

Economic Indicators
for the South Australian
Abalone Fishery
2006/07

A report prepared for
Primary Industries and Resources South Australia

Prepared by



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Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
CPI	consumer price index
FMC	Fishery Management Committee
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

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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 tenth 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 report, prepared for 2005/06, provided an update of the 2004/05 economic indicators (EconSearch 2007a).

The objective of this report, *Economic Indicators for the South Australian Abalone Fishery 2006/07*, is to provide an update of the economic indicators based on results of the third licence holder survey, conducted in 2006.

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;
- a summary of factors that effect costs in 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 South Australia (quantity and value).

For purposes of comparison, summary economic indicators for all South Australian commercial fisheries, up to 2005/06, are presented in Appendix 3.

2. Method of Analysis and Definition of Terms

2.1 Survey of Licence Holders in the Fishery, 2004/05

The questionnaire for the 2004/05 survey was based on the previous surveys conducted for 1997/98 and 2000/01.¹ 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 December 2005 information regarding the survey and the report was distributed to licence holders via the Abalone Industry Association of SA newsletter. In February 2006 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. In February and March 2006 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. These licence holders were sent a copy of the survey by mail in March 2006. The 15 completed responses represented 43 per cent of licence holders in the fishery. Thus, the economic indicators for 2004/05 were survey-based estimates.

2.2 Updating the Indicators, 2006/07

The 2006/07 economic indicators for the South Australian Abalone fishery were derived using a range of primary and secondary data and survey-based 2004/05 indicators. The following information was used to adjust the 2005/06 indicators to reflect the fishery's performance in 2006/07.

- SARDI data were used to reflect changes in catch size and its value between 2005/06 and 2006/07. Catch and value data were used to determine the gross income in the fishery.
- Information on change in fishing effort (number of days fished) between 2005/06 and 2006/07 was used to adjust the cost of inputs that were assumed to vary with fishing effort. These inputs included fuel, repairs and maintenance, ice and provisions.
- Price information from input suppliers was used to adjust prices that had changes, for example, fuel.
- The consumer price index (CPI) for Adelaide was used to adjust the cost of inputs to reflect local levels of inflation (ABS 2007).

¹ Surveys conducted for 1997/98 and 2000/01 are described in EconSearch (2005a).

2.3 Definition of Terms²

Gross value of production (GVP) is the total year's catch for the whole fishery valued at the landed beach price.

Gross income (Total boat cash receipts) is the income received by the individual licence holder from the sale of abalone prior to any deductions for freight and selling charges.

Cash costs (Total boat fixed and variable costs) include the payments for hired labour and materials and services (including payments on capital items subject to leasing, rent, interest, licence fees and repairs and maintenance). If family or other labour were unpaid, an estimate of the cost of labour was made based on the time spent on fishing business related activity.

Cash operating surplus (Boat cash income) is the difference between gross income and total cash costs. It has been calculated with the imputed value of unpaid labour included in cash costs.

Depreciation is a non-cash cost representing the wear and tear on capital items during the year. It has been calculated using information on the age, current value and current replacement cost of each item. This was to be used to determine the depreciation rate of fishing equipment.³

Earnings before tax is defined as cash operating surplus less depreciation.

Earnings before interest and tax (Boat business profit) is defined as cash operating surplus less depreciation plus interest.

Capital is defined as the value placed on assets employed by the fishing business. It includes the total gross value of the boat, including the value of the hull, engine and other on-board and shore based plant, equipment and structures. Estimates are also reported for the value of licences.

Rate of return to fishing gear and equipment is calculated by expressing earnings before interest and tax as a percentage of the capital value of fishing gear and equipment. The rate of return to fishing gear and equipment provides an indication of the impact of management changes on the fishery.

Rate of return to total capital is calculated by expressing earnings before interest and tax as a percentage of total capital. This gives a measure of the economic performance of the fishery for those interested in investing in a boat and licence.

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

³ An allowance for depreciation of a capital item was estimated using the formula $(R-C)/A$ where R = replacement cost of the item, C = current value of the item and A = age of the item in years.

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 2006/07. 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 2006/07 (883 tonnes) was just over 2 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 \$31.5 million in 2006/07.

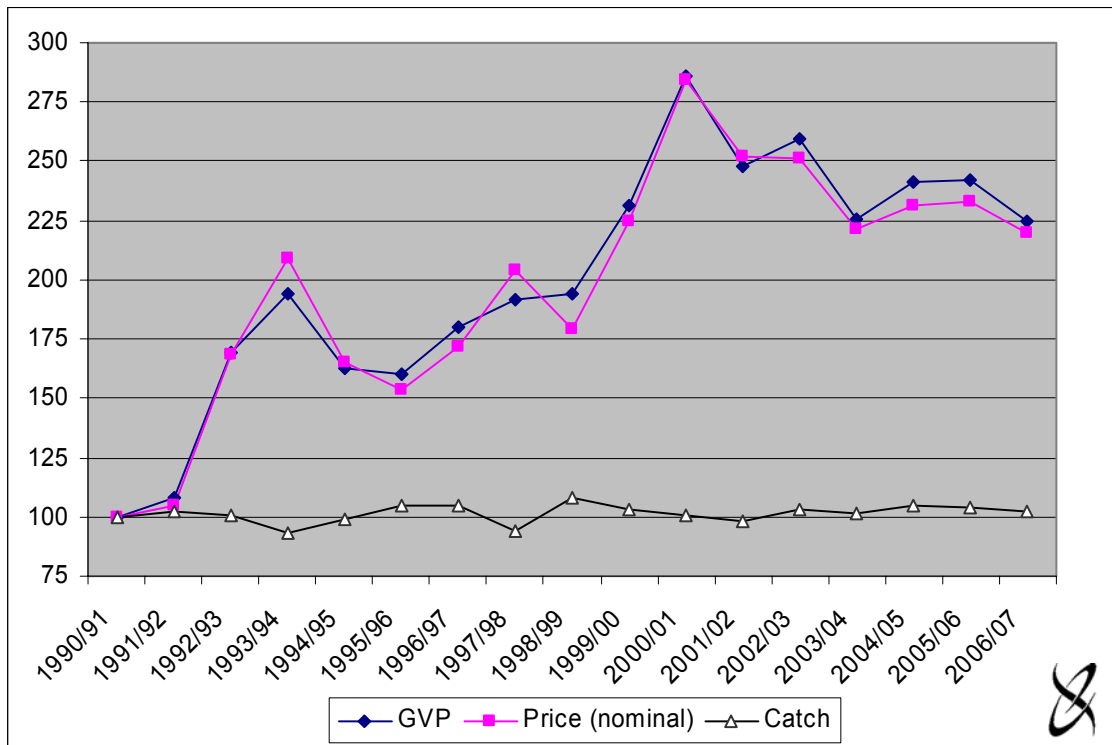
Table 3.1 SA Abalone catch and value of catch, 1990/91 to 2006/07

