-month period, however, the value of this transfer is unknown and would not be reportable for confidentiality reasons.

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 3.4.

Table 3.4 Sensitivity of rate of return to changes in licence value, 2007/08 ^a

Licence Value	\$3,979,000	\$7,958,000	\$11,937,000
Rate of Return to Total Capital (%)	9.9%	5.1%	3.5%

^a Based on the licence value estimated for 2007/08 and values 50 per cent above and below this estimate.

Source: EconSearch analysis.

Based on the costs and returns shown for the year 2007/08 in Table 3.3, a licence value of \$4.0 million (approximately 50 per cent below the licence value estimated for 2007/08) would mean an annual return to the total asset of 9.9 per cent, while a licence value of \$11.9 million (approximately 50 per cent above the licence value estimated for 2007/08) would mean an annual return to the total asset of 3.5 per cent (see Table 3.4).

3.4 State and Regional Economic Impact

Estimates of the economic impact of the SA Abalone fishing industry on the South Australian and regional (Eyre⁵) economies in 2007/08 are outlined below.

⁵ The Eyre region is comprised of the Statistical Division of Eyre, as defined by the Australian Bureau of Statistics (ABS).

3.4.1 Measuring direct and flow-on effects

Estimates of the direct economic impact of the SA Abalone fishery are consistent with the method employed in PIRSA's *Food for the Future* value-chain analysis, 2004/05⁶.

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

- the landed beach value of production; and
- downstream impacts, including the:
 - net value of local (state and regional) processing;
 - value of local transport services at all stages of the marketing chain; and
 - net value of local retail and food service (e.g. hotels & restaurants) trade⁷.

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 impacts at regional and state levels.

Economic impacts at the state and regional levels were based on models for the state as a whole and for the Eyre region, respectively, prepared for the Regional Communities Consultative Council, Local Government Association of South Australia and Regional Development SA (EconSearch 2005b).

In order to compile a representative cost structure for the fishing sector, costs per boat were derived from data provided by operators in the fishery in the financial survey for 2007/08, described earlier. On an item-by-item basis, the expenditures were allocated between those occurring in the Eyre region, 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 *Food for the Future* value-chain analysis (*Seafood Scorecard, 2005/06*) (Jack Langberg, 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 impacts have been specified in terms of the following economic indicators:

- value of output;
- employment;
- household income; and
- 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.

⁶ The relevant information was obtained from Jack Langberg (PIRSA, pers. comm.).

⁷ Estimates of economic impact prepared for this and other commercial fisheries in South Australia (except Lakes and Coorong) for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade.

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 impact avoids the problem of double counting that may arise from using value of output for this purpose.

3.4.2 Economic impacts at state and regional levels

Estimates of the economic impact generated in 2007/08 by the SA Abalone fishing industry in South Australia and the Eyre region are outlined in Tables 3.5 and 3.6, respectively.

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

The direct impact measures fishing and downstream activities (i.e. processing, transport, retail/food services and capital expenditure). The flow-on impact measures the economic effects in other sectors of the economy (trade, manufacturing, etc.) generated by the fishing industry activities, that is, the multiplier effects.

Value of output...

The value of output generated directly in South Australia and the Eyre region by Abalone fishing enterprises summed to \$31.0 million in 2007/08 (Tables 3.5 and 3.6), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$4.6 million (Table 3.5), \$2.9 million of which occurred in the Eyre region (Table 3.6).

Flow-ons to other sectors of the state economy added another \$27.8 million in output (\$11.1 million in the regional economy). The sectors most affected were the manufacturing, trade, business services and transport sectors.

Employment and household income...

In 2007/08, the SA Abalone fishery was responsible for the direct employment of around 90 full-time equivalents (fte) and downstream activities created employment of around 20 fte jobs state-wide. Flow-on business activity was estimated to generate a further 146 fte jobs state-wide (73 fte jobs regionally). These state-wide jobs were concentrated in the trade (42), business services (16) and manufacturing (15) sectors.

Table 3.5 The economic impact of the Abalone fishing industry in South Australia, 2007/08

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	31.0	48.9%	90	35.4%	9.2	51.7%	25.6	62.6%
Processing	2.1	3.3%	6	2.4%	0.3	1.7%	0.5	1.2%
Transport	1.6	2.5%	7	2.7%	0.5	2.9%	0.8	1.9%
Retail	0.0	0.0%	0	0.0%	0.0	0.0%	0.0	0.0%
Food services	0.2	0.3%	2	0.6%	0.1	0.3%	0.1	0.2%
Capital expenditure ^b	0.7	1.2%	5	1.8%	0.2	1.1%	0.3	0.7%
Total Direct ^c	35.7	55.1%	110	41.2%	10.3	56.6%	27.2	65.9%
Flow-on effects								
Trade	3.9	6.2%	42	16.2%	1.5	8.3%	1.8	4.5%
Manufacturing	5.1	8.0%	15	5.9%	0.7	4.2%	1.2	2.9%
Business Services	2.9	4.6%	16	6.4%	1.1	6.0%	1.4	3.4%
Transport	1.3	2.1%	6	2.3%	0.4	2.4%	0.6	1.6%
Other Sectors	14.5	22.9%	67	26.1%	3.8	21.4%	8.6	21.0%
Total Flow-on ^c	27.8	43.8%	146	57.0%	7.5	42.3%	13.7	33.4%
Total ^c	63.4	100.0%	256	100.0%	17.9	100.0%	40.8	100.0%
Total/Direct	1.8	-	2.3	-	1.7	-	1.5	-
Total/Tonne	\$71,300	-	0.29	-	\$20,000	-	\$45,900	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 78 full-time and 37 part-time jobs, that is, 115 jobs in aggregate.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

Personal income of \$9.2 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$1.1 million in downstream activities in SA. An additional \$7.5 million was earned by wage earners in other businesses in the state as a result of fishing and associated downstream activities. The total household income impact was \$17.9 million in SA (\$13.0 million in the Eyre 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 2007/08, total Abalone fishing industry related contribution to GSP in South Australia was \$40.8 million (\$32.7 million in the Eyre region), \$25.6 million generated by fishing directly, \$1.6 million generated by downstream activities and \$13.7 million generated in other sectors of the state economy.

Table 3.6 The economic impact of the Abalone fishing industry in the Eyre region, 2007/08

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	31.0	69.0%	90	50.5%	9.2	70.9%	25.6	78.9%
Processing	2.1	4.7%	9	5.1%	0.4	3.0%	0.6	1.8%
Transport	0.4	0.8%	2	1.1%	0.1	1.0%	0.2	0.6%
Retail	0.0	0.0%	0	0.0%	0.0	0.0%	0.0	0.0%
Food services	0.0	0.0%	0	0.1%	0.0	0.0%	0.0	0.0%
Capital expenditure ^b	0.4	1.0%	4	2.4%	0.2	1.2%	0.2	0.7%
Total Direct ^c	34.0	74.5%	106	56.8%	9.9	74.9%	26.6	81.3%
Flow-on effects								
Trade	2.1	4.7%	27	14.8%	0.8	6.2%	1.0	3.1%
Manufacturing	1.1	2.5%	5	2.8%	0.2	1.6%	0.3	1.0%
Business Services	0.9	1.9%	6	3.1%	0.3	2.4%	0.4	1.3%
Transport	0.6	1.3%	3	1.8%	0.2	1.6%	0.3	0.9%
Other Sectors	6.3	14.0%	33	18.3%	1.6	12.2%	3.8	11.7%
Total Flow-on ^c	11.1	24.6%	73	40.8%	3.1	24.0%	5.8	18.0%
Total ^c	45.0	100.0%	179	100.0%	13.0	100.0%	32.4	100.0%
Total/Direct	1.3	-	1.7	-	1.3	-	1.2	-
Total/Tonne	\$50,600	-	0.20	-	\$14,600	-	\$36,400	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 78 full-time and 37 part-time jobs, that is, 115 jobs in aggregate.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

