

Economic Indicators
for the SA Southern Zone
Rock Lobster Fishery
2007/08

A report prepared for
Primary Industries and Resources South Australia

Prepared by



1 June 2009

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Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	consumer price index
EBIT	earnings before interest and tax
EMS	Environmental Management System
FMC	Fishery Management Committee
FRDC	Fisheries Research and Development Corporation
fob	free on board
fte	full time equivalent
GDP	gross domestic product
GRP	gross regional product
GSP	gross state product
GVP	gross value of production
MCCN	Marine and Coastal Community Network
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
SZRL	Southern Zone Rock Lobster
TACC	total allowable commercial catch

Acknowledgments

EconSearch has relied heavily on the voluntary cooperation of fishing operators in providing data for the three 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 greatly appreciated. PIRSA and SARDI officers provided assistance, were supportive of the data collection and offered valuable advice.

Document History and Status

Doc Ver	Doc Status	Issued To	Qty elec	Qty hard	Date	Reviewed	Approved
1	DRAFT	Kelly Crosthwaite Michael Tokley	1	-	02/04/09	JBM	JBM
2	DRAFT	Kelly Crosthwaite	1	-	28/05/09	JBM	JBM
3	DRAFT	Kelly Crosthwaite	1	-	29/05/09	JBM	JBM
4	FINAL	Will Zacharin Michael Tokley	1	5	01/06/09	JBM	JBM

Printed: 1/06/2009 4:16:00 PM
 Last Saved: 1/06/2009 4:09:00 PM
 File Name: S:\1_Projects\Current\0426_Economic Indicators\2008\SZRockLobster\Reports\SZRL_Final Report_090601.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 Southern Zone Rock Lobster Fishery, 2007/08
 Document Version: 4
 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 SA Southern Zone Rock Lobster (SZRL) fishery. The first report, prepared for 1997/98, entitled *Economic Indicators for the SA Southern Zone Rock Lobster Fishery 1997/98* (EconSearch 1999a), reported on the results of an initial economic survey of the SA Southern Zone Rock Lobster 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 1999b and 2001). The fourth annual report outlined the fishery's economic performance in 2000/01 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 respectively, provided an update of the 2000/01 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 a third survey of licence holders, conducted in 2006 (EconSearch 2006). The ninth and tenth reports, prepared for 2005/06 and 2006/07, provided updates of the 2004/05 economic indicators based on the third licence holder survey (EconSearch 2007 and 2008a).

The objective of this report, *Economic Indicators for the SA Southern Zone Rock Lobster Fishery 2007/08*, is to provide an update of the fishery's most recent economic performance based on the results of the fourth licence holder survey conducted in 2009.

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;
- factors affecting 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
- rock lobster exports (quantity and value).

For purposes of comparison, summary economic indicators for all South Australian 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 survey conducted in 2004/05. It was drafted by the consultants in consultation with the Industry Extension Officer (Mr Michael Tokley).

In January 2009, all licence holders were sent an introductory letter encouraging them to participate in the survey. Licence holders were then contacted and face-to-face surveys were carried out over the period January to February 2009. A total of 66 licence holders participated in the survey, accounting for 37 per cent of total licence holders in the fishery. Thus, the economic indicators for 2007/08 were survey-based estimates.

2.2 Definition of Terms¹

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

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

- fuel, oil and grease for the boat (net of diesel fuel rebate)
- bait
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs (nets, pots, lines, etc)
- repairs & maintenance: ongoing (slipping, painting, overhaul 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
- licence and industry fees
- office & business administration (communication, stationery, accountancy fees)
- interest on loan repayments and overdraft
- leasing

¹ Where possible definitions have been kept consistent with those used by Brown (1997) in ABARE's *Australian Fisheries Surveys Report*.

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 for which involves imputing a labour cost based on the amount of time and equivalent wages rate. In the above calculations this labour cost can be included simply as another cost so that Gross Operating Surplus takes account of this cost. Alternatively, it can be deducted from GOS to give a separate indicator called Boat Cash Income. Owner-operator and unpaid family labour is separated into variable labour (fishing and repairs and maintenance) and overhead labour (management and administration).