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

Source: SARDI Aquatic Sciences

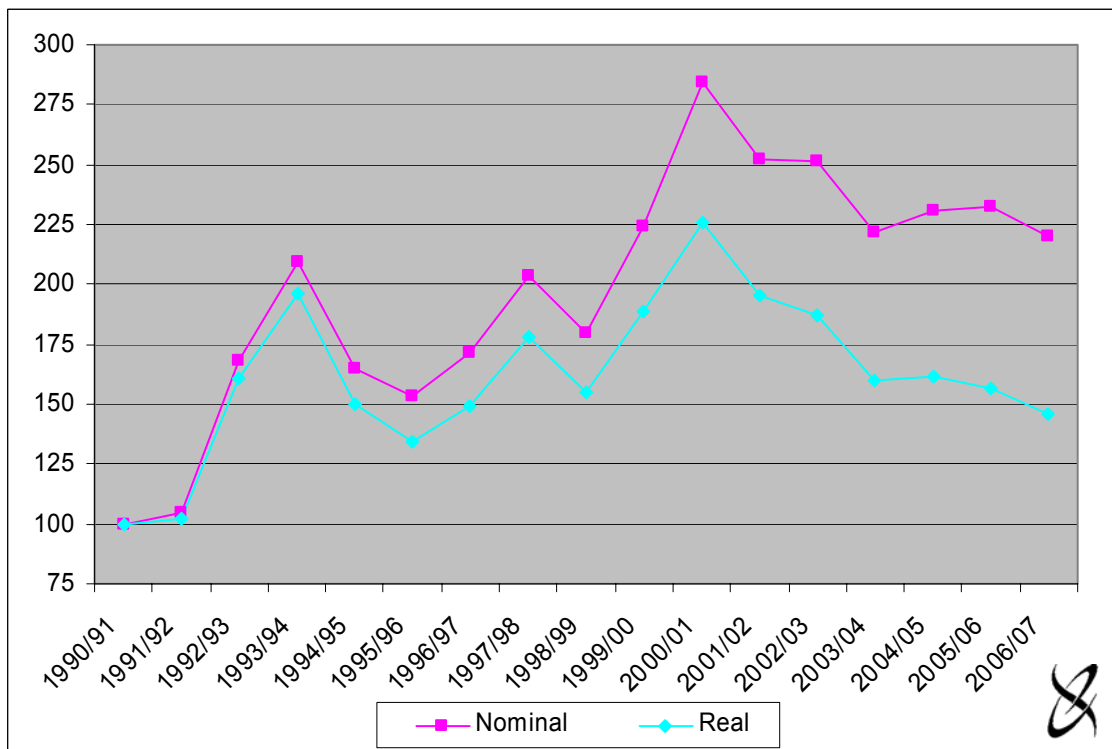
This significant increase in the value of the fishery over the 16-year period 1990/91 to 2006/07 is illustrated in Figure 3.1. As noted above, the nominal value of the abalone catch in 2006/07 was 125 per cent above that in 1990/91. This is principally as a result of a substantial increase in price during the 1990s. Figure 3.1 shows that the average price of abalone in SA has increased over the 16-year period by 120 per cent in nominal terms, despite a slight decrease in 2006/07. 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 \$35.71/kg in 2006/07.

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



Source: SARDI Aquatic Sciences.

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 2007). It enables meaningful comparisons of prices to be made between years.

Source: SARDI Aquatic Sciences and ABS (2007).

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 120 per cent increase in nominal price was equivalent to a 46 per cent real price increase between 1990/91 and 2006/07. This means that the value of the abalone catch in South Australia in 2006/07 was 49 per cent higher in real terms than it was in 1990/91 (125 per cent higher in nominal terms as noted above). However, since the price peak in 2000/01, the real price of abalone has fallen 36 per cent and GVP is 21 per cent lower.

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 2006/07 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 7.6 per cent in 2006/07;
- 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 \$2.71 in 2006/07;
- 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 \$68,339 in 2006/07; 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 2006/07 and 2007/08, the cost per licence holder increased by almost 6 per cent from \$68,339 to \$72,286 per licence holder.

Table 3.2 Cost of management in the SA Abalone fishery, 1996/97 to 2006/07

	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	n.a.	-	n.a.	-	6	\$72,061
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	n.a.	-	n.a.	-	6	\$72,867
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	n.a.	-	n.a.	-	23	\$72,193
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	n.a.	-	n.a.	-	35	\$72,286

Source: PIRSA Fisheries and SARDI Aquatic Sciences.

3.3 Summary of Factors Affecting Costs in the SA Abalone Fishery

The information in Table 3.3 (and similar data for previous years) was used to adjust the 2005/06 financial performance indicators to reflect the costs incurred in the fishery in 2006/07.

Table 3.3 Factors affecting costs in SA Abalone fishery, 2005/06 to 2006/07

	2005/06	2006/07	Change
Total Days Fished ^a	1,849	1,849	0.0%
Price of Fuel - Transportation Index ^b	158.8	160.9	1.3%
Interest charges (%/annum) ^c	8.2%	8.8%	7.3%
CPI Adelaide ^d	157.6	160.3	1.7%

^a SARDI Aquatic Sciences (Angelo Tsolos pers. comm.)

^b ABS transportation index for Adelaide (ABS 2007)

^c RBA indicator lending rate for small business (RBA 2007)

^d Consumer price index for Adelaide (ABS 2007)

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

3.4 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 2002/03 to 2006/07.⁴

Income...

Total recorded abalone catch decreased by less than 2 per cent from 2005/06 to 2006/07. Gross receipts from sale of abalone decreased by almost 7 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 \$947,000 in 2006/07, down from \$1,017,000 per boat in the previous year⁵ (Table 3.4).

Costs...

In 2006/07, for the fishery as a whole, approximately 56 per cent of total cash costs⁶ were attributable to labour costs, by far the largest individual cost item. Labour cost include an imputed wage to operators and other family members who are not paid a wage directly by the business. The average imputed unpaid labour costs for the fishery in 2006/07 was almost \$21,596. The other significant cash costs were licence fees (16 per cent), repairs and maintenance (9 per cent) and fuel (4 per cent) (Table 3.4).

Overall, total cash costs were down by almost \$13,000 per boat on the previous year, a decrease of almost 3 per cent.

Cash Income and Profit...

As noted elsewhere, the labour costs reported in Table 3.4 are comprised of payments to skippers and crew as well as an imputed wage to operators and other family members who are not paid a wage directly by the business. Cash operating surplus was calculated by including the imputed wages for operator and family members as part of cash costs. The average cash operating surplus of surveyed boats was estimated to be approximately \$517,000 in 2006/07, which represents a decrease of approximately 10 per cent when compared with the 2005/06 season (approximately \$574,000).

Cash operating surplus along with the earnings before tax (business profit) indicator gives an indication of the capacity of the operator to remain in the fishery in the short to medium term. In 2006/07, the average earnings before tax per boat were estimated to be approximately \$451,000.