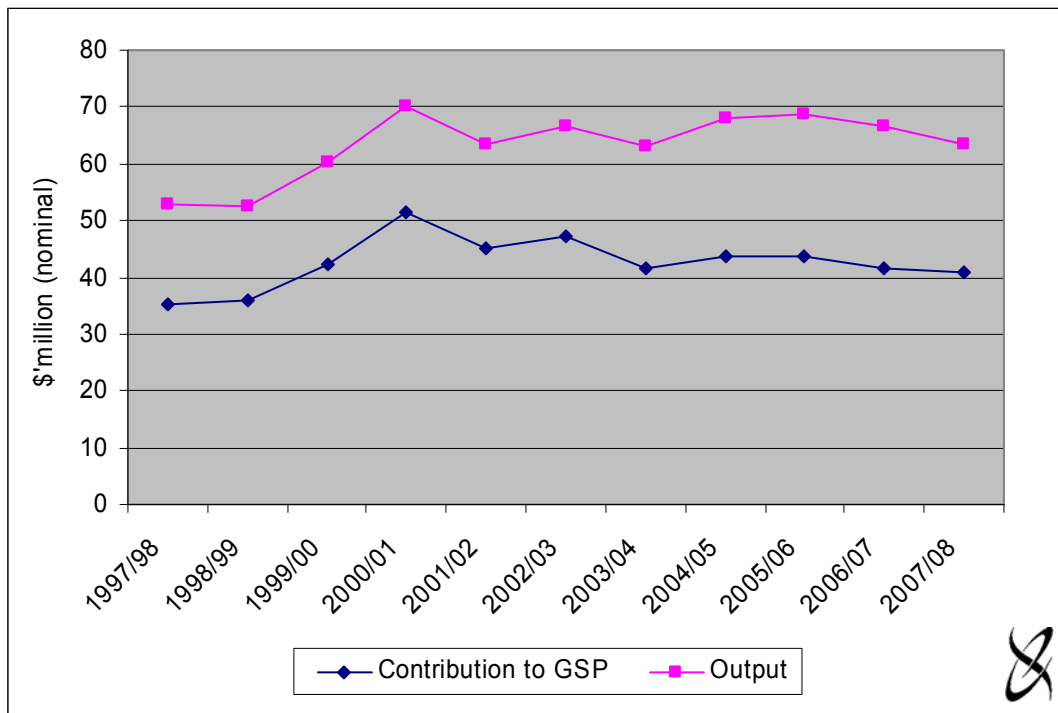
Total impacts over time...

Figures 3.3 and 3.4 illustrate the total economic impact of the fishery on the SA economy for the 11 years, 1997/98 to 2007/08. Estimates of economic impact are expressed in nominal terms. No adjustment has been made to reflect inflation.

Estimates of economic impact for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on a second survey of licence holders conducted in April 2002. Estimates for 2004/05 to 2006/07 are based on the third survey of licence holders conducted in February - March 2006. Estimates of economic impact for 2007/08 are based on the most recent survey of licence holders conducted in early 2009

The economic impact of the SA Abalone fishery in 1997/98 and 1998/99 does not include the direct and flow-on effects of estimated capital expenditure by licensees; these effects have been included in subsequent years. Estimates of economic impact for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade; these effects have been included in subsequent years.

Figure 3.3 Total gross state product and output impact of the SA Abalone fishery on the SA economy, 1997/98 to 2007/08 ^a



^a The economic impact of the SA Abalone fishery in 1997/98 and 1998/99 does not include the direct and flow-on effects of estimated capital expenditure by licensees; these effects have been included in subsequent years. Estimates of economic impact for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade; these effects have been included in subsequent years.

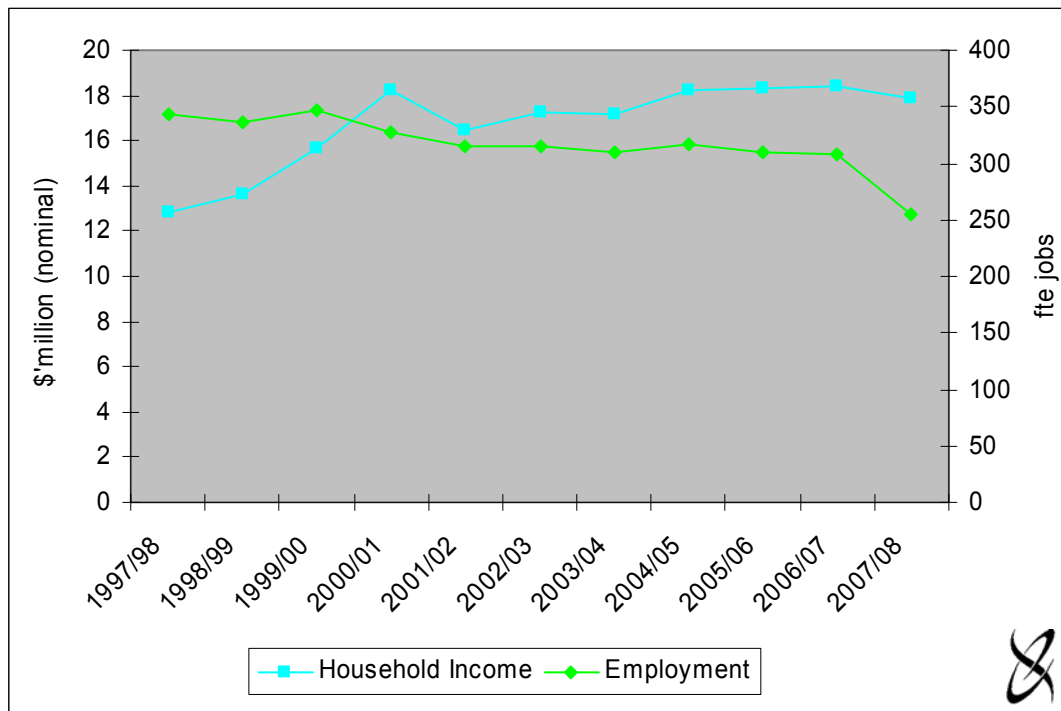
Source: EconSearch (2008a) and EconSearch analysis.

As economic impact estimates for the years 1997/98 to 2007/08 are based on different survey samples and techniques, some of the variability between years, is therefore, attributable to sampling variability.

Care should be taken when using value of output as a measure of economic impact as it includes elements of double counting. Using contribution to GSP is the preferred measure of net contribution to the SA economy.

There has been some decrease in the total employment impact of the fishery between 1997/98 and 2007/08, as illustrated in Figure 3.4. This decrease is most likely due to productivity improvements across all sectors.

Figure 3.4 Total employment and household income impact of the SA Abalone fishery on the SA economy, 1997/98 to 2007/08 ^a



^a See footnote for Figure 3.3.

Source: EconSearch (2008a) and EconSearch analysis

3.4.3 Additional expenditures and impacts

In addition to the impacts generated by recurrent expenditures in the abalone industry (as detailed in Table 3.5 and 3.6), further regional economic impacts 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 impact 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 impacts of the new venture can be attributed to the source of the investment.

Anecdotal evidence from the survey suggested that profits generated in the abalone industry have been and continue to be used to finance new ventures. The 2009 licence-holder survey indicated that substantial local investment has been made in new ventures and existing businesses or assets in recent years. Average annual investment expenditures in new and existing enterprises are reported in Table 3.7.

Table 3.7 Average annual local investment expenditures by licence holders in the SA Abalone fishery, 2003/04 to 2007/08

	Existing Businesses/ Assets (e.g. motels, farms, shares, real estate) (\$m)	New Enterprises (e.g. aquaculture, horticulture, property development) (\$m)	Total (\$m)
Estimated Average Annual Expenditure per Licence Holder ^a	0.129	0.104	0.233
Estimated Aggregate Annual Expenditure for the Abalone Fishery ^b	4.499	3.656	8.155

^a Based on survey respondents' estimated investment expenditures over the 5 years, 2003/04 to 2007/08.

^b These estimates are based on a sample (15) of licence holders. Given the 'lumpy' nature of investment expenditure they may or may not be representative of all licence holders.

Source: EconSearch analysis.

While investment in existing businesses has the potential to add significantly to local economic activity, the approach taken to estimate the regional economic impact was to focus solely on investment in new, local enterprises as these investments are unquestionably a net addition to local economic activity. The impacts of local investment expenditure in new enterprises are reported in Table 3.8.

Table 3.8 Regional economic impact of local investment expenditures in new enterprises by licence holders in the SA Abalone fishery, 2007/08^a

Sector	Investment/ Turnover (\$m)	Employment (fte jobs)	Household income (\$m)	Contribution to GRP (\$m)
Investment Sectors (direct)	3.66	21	0.70	1.50
All other sectors ^a (indirect)	1.70	13	0.50	0.86
Total	5.35	34	1.20	2.36

^a '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: EconSearch analysis.

The estimated impacts of local investment by abalone licence holders in 2007/08, shown in Table 3.8, indicate the extent to which such investments add to the already significant regional contribution of the industry.