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 Southern Zone Rock Lobster Fishery

3.1 Catch and Gross Value of Production

The data shown in Table 3.1 for the years between 1990/91 and 2007/08 indicate that the total rock lobster catch in the southern zone has tended to be steady throughout the period, with the exception of a notable rise in catch in 1991/92. The steady catch level in the southern zone in recent years can be attributed to a change in management regime in the fishery, with the introduction of a total allowable commercial catch (TACC) in 1993/94. The TACC in 2007/08 was 1,900 tonnes, catch in the fishery was 1,850 tonnes.

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

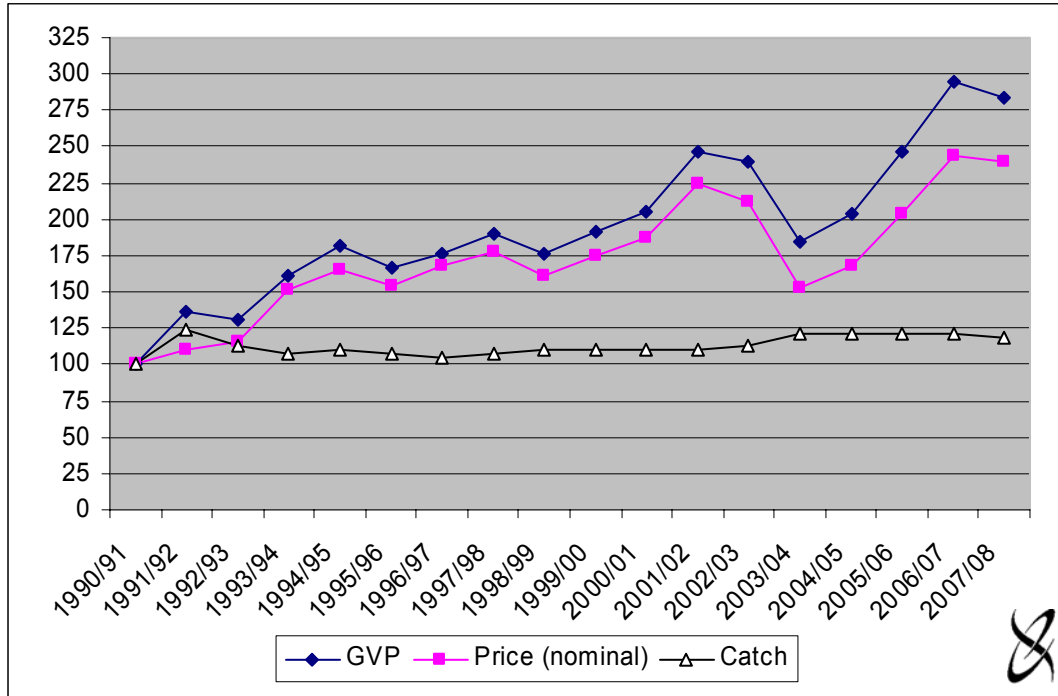
Year	Southern Zone		Northern Zone		South Australia	
	(tonnes)	(\$m)	(tonnes)	(\$m)	(tonnes)	(\$m)
1990/91	1,562	26.7	1,104	18.2	2,666	44.9
1991/92	1,940	36.3	1,222	21.4	3,162	57.8
1992/93	1,754	34.8	1,064	20.5	2,818	55.3
1993/94	1,669	43.2	930	23.4	2,599	66.6
1994/95	1,720	48.6	891	25.5	2,611	74.0
1995/96	1,684	44.6	903	23.8	2,587	68.4
1996/97	1,635	47.0	893	24.4	2,528	71.4
1997/98	1,680	50.9	942	27.7	2,622	78.6
1998/99	1,713	47.2	1,016	26.7	2,729	73.9
1999/00	1,717	51.2	1,001	29.8	2,718	81.0
2000/01	1,716	54.7	846	28.0	2,562	82.7
2001/02	1,717	65.7	675	26.2	2,392	91.9
2002/03	1,766	63.8	595	18.8	2,361	82.7
2003/04	1,896	49.3	504	12.0	2,400	61.4
2004/05	1,897	54.4	446	11.6	2,343	66.0
2005/06	1,889	65.7	476	15.4	2,365	81.2
2006/07	1,894	78.8	492	18.0	2,386	96.7
2007/08	1,850	75.7	459	15.9	2,309	91.7