Average earnings before interest and tax was estimated to be \$456,000 in 2006/07, 11 per cent less than the 2005/06 estimate of almost \$513,000 (Table 3.4).

⁴ Similar data for the years 1997/98 to 2001/02 are provided in Appendix 4 of this report.

⁵ Financial performance estimates for the period 2004/05 to 2006/07 were based on different survey samples to earlier years. Some of the variability between these years is, therefore, attributable to sampling variances.

⁶ Fixed and variable costs have not been differentiated; therefore Boat Gross Margin has not been calculated. Boat Gross Margin is available upon request.

Table 3.4 Financial performance in the SA Abalone fishery, 2002/03 to 2006/07 ^a
(average per boat)

	2002/03		2003/04		2004/05		2005/06		2006/07	
	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC
Gross Income	\$1,036,829		\$902,343		\$1,015,691		\$1,016,832		\$946,859	
Costs										
Fuel	\$11,478	3%	\$11,436	3%	\$14,369	3%	\$15,470	3%	\$15,848	4%
R&M	\$27,151	6%	\$27,410	7%	\$35,867	8%	\$37,624	8%	\$38,687	9%
Labour	\$292,399	70%	\$254,472	65%	\$259,450	59%	\$259,742	59%	\$241,867	56%
Licence fee	\$52,372	13%	\$59,454	15%	\$65,060	15%	\$65,408	15%	\$67,360	16%
Insurance	\$4,882	1%	\$5,030	1%	\$6,618	2%	\$6,871	2%	\$6,989	2%
Interest	\$2,958	1%	\$3,035	1%	\$4,922	1%	\$4,983	1%	\$5,347	1%
Admin and Other	\$27,453	7%	\$28,256	7%	\$50,539	12%	\$52,568	12%	\$53,574	12%
Total Cash Costs	\$418,694	100%	\$389,093	100%	\$436,825	100%	\$442,665	100%	\$429,673	100%
Cash Operating Surplus	\$618,135		\$513,250		\$578,866		\$574,167		\$517,186	
Depreciation	\$37,359		\$38,485		\$54,250		\$65,965		\$66,107	
Earnings Before Tax	\$580,776		\$474,765		\$524,616		\$508,202		\$451,079	
Earnings Before Interest & Tax	\$583,734		\$477,801		\$529,538		\$513,185		\$456,427	
Capital										
Fishing Gear & Equipment	\$173,116		\$178,332		\$272,202		\$330,981		\$331,696	
Licence Value ^b	\$5,169,761		\$4,499,198		\$8,525,000		\$8,534,578		\$7,947,273	
Total Capital	\$5,342,876		\$4,677,530		\$8,797,202		\$8,865,559		\$8,278,970	
Rate of Return to Fishing Gear & Equip	337.2%		267.9%		194.5%		155.0%		137.6%	
Rate of Return to Total Capital	10.9%		10.2%		6.0%		5.8%		5.5%	

^a Financial performance estimates for 2000/01 to 2003/04 are based on the April 2002 survey of licence holders. Financial performance estimates for 2004/05 to 2006/07 are based on the February - March 2006 survey of licence holders. Estimates of financial performance for the period 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. These estimates, plus those for 2000/01 and 2001/02, are provided in Appendix 4.

^b The estimated licence value for the period 2001/02 to 2003/04 (average per boat) was based on the licence holders' estimate from the 2002 survey adjusted by changes in average gross income per boat. The estimated licence value for 2004/05 to 2006/07 was based on the licence holders' estimate from the February - March 2006 survey and updated for changes in average gross income per boat.

Source: EconSearch analysis.

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 net profit after depreciation as a percentage of the total capital employed.

The average return on investment for the fishery for the period 2002/03 to 2006/07 is reported in Table 3.4. While the rate of return to boat capital (i.e. fishing gear and equipment) is high (137.6 per cent in 2006/07), the rate of return to total capital was estimated be 5.5 per cent. This is a substantial decline compared with earlier years, primarily due to the significant increase in the estimated licence value reported in the licence holder survey.

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 2006/07 in Table 3.4 represents the licence holders' estimate of the value of their licence based on the 2006 survey responses updated for changes in GVP.

The PIRSA Fisheries record of licence transfers for 2006/07 indicates that there was one licence transfer over the 12-month period, however, for confidentiality reasons the value of this transfer cannot be reported.

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 3.5.

Table 3.5 Sensitivity of rate of return to changes in licence value, 2006/07 ^a

Licence Value	\$3,974,000	\$7,947,000	\$11,921,000
Rate of Return to Total Capital (%)	10.6%	5.5%	3.7%

^a Based on the licence value estimated for 2006/07 and values 50 per cent above and below this estimate.

Source: EconSearch analysis.

Based on the costs and returns shown for the year 2006/07 in Table 3.4, a licence value of \$4.0 million (approximately 50 per cent below the licence value estimated for 2006/07) would mean an annual return to the total asset of 10.6 per cent, while a licence value of \$11.9 million (approximately 50 per cent above the licence value estimated for 2006/07) would mean an annual return to the total asset of 3.7 per cent (see Table 3.5).

3.5 State and Regional Economic Impact

Estimates of the economic impact of the SA Abalone fishing industry on the South Australian and regional (Eyre⁷) economies in 2006/07 are outlined below.

3.5.1 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, 2004/05⁸.

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) trade⁹.

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 2006/07, 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.

⁷ The Eyre region is comprised of the Statistical Division of Eyre, as defined by the Australian Bureau of Statistics (ABS).

⁸ The relevant information was obtained from Jack Langberg (PIRSA, pers. comm.).

⁹ 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.

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.

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.

3.5.2 Economic impacts at state and regional levels

Estimates of the economic impact generated in 2006/07 by the SA Abalone fishing industry in South Australia and the Eyre region are outlined in Tables 3.6 and 3.7, 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.

Table 3.6 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.

Table 3.7 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.

Value of output...

The value of output generated directly in South Australia and the Eyre region by Abalone fishing enterprises summed to \$31.5 million in 2006/07 (Tables 3.6 and 3.7), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$5.1 million (Table 3.6), \$3.2 million of which occurred in the Eyre region (Table 3.7).

Flow-ons to other sectors of the state economy added another \$29.8 million in output (\$12.3 million in the regional economy). The sectors most affected were the manufacturing, trade, business services and transport sectors.

Employment and household income...

In 2006/07, the SA Abalone fishery was responsible for the direct employment of around 123 full-time equivalents (fte) and downstream activities created employment of around 23 fte jobs state-wide. Flow-on business activity was estimated to generate a further 163 fte jobs state-wide (85 fte jobs regionally). These state-wide jobs were concentrated in the trade (47), business services (20) and manufacturing (18) sectors.

Personal income of \$9.1 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$1.2 million in downstream activities in SA. An additional \$8.1 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 \$18.4 million in SA (\$13.3 million in the Eyre region).