3.5 Economic Rent

Economic rent⁸ is defined as the difference between the price of a good produced using a natural resource and the unit costs of turning that natural resource into the good. In this case the natural resource is the 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), bait, overheads such as administration and licences and the cost of capital invested in the boat and gear (excluding licence). Capital cost includes depreciation and the opportunity cost of the capital applied to the fishery. The opportunity cost is equivalent to what the fisher's investment could have earned in the next best alternative use.

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.

Given the relatively high-risk nature of the industry (weak property rights therefore short time horizons, exposure to exchange rate fluctuations, general price volatility, potential problems of resource sustainability and political risk in export countries) an argument could be made for a higher required rate of return.

What remains after the value of these inputs (labour, capital, materials, services) has been netted out is the value of the natural resource itself. The economic rent generated in the abalone fishery was estimated to have increased from \$13.2 million in 2006/07 to \$13.8 million in 2007/08 (Table 3.10). In nominal terms, the economic rent is above that estimated in the first year of the series (\$13.5 million in 1997/98) but well below the peak year estimate of \$23.1 million in 2000/01.

When an economic rent is generated in a fishery and there are transferable licences, the rent represents a return to the value of the licences. The aggregate value of licences in 2007/08 was estimated to be approximately \$278.5 million (35 licences with an average value of approximately \$8.0m). An annual economic rent of \$13.8 million represents a return of 5.0 per cent to the capital value of the fishery.

⁸ 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 economic rent, 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 economic rent.

Table 3.9 Economic rent in the SA Abalone fishery, 1997/98 to 2007/08 (\$'000)

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	Economic Rent
1997/98	26,883	7,764	4,551	643	419	13,506
1998/99	27,161	8,074	3,923	637	415	14,112
1999/00	32,394	9,849	3,879	653	426	17,587
2000/01	40,011	11,284	3,879	1,223	567	23,059
2001/02	34,755	10,753	4,049	1,257	583	18,113
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	33,140	10,039	6,418	2,321	1,165	13,197
2007/08	30,715	9,228	5,357	1,359	965	13,805

Source: EconSearch analysis.

4. Other Economic Indicators

4.1 Factors Influencing the Economic Condition of the Abalone Fishery

There are a number of factors in 2007/08 that have 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 Illegal, unregulated and unreported Abalone fishing activity

Illegal, unregulated and unregulated abalone fishing activity is an ongoing problem that has the potential to cost the industry millions of dollars in lost income. It undermines the existing management systems that are in place to ensure the sustainability of the resource. This practice also undercuts the economic benefits received by legitimate abalone fishers.

It is difficult to determine the actual level of illegal, unregulated or unreported catch of abalone in South Australia. Over the three years 2004/05 to 2006/07, PIRSA Fisheries received 197 Information Reports (IRs) relating to illegal take of abalone in the southern zone of the fishery. Some of the IRs indicated that significant quantities of abalone were being taken, however there is no way of validating to total weight of abalone taken illegally.

During 2007, PIRSA Fisheries identified that 26,840 individual abalone may have been taken illegally in the central zone fishery. Based on the assumption that the average weight of abalone taken illegally was equivalent to the legal minimum weight (113g) the total illegal harvest in the central zone is estimated to be approximately 3 tonnes (Mayfield et. al. 2008).

To illustrate the ongoing nature of the problem, in May 2008, two men were charged with offences relating to illegal abalone fishing and possession. A significant amount of illegally harvested and undersize abalone was recovered (MCCN 2008a). In April 2008, two men were charged with a number of abalone related fisheries offences. Charges included taking over the bag limit of abalone and taking undersize abalone (MCCN 2008b).

Illegal, unregulated and unreported abalone fishing was raised as a concern by many licence holders who participated in the 2009 survey and is discussed in Section 4.2.

4.1.2 Stock assessment

Western Zone

The western zone is divided into two sections region A and region B. The assessment of the stock within the regions is based upon commercial catch per unit of effort (CPUE) data and some limited information that is available on the size composition of the catch. There are two species harvested in the western zone, greenlip and blacklip abalone. Catch and effort and size indicators, for the years 2003 to 2007, are detailed for region A and B in Tables 4.1 and 4.2, respectively.

Table 4.1 Biological performance indicators, Western Zone Abalone, region A

Indicator	Greenlip Abalone					Blacklip Abalone				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
CPUE (kg/hr)	78.2	78.2	79.0	n.a.	75.9	80.0	80.2	81.6	81.0	76.7
Mean size (mm)	168.4	168.2	165.6	n.a.	169.0	149.4	149.6	149.4	n.a.	152.1

Source: Chick et al. (2008).

Table 4.2 Biological performance indicators, Western Zone Abalone, region B

Indicator	Greenlip Abalone					Blacklip Abalone				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
CPUE (kg/hr)	51.0	55.1	50.8	46.4	44.1	62.2	56.2	48.3	54.4	56.8
Mean size (mm)	n.a.	n.a.	163.7	169.8	164.9	n.a.	n.a.	145.1	150.3	148.7

Source: Chick et al. (2007).

Central Zone

There are two species harvested in the central zone, blacklip and greenlip abalone. The assessment of the status of both species in the central zone is reliant upon catch and effort data and measurements of average size of abalone harvested. The total allowable commercial catch (TACC) for blacklip abalone in the central zone was reduced from 42.3 tonnes in 2004 to 29.0 tonnes in 2005. The TACC for greenlip abalone has remained unchanged at 143.1 tonnes (Mayfield et al. 2008). Catch and effort and size indicators, for the years 2002 to 2005, are detailed in Table 4.3.

Table 4.3 Biological performance indicators, Central Zone Abalone

Indicator	CPUE (kg/hr)					Mean size (mm)				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Greenlip Abalone										
Area 21	94.6	96.2	80.4	91.7	86.0	146.8	147.1	147.9	145.7	145.9
Area 24	52.0	56.8	63.0	68.8	59.1	157.0	153.1	154.5	-	148.9
Blacklip Abalone										
Area 26	74.4	79.1	72.6	73.6	81.9	147.5	147.6	147.2	147.2	149.3
Area 27	70.4	80.5	81.0	61.4	63.3	148.9	147.0	142.8	146.0	147.2

Source: Mayfield et al. (2008)

There is evidence that the biomass for legal-sized greenlip abalone is declining on the principle fishing grounds and the resource, in the central zone, has weakened in recent years. Similarly the blacklip abalone fishery resource in the central zone is in a weak position, with recent years being some of the weakest on record.

Southern Zone

Blacklip abalone comprises approximately 98 per cent of the total catch from the southern zone of the abalone fishery. As a result there is little information available regarding the status of the greenlip species in this area. Stock assessment of blacklip abalone in the southern zone relies upon catch and effort data and measurements of average size of abalone harvested.

In 2003 the southern zone fishery was separated into fish-down and non-fish-down areas. Within the fish-down areas the abalone generally have a smaller maximum size or a slower growth rate than the other areas of the fishery (Mayfield et al. 2005d). Catch and effort and size indicators for both fish-down and non-fish-down areas, for the years 2002 to 2006, are detailed in Table 4.4.

Table 4.4 Biological performance indicators, Southern Zone Abalone

Indicator	CPUE (kg/hr)					Mean size (mm)				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Blacklip Abalone (non fish-down areas)										
Area 35	52.2	121.3	98.2	111.9	89.2	137.6	139.4	138.7	143.7	141.0
Area 36	88.8	107.6	119.8	137.5	99.8	133.7	137.9	n.a.	141.5	139.5
Area 37	110.2	120.9	110.9	116.6	108.1	135.4	136.2	135.9	137.2	137.6
Area 39	87.6	96.9	96.8	105.2	95.4	135.3	136.1	137.4	134.4	136.8
Area 40	101.9	113.0	97.7	101.5	114.7	136.1	135.9	137.8	n.a.	133.7
Blacklip Abalone (fish-down areas)										
FDA 1	92.1	87.6	89.0	115.1	109.9	-	-	-	-	-
FDA 2	62.4	60.4	65.5	69.6	n.a.	-	-	-	-	-
FDA 3	111.5	112.6	114.0	110.5	111.3	-	-	-	-	-
FDA 4	88.2	92.1	104.0	101.3	86.3	-	-	-	-	-

Source: Mayfield et al. (2007)