Source: SARDI Aquatic Sciences.

Table 3.1 and Figure 3.1 illustrate how the value of the fishery has changed over the 17-year period 1990/91 to 2007/08. The nominal value of the southern zone catch in 2006/07 was 184 per cent above that in 1990/91. This is the result of a 18 per cent increase in catch between 1990/91 and 2007/08, as well as a substantial increase in lobster price over this period.

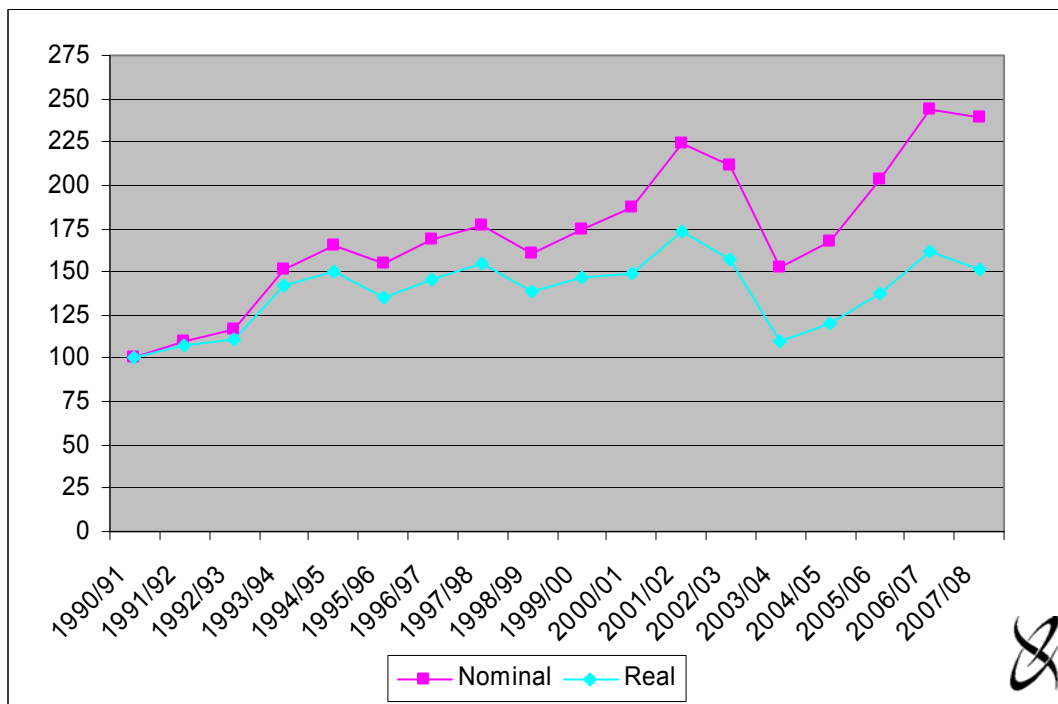
Figures 3.1 and 3.2 show that the average price of lobster in the southern zone has increased over the 17-year period, by 140 per cent in nominal terms.

Figure 3.1 GVP, price and catch indices for the SA Southern Zone Rock Lobster fishery (1990/91=100)



Source: SARDI Aquatic Sciences.

Figure 3.2 Price index for the SA Southern Zone Rock Lobster fishery (1990/91=100)



Source: SARDI Aquatic Sciences.