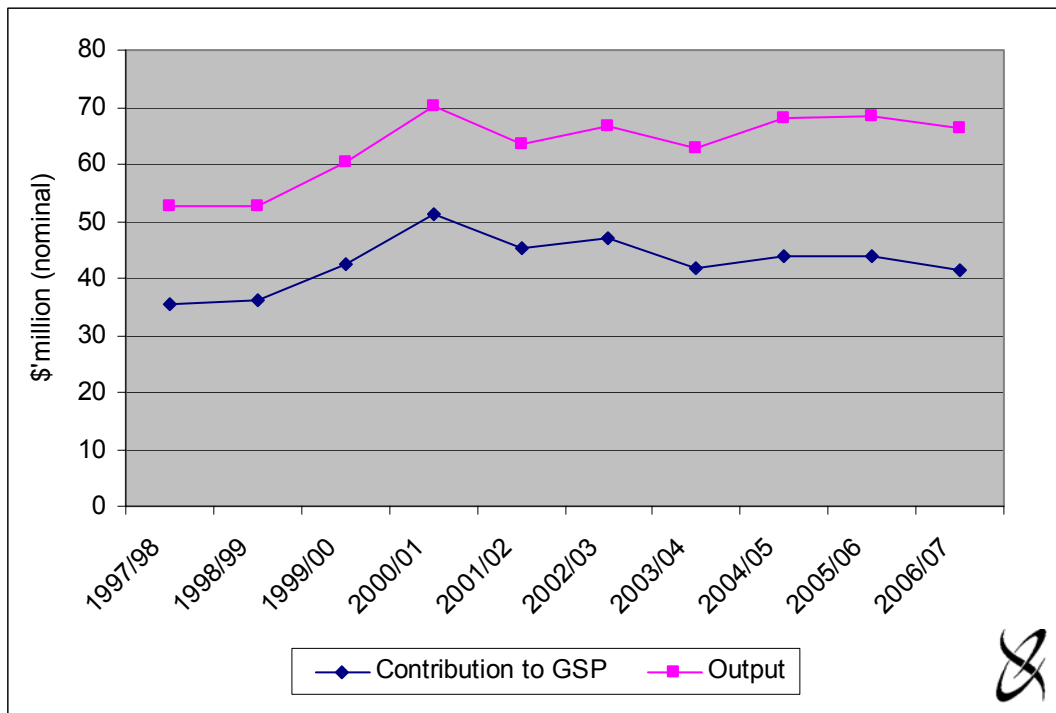
Contribution to GSP and GRP...

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 2006/07, total Abalone fishing industry related contribution to GSP in South Australia was \$41.5 million (\$32.7 million in the Eyre region), \$25.2 million generated by fishing directly, \$1.8 million generated by downstream activities and \$14.5 million generated in other sectors of the state economy.

Total impacts over time...

Figures 3.3 and 3.4 illustrate the total economic impact of the fishery on the SA economy for the ten-year period, 1997/98 to 2006/07. Estimates of economic impact are expressed in nominal terms. No adjustment has been made to reflect inflation.

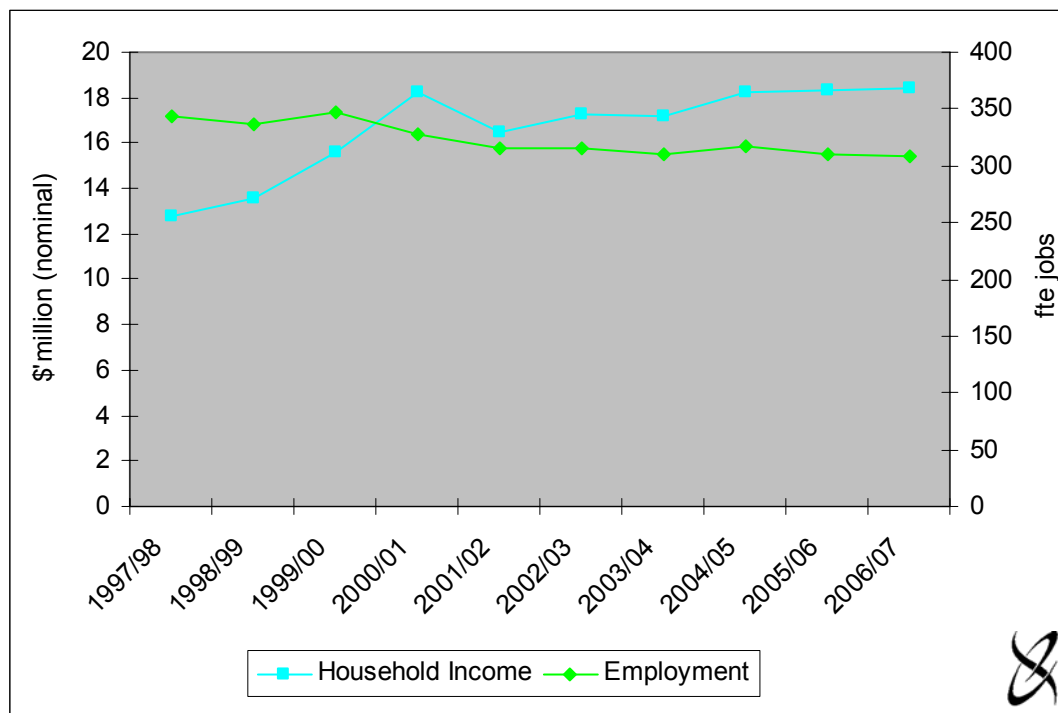
Figure 3.3 Total gross state product and output impact of the SA Abalone fishery on the SA economy, 1997/98 to 2006/07 ^a



^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 (2007a) and EconSearch analysis.

Figure 3.4 Total employment and household income impact of the SA Abalone fishery on the SA economy, 1997/98 to 2006/07 ^a



^a See footnote for Figure 3.3.

Source: EconSearch (2007a) and EconSearch analysis

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 most recent survey of licence holders conducted in February - March 2006.

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.

As economic impact estimates for the years 1997/98 to 2006/07 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 2006/07, as illustrated in Figure 3.4. This decrease is most likely due to productivity improvements across all sectors.

3.5.3 Additional expenditures and impacts

In addition to the impacts generated by recurrent expenditures in the abalone industry (as detailed in Table 3.6 and 3.7), 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 2006 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 3.8.

Table 3.8 Average annual local investment expenditures by licence holders in the SA Abalone fishery, 2000/01 to 2004/05

	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	0.064	0.062	0.126
Estimated Aggregate Annual Expenditure for the Abalone Fishery ^b	2.252	2.172	4.424

^a Based on survey respondents' estimated investment expenditures over the 5 years, 2000/01 to 2004/05.

^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 3.9.

Table 3.9 Regional economic impact of local investment expenditures in new enterprises by licence holders in the SA Abalone fishery, 2004/05 ^a

Sector	Investment/ Turnover (\$m)	Employment (fte jobs)	Household income (\$m)	Contribution to GRP (\$m)
Investment Sectors (direct)	2.17	13	0.64	1.10
All other sectors ^a (indirect)	1.02	7	0.28	0.51
Total	3.19	21	0.93	1.61

^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 2004/05, shown in Table 3.9, indicate the extent to which such investments add to the already significant regional contribution of the industry.