4.1.3 Exchange rates

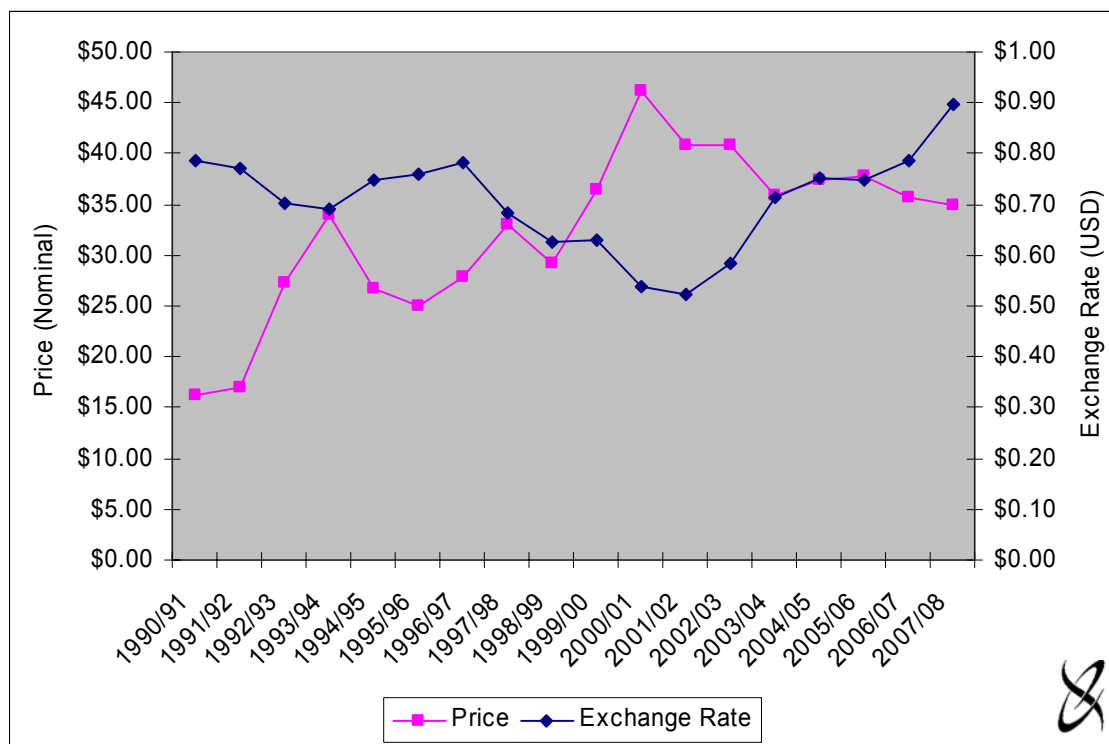
A large proportion of the South Australian abalone catch is exported overseas (Section 4.3). Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery. The value of the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar have the potential to influence the demand for Australian abalone exports. The Australian dollar generally followed an increasing trend throughout 2007/08 ranging from US78 cents and US96 cents. This rate is higher than 2006/07 when the value of the dollar ranged from US74 cents to US85 cents. There has been incremental growth in the strength of the AUD since 2000/01 when the dollar fell to around US50 cents (Figure 4.1).

The average exchange rate in 2007/08 was US\$0.90, an increase of 14 per cent compared to the average for the previous year. 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 between 2006/07 and 2007/08.

The most significant export destination for South Australian abalone in 2007/08 was Hong Kong (Table 4.5). Thus it may be useful to compare the value of the Australian dollar with the Hong Kong dollar (HKD). The average rate of exchange in 2006/07 was 6.13 HKD increasing to 6.99 (HKD) in 2007/08.

The relationship between the price of abalone and the exchange rate over the past 16 years can be readily observed 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 price for SA abalone for the period 1990/91 to 2007/08 is -0.67. This indicates that there is a strong inverse relationship between the two variables. Thus, when the Australian dollar appreciates, as it did between 2000/01 and 2007/08, there is, generally, a corresponding decline in the average price of SA abalone.

Figure 4.1 Exchange rate (USD) and price for SA Abalone, 1990/91 to 2007/08



Source: SARDI Aquatic Sciences and RBA (2008 and previous issues).

4.2 Licence Holder Comments

In the 2008 survey licence holders highlighted some key issues that have the potential to affect the economic performance of the fishery.

Exchange Rates

Many licence holders highlighted the impact of exchange rate fluctuations on the value of their catch. As noted in the previous section, there is a strong inverse relationship between the value of the AUD (compared to USD) and the price for abalone in South Australia. As the majority of South Australian abalone is exported, the price of abalone is strongly influenced by the value of the Australian dollar. Licence holders indicated that a higher exchange rate in 2007/08 meant that they received lower prices for exported abalone.

Fisheries Management

A number of licence holders indicated that they felt the licence fees paid were too high compared to other fisheries. Some licence holders suggested that some of the fisheries management activities could be outsourced to reduce the costs of management.

A summer closure of the fishery was suggested as abalone weigh less during the summer months. Fishing in the summer results in more fish being taken per kilogram compared to fishing in the winter time.

There was some concern among licence holders regarding the level of illegal activity in the fishery. Illegal, unregulated and unreported abalone fishing is an ongoing problem in the fishery that has the potential to cause significant environmental and economic problems, as mentioned in Section 4.1.

Competition from Aquaculture

There was some concern among licence holders regarding competition from abalone aquaculture. Some licence holders indicated that abalone aquaculture developments had been financially unviable and therefore hadn't impacted on the market for wild catch abalone.

Other Comments

A number of licence holders indicated that they are now contracting out services such as diving and boat maintenance rather than employing labour or undertaking these tasks themselves.

One licence holder indicated that the value of the fishing licence is unlikely to continue to increase rapidly unless there is a significant increase in the value of the product.

Licence holders indicated that the industry needed to look at marketing and market development to improve the value of the product.

4.3 Abalone Exports from South Australia

The total quantity of abalone products exported in 2007/08 represented approximately 81 per cent of total South Australian abalone catch, compared 62 per cent in the previous year.⁹

The total value of abalone products exported is approximately 45 per cent greater than the estimated GVP for the fishery as a whole (Tables 4.5 and 3.1). The estimate of GVP reported in Table 3.1 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.

Table 4.5 and the associated data in Appendix Tables 2.1 and 2.2 provide a breakdown of total abalone exports from SA by country of destination for 2005/06 to 2007/08. The most significant export destination in 2007/08 was Hong Kong, accounting for 71 per cent of the total quantity and 76 per cent of the total value of exports.

⁹ Export data only include product that is exported directly from South Australia. Therefore, product that is shipped interstate prior to export is not included. Export data could also include abalone grown in aquaculture in addition to wild caught abalone.

Table 4.5 Abalone exports from SA, by country of destination, 2005/06 to 2007/08

Destination	2005/06		2006/07		2007/08	
	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)
Canada	14,036	1,921	11,246	1,457	27,005	1,909
China	7,756	1,572	1,835	397	1,679	313
Hong Kong	254,022	32,624	382,190	40,880	515,617	34,708
Japan	70,990	6,022	86,948	5,022	103,297	3,553
Malaysia	2,256	281	4,095	433	11,265	619
Singapore	14,119	1,784	20,337	1,882	18,590	1,565
Taiwan	10,342	1,301	4,319	481	6,490	312
USA	13,475	1,804	21,821	2,782	34,546	2,180
Other	5,613	704	15,275	806	5,100	251
Total	392,608	48,011	548,064	54,141	723,589	45,410

Source: ABS data (unpublished).

Table 4.6 and the associated data in Appendix Tables 2.1 and 2.2 provide a breakdown of total abalone exports from SA by product type. The most significant product exported was preserved abalone, accounting for 65 per cent of the total quantity and 52 per cent of the total value of total exports in 2007/08.

Table 4.6 Abalone exports from SA, by product type, 2005/06 to 2007/08

Product	2005/06		2006/07		2007/08	
	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)
Preserved ^a	232,401	30,360	290,225	29,347	467,724	23,436
Live	0	0	0	0	4,945	160
Frozen Meat	106,062	13,688	146,582	18,064	148,583	15,547
Frozen Whole on Shell	43,913	2,207	77,288	3,786	82,836	3,004
Dried	587	613	10,485	1,513	2,639	2,165
Parboiled - Whole	0	0	9,190	352	4,336	227
Other	9,645	1,143	14,294	1,079	12,526	871
Total	392,608	48,011	548,064	54,141	723,589	45,410

^a 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.).

Source: ABS data (unpublished).