The rate of price increase for rock lobster was well above the consumer price index (CPI) for the decade or so up until 2001/02. In the following two years there was a sharp decline in price, although it recovered slightly in 2004/05 and has increased in subsequent years. The price for rock lobster decreased slightly between 2006/07 and 2007/08 in both nominal and real terms. Figure 3.2 shows that the nominal price in 2007/08 was 140 per cent above that in 1990/91, which is equivalent to a 52 per cent real price increase. This means that the value of the southern zone catch in 2007/08 was 80 per cent higher in real terms than it was in 1990/91 (184 per cent higher in nominal terms as noted above).

3.2 Costs 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, PIRSA, pers. comm.).

Table 3.2 shows actual licence fee receipts for the fishery for the period 1996/97 to 2008/09.

Since 1996/97, the following trends have emerged.

- Licence fees as a percentage of gross value of production followed a declining trend from 1997/98 to 2002/03 before increasing to 5.1 per cent in 2003/04. Fees as a proportion of GVP have since decreased and were 3.5 per cent of GVP in 2007/08.
- The cost of licence fees per kilogram of landed lobster fell from \$1.35 in 1996/97 to \$1.17 per kilogram in 1999/00 but have since increased and was \$1.42 per kilogram in 2007/08.
- The cost per licence holder was relatively steady at around \$12,000 per licence holder from 1996/97 to 2002/03 but increased to \$16,442 in 2006/07. Fees per licence holder were \$14,518 in 2007/08, slightly less than the previous year.

Fees per licence holder decreased from \$14,518 in 2007/08 to \$13,941 in 2008/09, a decrease of 4 per cent.

Table 3.2 Costs of management in the SA Southern Zone Rock Lobster fishery, 1996/97 to 2007/08

	Licence Fees (\$,000)	Gross Value of (\$,000)	Fees/GVP (%)	Catch (t)	Fee/Catch (\$/kg)	No. Licence Holder (no.)	Fee/Licence Holder (\$/licence)
1996/97	\$2,200	47,003	4.7%	1,635	\$1.35	185	\$11,890
1997/98	\$2,610	50,872	5.1%	1,680	\$1.55	184	\$14,186
1998/99	\$2,145	47,165	4.5%	1,713	\$1.25	184	\$11,659
1999/00	\$2,009	51,163	3.9%	1,717	\$1.17	183	\$10,979
2000/01	\$2,102	54,738	3.8%	1,716	\$1.23	182	\$11,551
2001/02	\$2,211	65,671	3.4%	1,717	\$1.29	180	\$12,283
2002/03	\$2,156	63,838	3.4%	1,766	\$1.22	180	\$11,975
2003/04	\$2,520	49,319	5.1%	1,896	\$1.33	180	\$13,999
2004/05	\$2,497	54,397	4.6%	1,897	\$1.32	180	\$13,870
2005/06	\$2,508	65,737	3.8%	1,889	\$1.33	180	\$13,932
2006/07	\$2,976	78,791	3.8%	1,894	\$1.57	181	\$16,442
2007/08	\$2,628	75,731	3.5%	1,850	\$1.42	181	\$14,518
2008/09	\$2,523	n.a.	-	n.a.	-	181	\$13,941

^a A number of Southern Zone Rock Lobster licence holders have marine scalefish entitlements. The costs of managing the marine scalefish fishery are not included in the licence fee information reported above.

Source: PIRSA Fisheries.

3.3 Financial Performance Indicators

The major measures of the financial performance of the surveyed boats in the SA SZRL fishery for the years 2005/06 to 2007/08 are shown in Table 3.3. Financial performance estimates 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 the October 2001 survey. Financial performance estimates for 2004/05 to 2006/07 are based on the April-May 2006 survey of licence holders². Estimates for 2007/08 are based on the most recent licence holder survey conducted in 2009.