3.6 Economic Rent

Economic rent¹⁰ 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.

¹⁰ 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.

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 decreased from \$16.8 million in 2005/06 to \$14.8 million in 2006/07 (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.

Table 3.10 Economic rent in the SA Abalone fishery, 1997/98 to 2006/07 (\$'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	7,844	3,923	637	415	14,342
1999/00	32,394	9,355	3,879	653	426	18,081
2000/01	40,011	11,284	3,879	1,223	567	23,059
2001/02	34,755	9,801	4,049	1,257	583	19,065
2002/03	36,289	10,234	4,317	1,308	606	19,825
2003/04	31,582	8,907	4,605	1,347	624	16,099
2004/05	35,549	9,081	6,036	1,899	953	17,581
2005/06	35,589	9,091	6,228	2,309	1,158	16,803
2006/07	33,140	8,465	6,386	2,314	1,161	14,814

Source: EconSearch analysis.

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 2006/07 was estimated to be approximately \$278.2 million (35 licences with an average value of approximately \$8.0m). An annual economic rent of \$14.8 million represents a return of 5.3 per cent to the capital value of the fishery.

4. Other Economic Indicators

4.1 Factors Influencing the Economic Condition of the Abalone Fishery

There are a number of factors in 2006/07 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 unreported 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. Stock assessment reports suggest that an estimated 5,500 kg (shell weight) was taken illegally across the fishery in 2003/04. It is likely that this estimate is understated due to additional reports alleging abalone theft activity (Mayfield et al. 2004 a, b and c).

To illustrate the ongoing nature of the problem, in May 2006, four men were charged with offences relating to illegal abalone fishing and sales. A significant amount of illegally harvest abalone was recovered (MCCN, 2006)

Illegal, unregulated and unreported abalone fishing was raised as a concern by many licence holders who participated in the 2006 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 2002 to 2005, are detailed for region A and B in Tables 4.1 and 4.2, respectively.¹¹

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

Indicator	Greenlip Abalone				Blacklip Abalone			
	2002	2003	2004	2005	2002	2003	2004	2005
CPUE (kg/hr)	70.6	78.2	78.2	78.0	75.0	80.0	80.2	81.6
Mean size (mm)	165.7	168.4	168.2	165.6	149.4	149.4	149.6	149.5

Source Mayfield et al. (2003a, 2004a and 2005a) and Chick et al. (2006).

¹¹ The stock assessment for 2005 is the most recent data available.

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

Indicator	Greenlip Abalone				Blacklip Abalone			
	2002	2003	2004	2005	2002	2003	2004	2005
CPUE (kg/hr)	52.5	55.0	50.8	n.a.	60.0	56.3	48.3	n.a.
Mean size (mm)	n.a.	n.a.	163.7	n.a.	n.a.	n.a.	145.1	n.a.

Source: Mayfield and Ward (2003a and 2004) and Mayfield et al. (2005b)

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. 2005c). 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	Greenlip Abalone				Blacklip Abalone			
	2002	2003	2004	2005	2002	2003	2004	2005
CPUE (kg/hr)	82.7	90.7	90.2	76.2	68.9	75.6	79.1	63.2
Mean size (mm)	150.4	153.2	148.0	147.9	141.9	147.9	146.8	145.1

Source: Mayfield and Ward (2003b), Mayfield et al. (2004b and 2005c) and Mayfield et al. (2006)

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	Blacklip Abalone									
	Non-Fish-Down Areas					Fish-Down Area				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
CPUE (kg/hr)	94.1	111.9	104.7	114.5	101.4	88.5	88.2	93.1	99.1	102.5
Mean size (mm)	135.6	137.1	137.5	139.2	137.7	130.8	127.1	126.4	129.4	127.2

Source: Mayfield et al. (2003b, 2004c, 2005d and 2007)

4.1.3 Exchange Rates

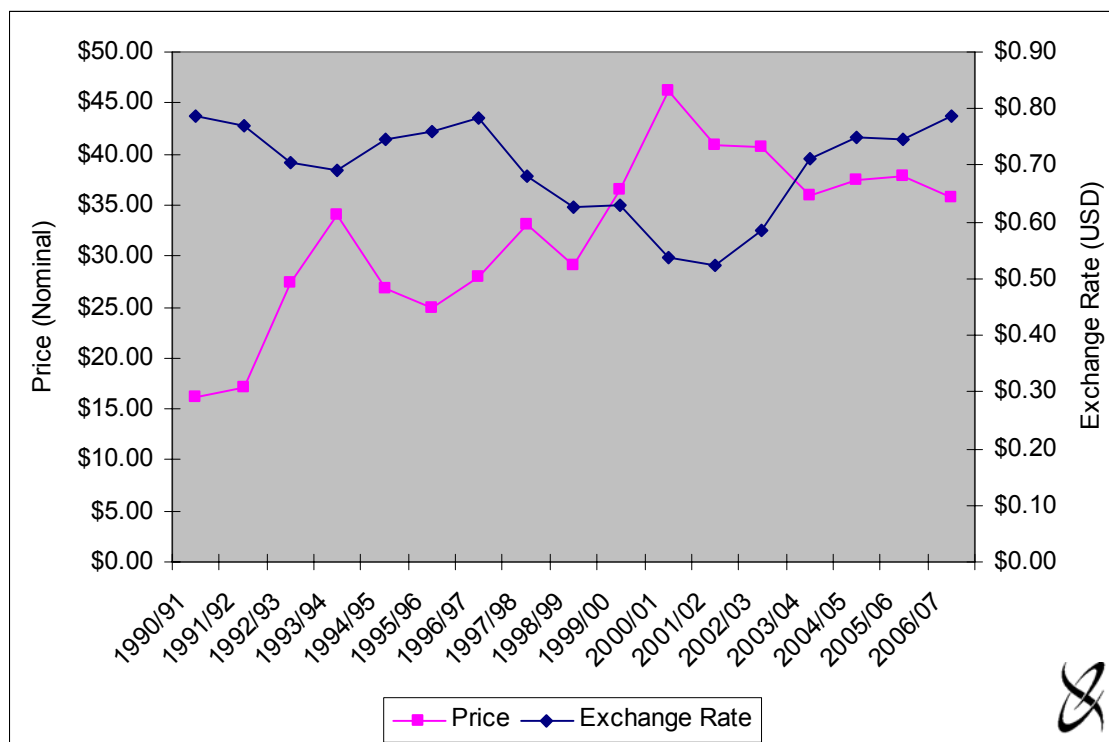
A proportion of the South Australian abalone catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery. The value of the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar have the potential to influence the demand for Australian abalone exports. The Australian dollar has remained relatively stable throughout 2006/07 ranging between US75 cents and US84 cents. This rate is higher than 2005/06 when the value of the dollar ranged from US72 cents to US76 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 2006/07 was US\$0.79, an increase of 5 per cent compared to 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 2005/06 and 2006/07.