References

- Australian Bureau of Statistics (ABS) 2008, *Consumer Price Index, Australia*, Cat. No. 6401.0.
- Baker, D. and Pierce, B. 1998, *Reassessment of the Gross Economic Value of the South Australian Inland Fisheries Harvest*, SARDI Aquatic Sciences.
- Brown, D. 1997, *Australian Fisheries Surveys Report: Physical and Financial Performance in Selected Australian Fisheries 1994-95 to 1996-97*, ABARE Report, Canberra.
- Chick, R.C. Turich, N. and Mayfield, S. 2007, *Western Zone Abalone Fishery (Region B)*, fishery status report to Primary Industries and Resources South Australia, September.
- Chick, R.C. Turich, N. and Mayfield, S. 2008, *Western Zone Abalone Fishery (Region A)*, fishery status report to Primary Industries and Resources South Australia, June.
- EconSearch 1999, *Economic Indicators for the South Australian Abalone Fishery 1997/98*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, February.
- EconSearch 2000, *Economic Indicators for the South Australian Abalone Fishery 1998/99*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, February.
- EconSearch 2001, *Economic Indicators for the South Australian Abalone Fishery 1999/00*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, February.
- EconSearch 2002, *Economic Indicators for the South Australian Abalone Fishery 2000/01*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, July.
- EconSearch 2003, *Economic Indicators for the South Australian Abalone Fishery 2001/02*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, March.
- EconSearch 2004, *Economic Indicators for the South Australian Abalone Fishery 2002/03*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, April.
- EconSearch 2005a, *Economic Indicators for the South Australian Abalone Fishery 2003/04*, report prepared for Primary Industries and Resources South Australia, PIRSA, Adelaide, August.
- EconSearch 2005b, *Quantifying the Economic Contribution of Regional South Australia*, report prepared for Regional Communities Consultative Council, Local Government Association of SA and Regional Development SA, May..
- EconSearch 2006, *Economic Indicators for the South Australian Abalone Fishery 2004/05*, report prepared for Primary Industries and Resources South Australia, Adelaide, May.
- EconSearch 2007, *Economic Indicators for the South Australian Abalone Fishery 2005/06*, report prepared for Primary Industries and Resources South Australia, Adelaide, April.

EconSearch 2008a, *Economic Indicators for the South Australian Abalone Fishery 2006/07*, report prepared for Primary Industries and Resources South Australia, Adelaide, June.

EconSearch 2008b, *Economic Indicators for the Commercial Fisheries of South Australia, Summary Report, 2006/07*, report prepared for Primary Industries and Resources South Australia, Adelaide, September.

Marine and Coastal Community Network (MCCN), 2008a, South Australian E-Bulletin, *Abalone Offences*, June.

Marine and Coastal Community Network, 2008b, South Australian E-Bulletin, *Men fined for abalone catch*, April.

Mayfield, S. Hogg, A. and Saunders, T.M. 2007, *Southern Zone Abalone Fishery*, fishery assessment report to Primary Industries and Resources South Australia, July.

Mayfield, S. Carlson, I.J. and Chick, R.C. 2008, *Central Zone Abalone Fishery*, fishery assessment report to Primary Industries and Resources South Australia, October.

Reserve Bank of Australia, 2008, *Exchange Rates – Daily Statistics*.

Disclaimer

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Appendix 1 Economic Impact of the South Australian Abalone Fishery, 2006/07

Appendix Table 1.1 The economic impact of the Abalone fishing industry in South Australia, 2006/07

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	31.5	47.5%	123	39.7%	9.1	49.5%	25.2	60.7%
Processing	2.1	3.1%	6	2.1%	0.3	1.7%	0.5	1.2%
Transport	1.6	2.4%	7	2.4%	0.5	2.8%	0.8	1.8%
Retail	0.0	0.0%	0	0.0%	0.0	0.0%	0.0	0.0%
Food services	0.2	0.3%	2	0.5%	0.1	0.3%	0.1	0.2%
Capital expenditure ^b	1.2	1.8%	8	2.5%	0.3	1.8%	0.5	1.2%
Total Direct ^c	36.6	53.3%	145	44.7%	10.3	54.3%	27.0	63.9%
Flow-on effects								
Trade	4.3	6.4%	47	15.2%	1.6	8.7%	2.0	4.8%
Manufacturing	5.9	8.9%	18	6.0%	0.9	4.7%	1.4	3.3%
Business Services	3.4	5.2%	20	6.5%	1.3	6.8%	1.6	4.0%
Transport	1.3	2.0%	6	2.0%	0.4	2.3%	0.6	1.5%
Other Sectors	14.9	22.5%	72	23.2%	3.9	21.3%	8.9	21.4%
Total Flow-on ^c	29.8	44.9%	163	52.8%	8.1	43.9%	14.5	35.0%
Total ^c	66.4	100.0%	308	100.0%	18.4	100.0%	41.5	100.0%
Total/Direct	1.8	-	2.1	-	1.8	-	1.5	-
Total/Tonne	\$75,200	-	0.35	-	\$20,800	-	\$46,900	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 89 full-time and 68 part-time jobs, that is, 156 jobs in aggregate.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

Appendix Table 1.2 The economic impact of the Abalone fishing industry in the Eyre region, 2006/07

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	31.5	67.0%	123	54.3%	9.1	68.3%	25.2	77.0%
Processing	2.1	4.4%	10	4.2%	0.4	2.9%	0.6	1.8%
Transport	0.4	0.8%	2	0.9%	0.1	1.0%	0.2	0.6%
Retail	0.0	0.0%	0	0.0%	0.0	0.0%	0.0	0.0%
Food services	0.0	0.0%	0	0.0%	0.0	0.0%	0.0	0.0%
Capital expenditure ^b	0.8	1.6%	7	3.1%	0.3	1.9%	0.4	1.2%
Total Direct ^c	34.8	72.2%	141	59.5%	9.9	72.2%	26.3	79.4%
Flow-on effects								
Trade	2.4	5.0%	30	13.5%	0.9	6.6%	1.1	3.4%
Manufacturing	1.7	3.5%	8	3.4%	0.3	2.3%	0.5	1.4%
Business Services	1.2	2.5%	8	3.5%	0.4	3.1%	0.6	1.7%
Transport	0.6	1.2%	3	1.4%	0.2	1.4%	0.3	0.9%
Other Sectors	6.5	13.9%	35	15.7%	1.6	12.4%	3.9	12.0%
Total Flow-on ^c	12.3	26.1%	85	37.4%	3.4	25.9%	6.4	19.4%
Total ^c	47.1	100.0%	226	100.0%	13.3	100.0%	32.7	100.0%
Total/Direct	1.4	-	1.6	-	1.3	-	1.2	-
Total/Tonne	\$53,300	-	0.26	-	\$15,000	-	\$37,000	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 89 full-time and 68 part-time jobs, that is, 156 jobs in aggregate.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

Appendix 2 Abalone Exports from South Australia, 2007/08

Appendix Table 2.1 Abalone exports from South Australia, quantity (kg), 2007/08

	Preserved ^a	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
Canada	17,811	0	9,090	0	0	0	104	27,005
China	0	0	863	330	486	0	0	1,679
France	730	0	0	0	0	0	0	730
Hong Kong	372,060	4,581	118,257	5,925	1,415	1,869	11,510	515,617
Japan	14,151	200	11,210	75,701	0	2,035	0	103,297
Macau	2,210	0	0	0	0	0	0	2,210
Malaysia	9,254	0	120	880	99	0	912	11,265
Singapore	16,634	44	885	0	595	432	0	18,590
Taiwan	6,370	120	0	0	0	0	0	6,490
Thailand	2,160	0	0	0	0	0	0	2,160
USA	26,344	0	8,158	0	44	0	0	34,546
Total	467,724	4,945	148,583	82,836	2,639	4,336	12,526	723,589

^a Based on the assumption that the average weight per carton is 6.5kg (David Pickles, Dover Fisheries pers. comm.).

Source: ABS data (unpublished).

Appendix Table 2.2 Abalone exports from South Australia, value (\$'000 fob), 2007/08

	Preserved	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
Canada	892	0	1,006	0	0	0	12	1,909
China	0	0	100	10	203	0	0	313
France	32	0	0	0	0	0	0	32
Hong Kong	18,730	145	13,013	578	1,291	131,909	820	34,708
Japan	679	9	408	2,380	0	77,242	0	3,553
Macau	128	0	0	0	0	0	0	128
Malaysia	419	0	13	36	113	0	39	619
Singapore	924	2	102	0	519	17.69	0	1,565
Taiwan	307	5	0	0	0	0	0	312
Thailand	91	0	0	0	0	0	0	91
USA	1,235	0	906	0	40	0	0	2,180
Total	23,436	160	15,547	3,004	2,165	227	871	45,410

Source: ABS data (unpublished).