As a result of the large sample size it was possible to divide the 2007/08 survey responses into four groups (quartiles) according to rate of return to capital. The first quartile comprises the 25 per cent of boats with the lowest rate of return and fourth quartile includes the 25 per cent with the highest rate of return to capital. The financial performance measures for return to capital quartiles for 2007/08 are provided in Table 3.4.

² Financial performance estimates for the years 1997/98 to 2004/05 are provided in Appendix 4 of this report.

In addition, the survey responses were divided into three groups according to the number of licensed pots held. The first group includes those licence holders with less than 60 pots (approximately 20 per cent of survey respondents), the second group includes licence holders with 60 to 79 pots (approximately 38 per cent of survey respondents) and the third group includes licence holders with 80 pots or more (approximately 43 per cent of survey respondents).³ The financial performance estimates for the pot groups for 2007/08 are provided in Table 3.6 as an average per boat and in Table 3.7 as an average per pot.

Income...

Total recorded lobster catch decreased by approximately 2 per cent between 2006/07 and 2007/08 and with a price decrease of 2 per cent, gross receipts from the sale of rock lobster fell by 4 per cent over the same period (Table 3.1). The estimated average gross income per boat in the SZRL fishery was almost \$487,000 in 2007/08, compared to approximately \$453,000 in 2006/07, an increase of 8 per cent (Table 3.3).⁴

In 2007/08, the average gross income for boats in the first quartile was approximately 21 per cent below the average, while in the fourth quartile, average gross income was 15 per cent above the average recorded for all surveyed boats (Table 3.4).

As expected, the average gross income per boat was positively correlated with the number of pots per boat (Table 3.5), however, the gross income per pot was relatively consistent across all three groups (Table 3.6).

Costs...

Table 3.3 shows total costs separated into variable and fixed costs. Variable costs (73 per cent of total boat cash costs in 2007/08) represented a significantly greater proportion of total boat cash costs than fixed costs (27 per cent).

It was estimated that average total boat cash costs increased by approximately 19 per cent between 2006/07 and 2007/08. Notable changes in costs include increases in wages, fuel, repairs and maintenance and bait (Table 3.3).

In 2007/08, for the fishery as a whole, approximately 46 per cent of total boat cash costs were attributable to labour costs (almost \$138,000 per boat including imputed 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 (almost \$30,000 per boat for 2007/08) was divided into variable (fishing and repairs and maintenance) and fixed (management and administration) components based on the 2009 licence holder survey.

The other significant cash costs were fuel (13 per cent), repairs and maintenance (9 per cent), interest (9 per cent), licence fees (7 per cent) and bait (6 per cent) (Table 3.3).

³ Number of pots was based on pots owned and leased by the licence holders who participated in the 2009 survey of licence holders.