The most significant export destination for South Australian abalone in 2006/07 was Hong Kong. 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 2005/06 was 5.79 HKD increasing to 6.13 (HKD) in 2006/07.

The relationship between the price of abalone and the exchange rate over the past 15 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 2006/07 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 2006/07, there is, generally, a corresponding decline in the average price of SA abalone.

Figure 4.1 Exchange rate (USD) and price for SA Abalone, 1990/01 to 2006/07



Source: SARDI Aquatic Sciences and RBA (2007 and previous issues).

4.2 Licence Holder Comments

In the 2006 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.

Fisheries Management

Licence holders who participated in the survey generally felt that the fishery is well managed and the current level of quota is environmentally sustainable. Some licence holders indicated that there is likely to be a slight increase in quota in the near future due to the strong stock levels.

Given the abundance of stocks, many licence holders felt that an increase in quota was necessary due to the significant increase in costs associated with fishing over the last 15 years. Some felt that the increases in costs over time, in the absence of any increase in quota, had prevented them from making capital investments in aquaculture and other industries.

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.

Community Involvement

As well as investment in other industries, licence holders indicated that they made significant contributions to the community both in time and through financial contributions. Many licence holders indicated that they were involved in local sporting clubs, environmental groups and the CFS.

Health of Divers

Many licence holders indicated that the working life of the diver and sheller is limited due to the adverse conditions under which they work. Long hours and poor conditions are often detrimental to the divers' health.

4.3 Abalone Exports from South Australia

There was no abalone (live, fresh or chilled) exported directly from South Australia in 2005/06 or 2006/07. There were, however, some exports of frozen and dried abalone products. The total quantity of abalone products exported in 2006/07 represented approximately 62 per cent of total South Australian abalone catch, compared 44 per cent in the previous year.¹²

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 and 2006/07. The most significant export destination in 2006/07 was Hong Kong, accounting for 70 per cent of the total quantity and 76 per cent of the total value of exports.

Table 4.5 Abalone exports from SA, by country of destination, 2005/06 and 2006/07

Destination	2005/06		2006/07	
	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)
Canada	14,036	1,921	11,246	1,457
China	7,756	1,572	1,835	397
Hong Kong	254,022	32,624	382,190	40,880
Japan	70,990	6,022	86,948	5,022
Singapore	14,119	1,784	20,337	1,882
Taiwan	10,342	1,301	4,319	481
USA	13,475	1,804	21,821	2,782
Other	7,869	984	19,370	1,239
Total	392,608	48,011	548,064	54,141

Source: ABS data (unpublished).

¹² 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 4.6 and the associated data in Appendix Tables 2.1 and 2.2 provides a breakdown of total abalone exports from SA by product type. The most significant product exported was preserved abalone, accounting for 53 per cent of the total quantity and 54 per cent of the total value of total exports in 2006/07.

Table 4.6 Abalone exports from SA, by product type, 2005/06 and 2006/07

Product	2005/06		2006/07	
	Quantity (kg)	Value (\$'000)	Quantity (kg)	Value (\$'000)
Preserved ^a	232,401	30,360	290,225	29,347
Live	0	0	0	0
Frozen Meat	106,062	13,688	146,582	18,064
Frozen Whole on S	43,913	2,207	77,288	3,786
Dried	587	613	10,485	1,513
Parboiled - Whole	0	0	9,190	352
Other	9,645	1,143	14,294	1,079
Total	392,608	48,011	548,064	54,141

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

Source: ABS data (unpublished).

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Appendix 1 Economic Impact of the South Australian Abalone Fishery, 2005/06

Appendix Table 1.1 The economic impact of the Abalone fishing industry in South Australia, 2005/06

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	33.9	49.4%	123	39.5%	9.1	49.6%	27.6	63.0%
Processing	2.1	3.1%	7	2.2%	0.3	1.7%	0.5	1.1%
Transport	1.6	2.3%	8	2.4%	0.5	2.9%	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	1.7%	8	2.4%	0.3	1.8%	0.5	1.1%
Total Direct ^c	39.0	55.1%	146	44.6%	10.3	54.5%	29.4	66.1%
Flow-on effects								
Trade	4.2	6.2%	47	15.2%	1.6	8.7%	2.0	4.5%
Manufacturing	5.8	8.5%	18	6.0%	0.9	4.7%	1.4	3.1%
Business Services	3.4	5.0%	20	6.5%	1.2	6.8%	1.6	3.7%
Transport	1.3	1.9%	6	2.0%	0.4	2.3%	0.6	1.4%
Other Sectors	14.8	21.6%	72	23.3%	3.9	21.3%	8.8	20.1%
Total Flow-on ^c	29.6	43.2%	164	53.0%	8.0	43.7%	14.4	32.8%
Total ^c	68.6	100.0%	310	100.0%	18.3	100.0%	43.8	100.0%
Total/Direct	1.8	-	2.1	-	1.8	-	1.5	-
Total/Tonne	\$76,500	-	0.35	-	\$20,400	-	\$48,900	-

^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 1.7 The economic impact of the Abalone fishing industry in the Eyre region, 2005/06

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	33.9	68.7%	123	54.0%	9.1	68.4%	27.6	78.7%
Processing	2.1	4.3%	10	4.3%	0.4	2.9%	0.6	1.7%
Transport	0.4	0.8%	2	1.0%	0.1	1.0%	0.2	0.5%
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	1.5%	7	3.1%	0.3	1.9%	0.4	1.1%
Total Direct ^c	37.1	73.7%	142	59.4%	9.9	72.4%	28.8	81.0%
Flow-on effects								
Trade	2.3	4.8%	31	13.5%	0.9	6.6%	1.1	3.2%
Manufacturing	1.6	3.3%	8	3.3%	0.3	2.3%	0.5	1.3%
Business Services	1.1	2.3%	8	3.5%	0.4	3.1%	0.6	1.6%
Transport	0.6	1.1%	3	1.4%	0.2	1.4%	0.3	0.8%
Other Sectors	6.5	13.2%	36	15.8%	1.6	12.3%	3.9	11.1%
Total Flow-on ^c	12.2	24.7%	85	37.5%	3.4	25.7%	6.3	18.0%
Total ^c	49.3	100.0%	227	100.0%	13.3	100.0%	35.1	100.0%
Total/Direct	1.3	-	1.6	-	1.3	-	1.2	-
Total/Tonne	\$55,000	-	0.25	-	\$14,800	-	\$39,100	-