Appendix 3 Summary Economic Indicators for South Australian Commercial Fisheries

Appendix Table 3.1 Commercial fisheries catch, South Australia, 1990/91 to 2006/07 (tonnes)

Year	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lobster	Nth'n Zone Rock Lobster	Blue Swimmer Crabs	Lakes and Coorong ^a	Sardines	Other Marine Species	Total SA Fisheries ^b
1990/91	863	134	1,951	1,562	1,104	434	2,442	n.a.	7,108	15,598
1991/92	885	0	2,155	1,940	1,222	425	3,143	145	7,750	17,665
1992/93	869	0	1,645	1,754	1,064	511	2,640	1,230	7,499	17,212
1993/94	802	226	1,693	1,669	930	544	2,992	2,377	6,719	17,952
1994/95	851	148	1,911	1,720	891	608	2,884	2,803	9,744	21,560
1995/96	902	258	2,013	1,684	903	655	2,720	3,708	6,301	19,144
1996/97	903	211	1,813	1,635	893	464	2,657	3,428	6,507	18,511
1997/98	812	267	2,492	1,680	942	469	2,595	6,041	5,526	20,824
1998/99	933	336	2,425	1,713	1,016	501	2,355	4,465	4,964	18,708
1999/00	889	400	2,016	1,717	1,001	549	1,995	3,836	4,840	17,243
2000/01	867	384	2,603	1,716	846	556	2,293	7,368	5,132	21,765
2001/02	850	322	2,288	1,717	675	559	1,875	12,165	4,644	25,095
2002/03	890	232	1,508	1,766	595	583	2,030	21,741	4,048	33,393
2003/04	879	172	1,958	1,896	504	611	2,120	33,160	3,712	45,012
2004/05	902	213	1,960	1,897	446	632	2,198	56,952	3,810	69,010
2005/06	896	179	1,891	1,889	476	648	2,352	28,626	3,186	40,143
2006/07	883	209	2,024	1,894	492	637	2,443	30,355	2,978	41,915

^a Excludes the River fishery for the years 2003/04 to 2006/07.

^b Excludes aquaculture, south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2008b)

Appendix Table 3.2 Commercial fisheries gross value of production, South Australia, 1990/91 to 2006/07 (\$m)

Year	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lobster	Nth'n Zone Rock Lobster	Blue Swimmer Crabs ^a	Inland Waters ^b	Sardines	Other Marine Species ^c	Total SA Fisheries ^d
1990/91	14.0	1.7	20.0	26.7	18.2	1.6	2.3	na	17.8	102.4
1991/92	15.1	0.0	19.7	36.3	21.4	1.4	2.6	0.2	21.3	117.9
1992/93	23.7	0.0	19.7	34.8	20.5	1.6	5.3	0.8	20.3	126.7
1993/94	27.2	3.3	20.9	43.2	23.4	1.8	5.6	1.4	19.2	146.0
1994/95	22.8	1.9	22.6	48.6	25.5	2.2	6.3	1.6	24.5	156.1
1995/96	22.5	3.5	22.9	44.6	23.8	2.5	6.0	2.5	21.8	150.1
1996/97	25.2	2.9	22.2	47.0	24.4	2.1	6.3	2.2	20.6	152.9
1997/98	26.9	4.1	29.2	50.9	27.7	2.2	5.5	3.8	16.7	166.9
1998/99	27.2	5.0	34.6	47.2	26.7	2.2	6.3	2.5	18.0	169.7
1999/00	32.4	7.6	36.1	51.2	29.8	2.5	7.5	2.7	19.2	189.1
2000/01	40.0	6.7	46.0	55.1	28.0	3.1	7.8	5.2	20.2	212.0
2001/02	34.8	5.9	41.5	65.7	26.2	3.5	6.0	8.5	18.5	210.5
2002/03	36.3	4.2	28.2	63.8	18.8	3.6	5.1	17.8	20.4	198.3
2003/04	31.6	3.1	40.4	49.3	12.0	3.6	5.4	22.5	21.9	189.9
2004/05	33.8	3.8	32.0	54.4	11.6	3.6	5.5	28.5	20.9	194.1
2005/06	33.9	2.9	34.0	65.7	15.4	5.2	5.9	16.0	17.4	196.6
2006/07	31.5	3.3	39.4	78.8	18.0	5.6	7.3	18.5	19.8	222.3

^a SARDI estimates for the years 1990/91 and 1991/92, revalued SARDI estimates using Baker and Pierce (1998) for the years 1992/93 to 2001/02 and survey based readjustment factors for 2002/03 to 2005/06. Excludes the River fishery for the years 2003/04 to 2006/07.

^b SARDI estimates for the years 1990/91 to 2002/03, revalued SARDI estimates for 2003/04 to 2006/07 using weighted average prices from Sydney and Melbourne fish markets and price data obtained from fishers.

^c Excludes aquaculture, south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2008b).

Appendix Table 3.3 Cost of management in South Australian commercial fisheries, 2006/07

	Licence Fees (\$'000)	GVP (\$'000)	Fees/ GVP (%)	Catch ('000kg)	Fees/ Catch (\$/kg)	Licence Holders (no.)	Fees/ Licence (\$/licence)
Abalone	2,392	31,529	7.6%	883	\$2.71	35	\$68,339
GSV Prawns	257	3,270	7.9%	209	\$1.23	10	\$25,715
SG & WC Prawns	914	39,386	2.3%	2,024	\$0.45	42	\$21,761
Sth'n Zone Rock Lobster	2,976	78,791	3.8%	1,894	\$1.57	181	\$16,442
Nth'n Zone Rock Lobster	1,164	17,954	6.5%	492	\$2.37	68	\$17,112
Blue Crabs - Pots	267	5,328	5.0%	595	\$0.45	8	\$33,325
Blue Crabs – Marine Scale	25	301	8.2%	42	\$0.59	6	\$4,125
Lakes and Coorong ^a	299	7,330	4.1%	2,383	\$0.13	37	\$8,094
Marine Scalefish	1,460	19,847	7.4%	2,978	\$0.49	349	\$4,184
Sardines	804	18,517	4.3%	30,355	\$0.03	14	\$57,410
Total SA	10,557	222,253	4.8%	41,855	\$0.25	750	\$14,077

^a Excludes the River fishery.

Source: EconSearch (2008b).

Appendix Table 3.4 Financial performance in South Australian commercial fisheries, 2006/07, (\$'000) (average per boat)

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs ^a	Marine Scalefish ^b	Sardines	Lakes and Coorong
(1) Total Boat Gross Income	946.9	321.8	870.3	452.6	347.8	5,628.8	95.1	1,315.9	216.3
Variable Costs									
Fuel	15.8	24.8	57.9	23.9	44.9	600.7	11.2	199.5	14.8
Repairs & Maintenance	38.7	14.0	48.5	21.4	16.9	533.3	8.7	98.8	6.8
Bait/Ice	0.3	0.0	0.0	10.9	14.8	66.9	2.3	2.3	1.4
Provisions	9.5	0.8	3.5	0.4	4.4	11.1	0.0	8.1	0.2
Labour - paid	263.6	96.9	296.0	91.7	107.0	1,280.3	12.2	527.3	33.2
(2) - unpaid	4.3	8.0	7.7	32.4	32.2	211.6	25.1	3.3	41.8
Other	10.7	9.6	21.8	0.7	5.3	18.5	0.0	33.5	16.2
(3) Total Variable Costs	342.9	154.2	435.4	181.5	225.5	2,722.5	59.3	872.8	114.5
Fixed Costs									
Licence Fee	67.4	26.9	24.9	18.7	21.3	291.4	5.0	56.4	9.8
Insurance	7.0	19.3	20.3	6.5	8.9	75.4	1.9	30.6	1.6
(4) Interest	5.3	31.1	44.8	23.6	34.2	650.1	4.5	84.9	5.3
(5) Labour - unpaid	18.9	18.3	8.9	7.6	14.1	44.4	4.7	10.2	7.0
(6) Leasing	0.0	0.0	0.0	1.9	12.5	0.0	0.0	23.4	0.0
Legal & Accounting	15.0	7.7	8.0	2.6	2.9	43.8	1.2	7.8	2.0
Telephone etc.	3.7	1.6	6.0	1.7	2.6	22.1	1.3	1.7	2.2
Slipping & Mooring	0.8	4.8	6.4	1.7	2.5	32.2	0.8	17.0	0.1
Travel	4.4	0.2	2.8	0.8	1.1	28.0	0.5	0.8	1.0
Office & Admin	9.2	0.5	7.5	2.7	3.8	86.5	4.8	6.3	4.9
(7) Total Fixed Costs	131.7	110.5	129.7	67.8	103.9	1,273.9	24.9	239.2	33.8
(8) Total Boat Cash Costs (3 + 7)	474.6	264.6	565.2	249.3	329.4	3,996.4	84.2	1,112.0	148.3
Boat Gross Margin (1 - 3)	603.9	167.7	434.9	271.1	122.3	2,906.3	35.7	443.1	101.8
(9) Total Unpaid Labour (2 + 5)	23.2	26.3	16.6	40.0	46.3	256.1	29.8	13.6	48.8
Gross Operating Surplus	495.4	83.5	321.8	243.4	64.7	1,888.5	40.7	217.5	116.9
(10) Boat Cash Income (1 - 8)	472.2	57.2	305.2	203.3	18.4	1,632.4	10.9	203.9	68.0
(11) Depreciation	66.3	129.8	142.2	47.9	63.0	349.3	18.3	211.7	22.0
(12) Boat Business Profit (10 - 11)	405.9	-72.6	163.0	155.4	-44.6	1,283.1	-7.4	-7.8	46.1
(13) Profit at Full Equity (12 + 4 + 6)	411.3	-41.6	207.8	180.9	2.1	1,933.1	-2.9	100.5	51.3
Boat Capital									
(14) Fishing Gear & Equip	332.7	960.9	1,289.6	351.5	490.4	3,468.5	130.1	2,763.6	148.1
Licence Value	7,947.3	2,695.3	4,966.9	3,079.3	1,577.5	28,798.6	184.2	3,318.7	214.0
(15) Total Boat Capital	8,280.0	3,656.2	6,256.5	3,430.8	2,067.9	32,267.1	314.3	6,082.3	362.1
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	123.6%	-4.3%	16.1%	51.5%	0.4%	55.7%	-2.2%	3.6%	34.7%
Rate of Return on Total Boat Capital (13 / 15 * 100)	5.0%	-1.1%	3.3%	5.3%	0.1%	6.0%	-0.9%	1.7%	14.2%