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

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

	2005/06		2006/07		2007/08	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$379,715		\$452,604		\$486,656	
Variable Costs						
Fuel	\$21,559	10%	\$23,925	10%	\$39,453	13%
Repairs & Maintenance ^c	\$19,406	9%	\$21,616	9%	\$26,867	9%
Bait/Ice	\$10,418	5%	\$10,916	4%	\$18,767	6%
Provisions	\$349	0%	\$389	0%	\$695	0%
Labour - paid	\$74,041	34%	\$91,705	37%	\$108,100	36%
(2) - unpaid ^d	\$26,161	12%	\$32,402	13%	\$22,085	7%
Other	\$721	0%	\$733	0%	\$693	0%
(3) Total Variable Costs	\$152,655	71%	\$181,685	73%	\$216,659	73%
Fixed Costs						
Licence Fee	\$15,832	7%	\$18,685	7%	\$19,316	7%
Insurance	\$6,472	3%	\$6,583	3%	\$6,492	2%
(4) Interest	\$21,951	10%	\$23,557	9%	\$26,090	9%
(5) Labour - unpaid ^d	\$7,351	3%	\$7,639	3%	\$7,500	3%
(6) Leasing	\$1,591	1%	\$1,902	1%	\$6,203	2%
Legal & Accounting	\$2,599	1%	\$2,643	1%	\$3,843	1%
Telephone etc.	\$1,669	1%	\$1,698	1%	\$1,773	1%
Slipping & Mooring	\$1,662	1%	\$1,690	1%	\$2,843	1%
Travel	\$826	0%	\$840	0%	\$2,152	1%
Office & Admin	\$2,681	1%	\$2,727	1%	\$3,992	1%
(7) Total Fixed Costs	\$62,634	29%	\$67,965	27%	\$80,203	27%
(8) Total Boat Cash Costs (3 + 7)	\$215,289	100%	\$249,650	100%	\$296,862	100%
Boat Gross Margin (1 - 3)	\$227,061		\$270,919		\$269,997	
(9) Total Unpaid Labour (2 + 5)	\$33,512		\$40,041		\$29,584	
Gross Operating Surplus (1 - 8 + 9)	\$130,914		\$162,914		\$160,210	
(10) Boat Cash Income (1 - 8)	\$164,426		\$202,955		\$189,794	
(11) Depreciation	\$45,728		\$47,916		\$42,367	
(12) Boat Business Profit (10 - 11)	\$118,698		\$155,039		\$147,427	
(13) Profit at Full Equity (12 + 4 + 6)	\$142,240		\$180,498		\$179,720	
Boat Capital						
(14) Fishing Gear & Equip	\$335,439		\$351,485		\$418,617	
Licence Value	\$2,873,997		\$3,079,283		\$3,272,079	
(15) Total Boat Capital	\$3,209,436		\$3,430,768		\$3,690,696	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	42.4%		51.4%		42.9%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	4.4%		5.3%		4.9%	

^a Financial performance estimates for 2000/01 to 2003/04 are based on the October 2001 survey of licence holders. Financial performance estimates for 2004/05 to 2006/07 are based on the April-May 2006 survey of licence holders. Financial performance estimates for 2007/08 are based on the most recent survey of licence holders. Estimates for 1997/98 to 2004/05 are provided in Appendix 4 of this report.

^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.

Table 3.4 Financial performance in the SA Southern Zone Rock Lobster fishery by return to capital quartile, 2007/08 (average per boat)

	Average per boat				
	Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1) Total Boat Gross Income	\$382,700	\$482,023	\$517,328	\$559,378	\$486,656
Variable Costs					
Fuel	\$36,615	\$37,693	\$37,264	\$45,788	\$39,453
Repairs & Maintenance ^a	\$31,231	\$26,423	\$28,560	\$21,626	\$26,867
Bait/Ice	\$20,027	\$16,760	\$18,663	\$19,561	\$18,767
Provisions	\$51	\$1,586	\$500	\$647	\$695
Labour - paid	\$140,139	\$124,891	\$79,143	\$88,605	\$108,100
(2) - unpaid ^b	\$16,822	\$18,191	\$26,976	\$26,065	\$22,085
Other	\$530	\$826	\$752	\$666	\$693
(3) Total Variable Costs	\$245,415	\$226,369	\$191,859	\$202,958	\$216,659
Fixed Costs					
Licence Fee	\$17,808	\$18,445	\$19,321	\$21,532	\$19,316
Insurance	\$7,055	\$6,388	\$6,154	\$6,378	\$6,492
(4) Interest	\$8,589	\$37,121	\$22,976	\$35,034	\$26,090
(5) Labour - unpaid ^b	\$5,712	\$6,177	\$9,161	\$8,851	\$7,500
(6) Leasing	\$0	\$2,509	\$3,750	\$17,729	\$6,203
Legal & Accounting	\$3,265	\$3,476	\$5,844	\$2,856	\$3,843
Telephone etc.	\$1,493	\$1,453	\$1,436	\$2,649	\$1,773
Slipping & Mooring	\$2,851	\$2,549	\$2,881	\$3,076	\$2,843
Travel	\$3,477	\$2,449	\$1,586	\$1,167	\$2,152
Office & Admin	\$3,498	\$4,749	\$3,431	\$4,268	\$3,992
(7) Total Fixed Costs	\$53,748	\$85,316	\$76,539	\$103,541	\$80,203
(8) Total Boat Cash Costs (3 + 7)	\$299,164	\$311,685	\$268,398	\$306,499	\$296,862
Boat Gross Margin (1 - 3)	\$137,285	\$255,654	\$325,469	\$356,419	\$269,997
(9) Total Unpaid Labour (2 + 5)	\$22,534	\$24,369	\$36,137	\$34,916	\$29,584
Gross Operating Surplus (1 - 8 + 9)	\$61,002	\$145,969	\$212,793	\$217,963	\$160,210
(10) Boat Cash Income (1 - 8)	\$83,536	\$170,338	\$248,930	\$252,879	\$189,794
(11) Depreciation	\$33,285	\$49,304	\$52,661	\$34,761	\$42,367
(12) Boat Business Profit (10 - 11)	\$50,251	\$121,034	\$196,268	\$218,118	\$147,427
(13) Profit at Full Equity (12 + 4 + 6)	\$58,840	\$160,664	\$222,994	\$270,882	\$179,720
Boat Capital					
(14) Fishing Gear & Equip	\$433,394	\$422,215	\$454,918	\$367,586	\$418,617
Licence Value	\$2,987,429	\$3,323,000	\$3,524,500	\$3,254,633	\$3,272,079
(15) Total Boat Capital	\$3,420,822	\$3,745,215	\$3,979,418	\$3,622,219	\$3,690,696
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	13.6%	38.1%	49.0%	73.7%	42.9%
Rate of Return on Total Boat Capital (13 / 15 * 100)	1.7%	4.3%	5.6%	7.5%	4.9%
Average Number of Pots ^c	64	77	79	81	76