^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, 2006/07

Appendix Table 2.1 Abalone exports from South Australia, quantity (kg), 2006/07

	Preserved ^a	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
Belgium-Luxembourg	1,378	0	0	0	0	0	0	1,378
Canada	4,271	0	6,975	0	0	0	0	11,246
China	1,235	0	600	0	0	0	0	1,835
Hong Kong	219,980	0	131,154	18,262	930	0	11,864	382,190
Indonesia	0	0	0	0	0	0	0	0
Japan	18,181	0	40	58,226	15	0	1,296	77,758
Macau	806	0	0	0	0	0	0	806
Malaysia	4,095	0	0	0	0	0	0	4,095
Singapore	16,874	0	2,173	800	490	0	0	20,337
Taiwan	3,185	0	0	0	0	0	0	3,185
Thailand	650	0	0	0	0	0	0	650
UK	1,515	0	1,120	0	0	0	1,134	3,769
USA	17,251	0	4,520	0	50	0	0	21,821
Viet Nam	0	0	0	0	0	0	0	0
Total	289,419	0	146,582	77,288	1,485	0	14,294	529,068

^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), 2006/07

	Preserved	Live	Frozen Meat	Frozen Whole on Shell	Dried	Parboiled - Whole	Other	Total
Belgium-Luxembourg	195	0	0	0	0	0	0	195
Canada	548	0	910	0	0	0	0	1,457
China	327	0	70	0	0	0	0	397
Hong Kong	21,490	0	16,163	1,356	931	0	940	40,880
Indonesia	0	0	0	0	0	0	0	0
Japan	2,181	0	5	2,389	16	0	79	4,670
Macau	101	0	0	0	0	0	0	101
Malaysia	433	0	0	0	0	0	0	433
Singapore	1,176	0	175	42	489	0	0	1,882
Taiwan	421	0	0	0	0	0	0	421
Thailand	64	0	0	0	0	0	0	64
UK	184	0	152	0	0	0	60	395
USA	2,139	0	590	0	53	0	0	2,782
Viet Nam	0	0	0	0	0	0	0	0
Total	29,259	0	18,064	3,786	1,489	0	1,079	53,678

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 2005/06 (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

^a Excludes the River fishery for the years 2003/04 to 2005/06.

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

Source: EconSearch (2007b)

Appendix Table 3.2 Commercial fisheries gross value of production, South Australia, 1990/91 to 2005/06 (\$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

^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 2005/06.

^b SARDI estimates for the years 1990/91 to 2002/03, revalued SARDI estimates for 2003/04 to 2005/06 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 (2007b).

Appendix Table 3.3 Cost of management in South Australian commercial fisheries, 2005/06

	Licence Fees (\$'000)	GVP (\$'000)	Fees/ GVP (%)	Catch ('000kg)	Fees/ Catch (\$/kg)	Licence Holders (no.)	Fees/ Licence (\$/licence)
Abalone	2,323	33,859	6.9%	896	\$2.59	35	\$66,359
GSV Prawns	270	2,941	9.2%	179	\$1.51	10	\$27,023
SG & WC Prawns	834	33,968	2.5%	1,891	\$0.44	42	\$19,855
Sth'n Zone Rock Lobster	2,508	65,737	3.8%	1,889	\$1.33	180	\$13,932
Nth'n Zone Rock Lobster	1,088	15,433	7.0%	476	\$2.29	69	\$15,766
Blue Crabs - Pots	240	4,966	4.8%	600	\$0.40	8	\$29,965
Blue Crabs – Marine Scale	55	270	20.4%	48	\$1.15	11	\$5,004
Lakes and Coorong ^a	265	5,924	4.5%	2,352	\$0.11	37	\$7,175
Marine Scalefish	1,547	17,446	8.9%	3,186	\$0.49	384	\$4,028
Sardines	1,005	16,031	6.3%	28,626	\$0.04	14	\$71,814
Total SA	10,135	196,575	5.2%	40,143	\$0.25	790	\$12,829

^a Excludes the River fishery.

Source: EconSearch (2007b).

Appendix Table 3.4 Financial performance in South Australian commercial fisheries, 2005/06, (\$'000) (average per boat)

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs Pot Sector ^a	Blue Crabs MS Sector ^a	Marine Scalefish ^b	Sardines	Lakes and Coorong
Gross Income	1,016,832	289,461	750,619	379,715	294,654	4,965,840	270,000	47,143	1,149,494	192,547
Costs										
Fuel	15,303	26,271	56,862	21,559	45,355	643,257	29,947	6,237	201,916	13,949
R&M	37,217	14,771	47,481	19,228	17,141	554,784	34,805	5,619	92,054	6,382
Bait				9,794	15,877			2,052		
Provisions		871	3,438	346	4,523	74,030	9,306		8,601	231
Labour	259,742	108,665	251,689	105,124	126,650	1,242,761	92,227	29,515	476,843	70,477
Licence fee	65,408	28,283	22,750	15,832	19,588	239,717	55,046	4,028	71,634	8,660
Insurance	6,871	18,993	19,911	6,412	8,843	64,430	9,701	1,892	30,477	1,593
Interest	4,983	28,475	41,784	21,951	31,889	630,348	8,774	266	88,312	4,900
Admin & Other	52,465	24,073	51,700	11,425	30,517	214,071	13,171	8,083	85,518	27,202
Total Cash Costs	441,988	250,401	495,615	211,670	300,384	3,663,397	252,977	57,692	1,055,354	133,393
Cash Operating Surplus	574,844	39,060	255,004	168,045	-5,730	1,302,443	17,023	-10,550	94,139	59,154
Depreciation	65,965	133,534	142,871	45,030	58,002	334,322	38,863	8,814	194,240	59,154
Earnings Before Tax	508,879	-94,475	112,133	123,015	-63,732	968,121	-21,840	-19,364	-100,101	0
EBIT ^c	513,862	-66,000	153,918	144,966	-31,843	1,598,468	-13,067	-19,098	-11,789	4,900
Capital										
Fishing Gear & Equipment	330,981	988,171	1,295,365	330,318	451,237	3,346,480	327,635	87,851	2,621,394	121,908
Licence Value	8,534,578	2,424,116	4,283,669	2,873,997	1,472,307	25,509,890	1,282,274	146,565	3,042,857	177,500
Total Capital	8,865,559	3,412,287	5,579,034	3,204,315	1,923,544	28,856,371	1,609,909	234,415	5,664,251	299,408
Rate of Return to Gear/Equip	155%	-7%	12%	44%	-7%	48%	-4%	-22%	0%	4%
Rate of Return to Capital	6%	-2%	3%	5%	-2%	6%	-1%	-8%	0%	2%

^a Financial performance for blue crab are on a whole sector basis. Survey estimate of income for the pot sector are higher than SARDI estimates (Appendix Table 2.2). The reason for the difference is that SARDI estimates are based on Adelaide prices, whereas licence holders are also selling to the higher priced Sydney & Melbourne markets.

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

^c Earnings before interest and tax.

Source: EconSearch (2007b).