^a Financial performance for blue crab are on a whole fishery basis.

^b Excludes the Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

^c Earnings before interest and tax.

Source: EconSearch (2008b).

Appendix Table 3.5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2006/07

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish ^a	Sardines	Lakes and Coorong
Variable Costs									
Fuel	3%	9%	10%	10%	14%	15%	13%	18%	10%
Repairs & Maintenance	8%	5%	9%	9%	5%	13%	10%	9%	5%
Bait/Ice	0%	0%	0%	4%	5%	2%	3%	0%	1%
Provisions	2%	0%	1%	0%	1%	0%	0%	1%	0%
Labour - paid	56%	37%	52%	37%	32%	32%	14%	47%	22%
- unpaid	1%	3%	1%	13%	10%	5%	30%	0%	28%
Other	2%	4%	4%	0%	2%	0%	0%	3%	11%
Fixed Costs									
Licence Fee	14%	10%	4%	7%	6%	7%	6%	5%	7%
Insurance	1%	7%	4%	3%	3%	2%	2%	3%	1%
Interest	1%	12%	8%	9%	10%	16%	5%	8%	4%
Labour - unpaid	4%	7%	2%	3%	4%	1%	6%	1%	5%
Leasing	0%	0%	0%	1%	4%	0%	0%	2%	0%
Legal & Accounting	3%	3%	1%	1%	1%	1%	1%	1%	1%
Telephone etc.	1%	1%	1%	1%	1%	1%	2%	0%	2%
Slipping & Mooring	0%	2%	1%	1%	1%	1%	1%	2%	0%
Travel	1%	0%	0%	0%	0%	1%	1%	0%	1%
Office & Admin	2%	0%	1%	1%	1%	2%	6%	1%	3%
Total Variable Costs	72%	58%	77%	73%	68%	68%	70%	78%	77%
Total Fixed Costs	28%	42%	23%	27%	32%	32%	30%	22%	23%
Total Cash Costs	100%	100%	100%	100%	100%	100%	100%	100%	100%

^a Excludes Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2008b).

Appendix Table 3.6 Economic impacts of South Australian commercial fisheries, 2006/07

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries ^a
Output (\$m)										
Direct										
Fishing	31.5	3.3	39.4	78.8	18.0	5.6	19.8	18.5	7.3	222.3
Downstream ^b	5.1	2.0	17.5	24.6	6.8	3.1	9.5	3.3	5.9	77.7
All other sectors (indirect)	29.8	6.0	52.4	88.3	18.0	8.9	43.4	24.6	14.8	286.2
Total	66.4	11.3	109.3	191.6	42.7	17.6	72.8	46.4	28.1	586.2
Total/Direct	1.8	2.1	1.9	1.9	2.4	2.0	2.5	2.1	2.1	2.0
Total/Tonne (\$)	\$75,100	\$54,100	\$54,000	\$101,100	\$119,200	\$27,600	\$24,400	\$1,500	\$11,700	\$13,023
Contribution to GSP (\$m)										
Direct										
Fishing	25.2	2.1	30.3	61.1	7.8	3.7	6.1	11.4	5.0	152.6
Downstream	1.8	0.8	7.2	9.7	2.7	1.1	3.5	1.5	2.3	30.6
All other sectors (indirect)	14.5	2.9	25.2	42.6	16.3	4.2	20.4	11.7	7.1	145.0
Total	41.5	5.9	62.8	113.4	26.9	8.9	30.0	24.5	14.5	328.3
Total/Direct	1.5	2.0	1.7	1.6	2.5	1.9	3.1	1.9	2.0	1.8
Total/Tonne (\$)	\$46,900	\$28,200	\$31,000	\$59,800	\$54,500	\$13,900	\$10,066	\$807	\$6,096	\$7,293
Employment (fte jobs) ^c										
Direct										
Fishing	123	37	217	424	185	29	540	63	74	1,692
Downstream	23	20	167	140	41	17	73	20	46	547
All other sectors (indirect)	163	33	289	479	186	48	235	134	82	1,647
Total	308	89	673	1,043	412	93	848	217	201	3,885
Total/Direct	2.1	1.6	1.8	1.8	1.8	2.0	1.4	2.6	1.7	1.7
Total/Tonne	0.35	0.43	0.33	0.55	0.84	0.15	0.28	0.01	0.08	0.09
Household Income (\$m)										
Direct										
Fishing	9.1	1.2	12.3	22.7	6.7	1.5	6.1	6.7	3.2	69.5
Downstream	1.2	0.6	5.2	6.7	1.9	0.7	2.5	1.0	1.7	21.5
All other sectors (indirect)	8.0	1.6	14.0	23.2	9.0	2.3	11.4	6.4	4.0	80.1
Total	18.4	3.4	31.4	52.6	17.6	4.5	20.1	14.1	8.9	171.1
Total/Direct	1.8	1.9	1.8	1.8	2.0	2.1	2.3	1.8	1.8	1.9
Total/Tonne (\$)	\$20,700	\$16,500	\$15,500	\$27,700	\$35,800	\$7,100	\$6,700	\$400	\$3,700	\$3,801

^a Excludes the River fishery and the Commonwealth managed fisheries: south-east non-trawl, tuna and deep water trawl.

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

^c Full time equivalent jobs. Direct employment in the fishing sector was comprised of 642 full-time and 1,375 part-time, that is, 2,017 jobs in total.

Source: EconSearch (2008b).

Appendix Table 3.7 Economic rent in South Australian commercial fisheries, 2006/07 (\$m)

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries ^a
Gross Income	33.1	3.3	39.4	78.8	18.0	5.6	19.8	18.5	7.1	223.7
Less Labour	8.5	1.2	13.2	21.8	7.7	1.4	8.8	7.6	2.8	73.0
Less Materials & Services	6.4	1.1	9.5	16.2	7.3	1.8	9.1	6.5	2.0	60.0
Less Depreciation	2.3	1.3	6.4	8.0	3.1	0.3	3.8	3.0	0.7	29.1
Less Opportunity Cost of Capital (@10%)	1.2	1.0	5.8	5.9	2.4	0.3	2.7	3.9	0.5	23.7
Economic Rent	14.8	-1.4	4.5	26.9	-2.6	1.7	-4.5	-2.5	1.1	37.9

^a Excludes the River fishery and the Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2008b).