^a 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).

^b Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

^c Average number of pots owned and leased by licence holders in each quartile.

Source: EconSearch analysis.

Table 3.5 Financial performance in the SA Southern Zone Rock Lobster fishery by number of pots, 2007/08 (average per boat)

	Average per boat			
	30 - 59 Pots	60 - 79 Pots	80 + Pots	All Boats
Total Boat Gross Income	\$312,168	\$441,491	\$601,369	\$486,656
Variable Costs				
Fuel	\$27,364	\$30,739	\$52,091	\$39,453
Repairs & Maintenance ^a	\$21,246	\$28,290	\$28,144	\$26,867
Bait/Ice	\$15,674	\$17,561	\$21,141	\$18,767
Provisions	\$201	\$219	\$1,312	\$695
Labour - paid	\$69,001	\$113,590	\$121,363	\$108,100
- unpaid ^b	\$21,128	\$18,785	\$24,184	\$21,605
Other	\$625	\$619	\$785	\$693
Total Variable Costs	\$155,238	\$209,803	\$249,021	\$216,179
Fixed Costs				
Licence Fee	\$15,683	\$16,880	\$22,961	\$19,316
Insurance	\$5,241	\$6,213	\$7,276	\$6,492
Interest	\$28,732	\$11,211	\$37,425	\$26,090
Labour - unpaid ^b	\$7,803	\$6,938	\$8,931	\$7,979
Leasing	\$1,004	\$3,428	\$10,822	\$6,203
Legal & Accounting	\$3,769	\$2,356	\$5,124	\$3,843
Telephone etc.	\$1,694	\$1,264	\$2,236	\$1,773
Slipping & Mooring	\$2,650	\$2,432	\$3,274	\$2,843
Travel	\$2,045	\$2,056	\$2,280	\$2,152
Office & Admin	\$2,725	\$3,036	\$5,352	\$3,992
Total Fixed Costs	\$71,347	\$55,812	\$105,681	\$80,682
Total Boat Cash Costs (3 + 7)	\$226,584	\$265,616	\$354,702	\$296,862
Boat Gross Margin (1 - 3)	\$156,930	\$231,688	\$352,348	\$270,477
Total Unpaid Labour (2 + 5)	\$28,931	\$25,723	\$33,115	\$29,584
Gross Operating Surplus (1 - 8 + 9)	\$114,514	\$201,598	\$279,782	\$219,378
Boat Cash Income (1 - 8)	\$85,584	\$175,876	\$246,667	\$189,794
Depreciation	\$28,616	\$38,183	\$51,932	\$42,367
Boat Business Profit (10 - 11)	\$56,968	\$137,693	\$194,735	\$147,427
Profit at Full Equity (12 + 4 + 6)	\$86,704	\$152,331	\$242,982	\$179,720
Boat Capital				
Fishing Gear & Equip	\$288,472	\$387,828	\$501,743	\$418,617
Licence Value	\$1,979,455	\$3,104,071	\$3,981,960	\$3,272,079
Total Boat Capital	\$2,267,926	\$3,491,900	\$4,483,703	\$3,690,696
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	30.1%	39.3%	48.4%	42.9%
Rate of Return on Total Boat Capital (13 / 15 * 100)	3.8%	4.4%	5.4%	4.9%
Average Number of Pots ^c	48	70	92	76