Appendix Table 3.5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2005/06

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs Pot Sector	Blue Crabs MS Sector	Marine Scalefish ^a	Sardines	Lakes & Coorong
Fuel	3%	10%	11%	10%	15%	18%	12%	11%	19%	10%
R&M	8%	6%	10%	9%	6%	15%	14%	10%	9%	5%
Labour	59%	43%	51%	50%	42%	34%	36%	51%	45%	53%
Licence fee	15%	11%	5%	7%	7%	7%	22%	7%	7%	6%
Insurance	2%	8%	4%	3%	3%	2%	4%	3%	3%	1%
Interest	1%	11%	8%	10%	11%	17%	3%	0%	8%	4%
Admin & Other	12%	10%	11%	10%	17%	8%	9%	18%	9%	21%
Total Cash Costs	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

Source: EconSearch (2007b).

Appendix Table 3.6 Economic impacts of South Australian commercial fisheries, 2005/06

	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	33.9	2.9	34.0	65.7	15.4	5.2	17.4	16.0	5.9	196.6
Downstream ^b	5.1	1.8	16.5	24.5	6.6	3.1	9.5	3.3	5.8	76.2
All other sectors (indirect)	29.6	5.6	48.6	80.1	32.6	9.0	39.2	24.6	13.7	283.1
Total	68.6	10.4	99.0	170.3	54.7	17.4	66.1	43.9	25.5	555.8
Total/Direct	1.8	2.2	2.0	1.9	2.5	2.1	2.5	2.3	2.2	2.0
Total/Tonne (\$)	\$76,500	\$57,900	\$52,300	\$90,100	\$114,800	\$26,700	\$20,700	\$1,500	\$10,800	\$12,348
Contribution to GSP (\$m)										
Direct										
Fishing	27.6	1.8	25.1	49.7	5.2	3.2	6.7	8.9	3.7	131.9
Downstream	1.8	0.7	6.8	9.7	2.6	1.1	3.4	1.5	2.3	29.9
All other sectors (indirect)	14.4	2.8	23.3	38.6	15.6	4.2	18.5	11.7	6.6	135.8
Total	43.8	5.3	55.2	98.0	23.5	8.4	28.6	22.0	12.7	297.6
Total/Direct	1.5	2.1	1.7	1.7	3.0	2.0	2.8	2.1	2.1	1.8
Total/Tonne (\$)	\$48,900	\$29,351	\$29,200	\$51,800	\$49,300	\$13,000	\$8,986	\$769	\$5,382	\$6,612
Employment (fte jobs) ^c										
Direct										
Fishing	123	37	217	421	185	27	354	63	74	1,501
Downstream	23	18	160	141	41	17	74	21	46	542
All other sectors (indirect)	164	31	272	442	182	49	216	139	77	1,572
Total	310	86	649	1,005	408	93	644	222	197	3,615
Total/Direct	2.1	1.6	1.7	1.8	1.8	2.1	1.5	2.7	1.6	1.8
Total/Tonne	0.35	0.48	0.34	0.53	0.86	0.14	0.20	0.01	0.08	0.08
Household Income (\$m)										
Direct										
Fishing	9.1	1.1	10.6	18.9	5.8	1.3	6.7	6.7	2.6	62.8
Downstream	1.2	0.5	4.9	6.7	1.8	0.7	2.5	1.0	1.7	21.0
All other sectors (indirect)	8.0	1.5	13.0	21.1	8.6	2.4	10.4	6.4	3.7	75.1
Total	18.3	3.2	28.4	46.7	16.3	4.4	19.5	14.1	8.0	158.9
Total/Direct	1.8	1.9	1.8	1.8	2.1	2.1	2.1	1.8	1.9	1.9
Total/Tonne (\$)	\$20,400	\$17,600	\$15,000	\$24,700	\$34,200	\$6,800	\$6,100	\$400	\$3,300	\$3,530

^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 655 full-time and 1,399 part-time, that is, 2,054 jobs in total.

Source: EconSearch (2007b).

Appendix Table 3.7 Economic rent in South Australian commercial fisheries, 2005/06 (\$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	35.6	2.9	34.0	65.7	15.4	5.2	17.4	16.0	5.9	198.3
Less Labour	9.1	1.1	11.4	18.2	6.6	1.3	10.9	6.7	2.2	67.5
Less Materials & Services	6.2	1.2	9.1	14.6	7.4	1.9	10.3	6.6	1.8	59.2
Less Depreciation	2.3	1.4	6.5	7.8	3.0	0.4	3.3	2.7	0.6	27.9
Less Opportunity Cost of Capital (@10%)	1.2	1.0	5.9	5.7	2.4	0.4	3.3	3.7	0.4	23.8
Economic Rent	16.8	-1.7	1.1	19.4	-4.0	1.2	-10.3	-3.5	1.0	20.0

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

Source: EconSearch (2007b).

Appendix 4 Financial Performance Indicators, 1997/98 to 2001/02

Appendix Table 4.1 Financial performance in the SA Abalone fishery, 1997/98 to 2001/02 (average per boat)^a

	1997/98		1998/99		1999/00		2000/01		2001/02	
	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC	All Boats	Share of TCC
Gross Income	\$751,286		\$776,029		\$925,543		\$1,143,171		\$993,000	
Costs										
Fuel	\$11,483	3%	\$11,808	3%	\$15,420	4%	\$10,862	2%	\$10,764	3%
R&M	\$21,524	6%	\$23,824	7%	\$21,257	5%	\$24,315	6%	\$25,164	6%
Labour	\$216,964	61%	\$224,109	65%	\$267,287	68%	\$322,389	74%	\$280,039	70%
Licence fee	\$66,294	19%	\$48,033	14%	\$45,278	12%	\$45,441	10%	\$48,712	12%
Insurance	\$4,375	1%	\$4,433	1%	\$4,544	1%	\$4,568	1%	\$4,694	1%
Interest	\$11,969	3%	\$11,048	3%	\$12,232	3%	\$3,189	1%	\$2,997	1%
Admin and Other	\$23,512	7%	\$23,982	7%	\$24,334	6%	\$25,636	6%	\$26,354	7%
Total Cash Costs	\$356,121	100%	\$347,237	100%	\$390,353	100%	\$436,400	100%	\$398,723	100%
Cash Operating Surplus	\$395,165		\$428,792		\$535,190		\$706,771		\$594,277	
Depreciation	\$17,971		\$18,207		\$18,665		\$34,950		\$35,919	
Earnings Before Tax	\$377,194		\$410,584		\$516,525		\$671,821		\$558,358	
Earnings Before Interest & Tax	\$389,163		\$421,633		\$528,757		\$675,010		\$561,354	
Capital										
Fishing Gear & Equipment	\$117,138		\$118,679		\$121,665		\$161,955		\$166,443	
Licence Value ^b	\$3,741,667		\$4,053,850		\$5,083,811		\$5,700,000		\$4,951,226	
Total Capital	\$3,858,804		\$4,172,529		\$5,205,476		\$5,861,955		\$5,117,669	
Rate of Return to Fishing Gear & Equip	332.2%		355.3%		434.6%		416.8%		337.3%	
Rate of Return to Total Capital	10.1%		10.1%		10.2%		11.5%		11.0%	

^a Financial performance estimates for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders.

Source: EconSearch (1999, 2000, 2001, 2002 and 2003).