Appendix 4 Financial Performance Indicators, 1997/98 to 2004/05

Appendix Table 4.1 Financial performance in the SA Abalone fishery, 1997/98 to 1999/00 (average per boat) ^a

	1997/98		1998/99		1999/00	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$751,286		\$776,029		\$925,543	
Variable Costs						
Fuel	\$11,483	3%	\$11,808	3%	\$15,420	4%
Repairs & Maintenance ^c	\$21,524	6%	\$23,824	7%	\$21,257	5%
Bait/Ice	\$176	0%	\$195	0%	\$174	0%
Provisions	\$1,532	0%	\$1,696	0%	\$1,513	0%
Labour - paid	\$196,954	55%	\$209,643	59%	\$257,135	64%
(2) - unpaid ^d	\$12,463	3%	\$13,266	4%	\$16,271	4%
Other	\$3,909	1%	\$3,960	1%	\$4,060	1%
(3) Total Variable Costs	\$248,041	70%	\$264,392	75%	\$315,830	78%
Fixed Costs						
Licence Fee	\$66,294	19%	\$48,033	14%	\$45,278	11%
Insurance	\$4,375	1%	\$4,433	1%	\$4,544	1%
(4) Interest	\$11,969	3%	\$11,048	3%	\$12,232	3%
(5) Labour - unpaid ^d	\$7,547	2%	\$7,777	2%	\$7,998	2%
Legal & Accounting	\$5,056	1%	\$5,123	1%	\$5,252	1%
Telephone etc.	\$2,926	1%	\$2,965	1%	\$3,039	1%
Slipping & Mooring	\$355	0%	\$360	0%	\$369	0%
Travel	\$2,953	1%	\$2,992	1%	\$3,067	1%
Office & Admin	\$6,605	2%	\$6,692	2%	\$6,860	2%
(6) Total Fixed Costs	\$108,080	30%	\$89,422	25%	\$88,639	22%
(7) Total Boat Cash Costs (3 + 6)	\$356,121	100%	\$353,813	100%	\$404,470	100%
Boat Gross Margin (1 - 3)	\$503,245		\$511,637		\$609,712	
(8) Total Unpaid Labour (2 + 5)	\$20,010		\$21,043		\$24,269	
Gross Operating Surplus (1 - 7 + 8)	\$415,175		\$443,258		\$545,342	
(9) Boat Cash Income (1 - 7)	\$395,165		\$422,215		\$521,073	
(10) Depreciation	\$17,971		\$18,207		\$18,665	
(11) Boat Business Profit (9 - 10)	\$377,194		\$404,008		\$502,408	
(12) Profit at Full Equity (11 + 4)	\$389,163		\$415,056		\$514,640	
Boat Capital						
(13) Fishing Gear & Equip	\$117,138		\$118,679		\$121,665	
Licence Value ^d	\$3,741,667		\$3,990,620		\$4,948,080	
(14) Total Boat Capital	\$3,858,804		\$4,109,299		\$5,069,745	
Rate of Return on Fishing Gear & Equip (12 / 12 * 100)	332.2%		349.7%		423.0%	
Rate of Return on Total Boat Capital (12 / 14 * 100)	10.1%		10.1%		10.2%	

^a Financial performance estimates are based on the October 1998 survey of licence holders

^b Total boat cash costs.

^c 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).

^d 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: EconSearch analysis.

Appendix Table 4.2 Financial performance in the SA Abalone fishery, 2000/01 to 2002/03 (average per boat) ^a

	2000/01		2001/02		2002/03	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$1,143,171		\$993,000		\$1,036,829	
Variable Costs						
Fuel	\$10,862	2%	\$10,764	3%	\$11,478	2%
Repairs & Maintenance ^c	\$24,315	6%	\$25,164	6%	\$27,151	6%
Bait/Ice	\$126	0%	\$130	0%	\$141	0%
Provisions	\$944	0%	\$977	0%	\$1,054	0%
Labour - paid	\$294,424	67%	\$280,039	66%	\$320,791	68%
(2) - unpaid ^d	\$12,583	3%	\$11,295	3%	\$12,252	3%
Other	\$3,217	1%	\$3,306	1%	\$3,439	1%
(3) Total Variable Costs	\$346,471	79%	\$331,675	78%	\$376,305	79%
Fixed Costs						
Licence Fee	\$45,441	10%	\$48,712	11%	\$52,372	11%
Insurance	\$4,568	1%	\$4,694	1%	\$4,882	1%
(4) Interest	\$3,189	1%	\$2,997	1%	\$2,958	1%
(5) Labour - unpaid ^d	\$15,382	4%	\$15,896	4%	\$15,896	3%
Legal & Accounting	\$5,953	1%	\$6,118	1%	\$6,363	1%
Telephone etc.	\$3,057	1%	\$3,142	1%	\$3,268	1%
Slipping & Mooring	\$437	0%	\$449	0%	\$467	0%
Travel	\$4,723	1%	\$4,854	1%	\$5,049	1%
Office & Admin	\$7,178	2%	\$7,377	2%	\$7,673	2%
(6) Total Fixed Costs	\$89,928	21%	\$94,240	22%	\$98,929	21%
(7) Total Boat Cash Costs (3 + 6)	\$436,400	100%	\$425,915	100%	\$475,234	100%
Boat Gross Margin (1 - 3)	\$796,700		\$661,325		\$660,524	
(8) Total Unpaid Labour (2 + 5)	\$27,964		\$27,192		\$28,148	
Gross Operating Surplus (1 - 7 + 8)	\$734,736		\$594,277		\$589,743	
(9) Boat Cash Income (1 - 7)	\$706,771		\$567,085		\$561,595	
(10) Depreciation	\$34,950		\$35,919		\$37,359	
(11) Boat Business Profit (9 - 10)	\$671,821		\$531,166		\$524,236	
(12) Profit at Full Equity (11 + 4)	\$675,010		\$534,163		\$527,194	
Boat Capital						
(13) Fishing Gear & Equip	\$161,955		\$166,443		\$173,116	
Licence Value ^d	\$5,700,000		\$4,951,226		\$5,169,761	
(14) Total Boat Capital	\$5,861,955		\$5,117,669		\$5,342,876	
Rate of Return on Fishing Gear & Equip (12 / 12 * 100)	416.8%		320.9%		304.5%	
Rate of Return on Total Boat Capital (12 / 14 * 100)	11.5%		10.4%		9.9%	

^a Financial performance estimates are based on the April 2002 survey of licence holders

^{b-d} See notes for Appendix Table 4.1.

Source: EconSearch analysis.

Appendix Table 4.3 Financial performance in the SA Abalone fishery, 2003/04 and 2004/05 (average per boat)^a

	2003/04		2004/05	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$902,343		\$1,015,691	
Variable Costs				
Fuel	\$11,436	2%	\$14,369	3%
Repairs & Maintenance ^c	\$27,410	6%	\$35,867	8%
Bait/Ice	\$142	0%	\$280	0%
Provisions	\$1,064	0%	\$8,767	2%
Labour - paid	\$303,678	65%	\$236,945	54%
(2) - unpaid ^d	\$12,252	3%	\$4,309	1%
Other	\$3,542	1%	\$10,109	2%
(3) Total Variable Costs	\$359,525	77%	\$310,645	71%
Fixed Costs				
Licence Fee	\$59,454	13%	\$65,060	15%
Insurance	\$5,030	1%	\$6,618	2%
(4) Interest	\$3,035	1%	\$4,922	1%
(5) Labour - unpaid ^d	\$15,896	3%	\$18,196	4%
Legal & Accounting	\$6,555	1%	\$14,226	3%
Telephone etc.	\$3,367	1%	\$3,540	1%
Slipping & Mooring	\$481	0%	\$718	0%
Travel	\$5,201	1%	\$4,164	1%
Office & Admin	\$7,904	2%	\$8,735	2%
(6) Total Fixed Costs	\$106,922	23%	\$126,179	29%
(7) Total Boat Cash Costs (3 + 6)	\$466,447	100%	\$436,825	100%
Boat Gross Margin (1 - 3)	\$542,818		\$705,046	
(8) Total Unpaid Labour (2 + 5)	\$28,148		\$22,505	
Gross Operating Surplus (1 - 7 + 8)	\$464,044		\$601,371	
(9) Boat Cash Income (1 - 7)	\$435,896		\$578,866	
(10) Depreciation	\$38,485		\$54,250	
(11) Boat Business Profit (9 - 10)	\$397,411		\$524,616	
(12) Profit at Full Equity (11 + 4)	\$400,446		\$529,538	
Boat Capital				
(13) Fishing Gear & Equip	\$178,332		\$272,202	
Licence Value ^d	\$4,499,198		\$8,525,000	
(14) Total Boat Capital	\$4,677,530		\$8,797,202	
Rate of Return on Fishing Gear & Equip (12 / 12 * 100)	224.6%		194.5%	
Rate of Return on Total Boat Capital (12 / 14 * 100)	8.6%		6.0%	

^a Financial performance estimates for 2003/07 are based on the April 2002 survey of licence holders, estimates for 2004/05 are based on the February-March 2006 survey of licence holders.

^{b-d} See notes for Appendix Table 4.1.

Source: EconSearch analysis.