^a 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).

^b Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

^c Average number of pots owned and leased by licence holders in each pot grouping.

Source: EconSearch analysis.

Table 3.6 Financial performance in the SA Southern Zone Rock Lobster fishery by number of pots, 2007/08 (average per pot)

	Average per pot			
	30 - 59 Pots	60 - 79 Pots	80 + Pots	All Boats
(1) Total Boat Gross Income	\$6,504	\$6,264	\$6,511	\$6,436
Variable Costs				
Fuel	\$570	\$436	\$564	\$522
Repairs & Maintenance ^a	\$443	\$401	\$305	\$355
Bait/Ice	\$327	\$249	\$229	\$248
Provisions	\$4	\$3	\$14	\$9
Labour - paid	\$1,438	\$1,612	\$1,314	\$1,430
(2) - unpaid ^b	\$440	\$267	\$262	\$286
Other	\$13	\$9	\$9	\$9
(3) Total Variable Costs	\$3,234	\$2,977	\$2,696	\$2,859
Fixed Costs				
Licence Fee	\$327	\$240	\$249	\$255
Insurance	\$109	\$88	\$79	\$86
(4) Interest	\$599	\$159	\$405	\$345
(5) Labour - unpaid ^b	\$163	\$98	\$97	\$106
(6) Leasing	\$21	\$49	\$117	\$82
Legal & Accounting	\$79	\$33	\$55	\$51
Telephone etc.	\$35	\$18	\$24	\$23
Slipping & Mooring	\$55	\$35	\$35	\$38
Travel	\$43	\$29	\$25	\$28
Office & Admin	\$57	\$43	\$58	\$53
(7) Total Fixed Costs	\$1,486	\$792	\$1,144	\$1,067
(8) Total Boat Cash Costs (3 + 6)	\$4,721	\$3,769	\$3,840	\$3,926
Boat Gross Margin (1 - 3)	\$3,269	\$3,287	\$3,815	\$3,577
(9) Total Unpaid Labour (2 + 5)	\$603	\$365	\$359	\$391
Gross Operating Surplus (1 - 8 + 9)	\$2,386	\$2,861	\$3,029	\$2,901
(10) Boat Cash Income (1 - 8)	\$1,783	\$2,496	\$2,671	\$2,510
(11) Depreciation	\$596	\$542	\$562	\$560
(12) Boat Business Profit (10 - 11)	\$1,187	\$1,954	\$2,108	\$1,950
(13) Profit at Full Equity (12 + 4 + 6)	\$1,806	\$2,161	\$2,631	\$2,377
Boat Capital				
(14) Fishing Gear & Equip	\$6,010	\$5,503	\$5,432	\$5,536
Licence Value	\$41,239	\$44,044	\$43,113	\$43,273
(15) Total Boat Capital	\$47,248	\$49,547	\$48,546	\$48,810
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	30.1%	39.3%	48.4%	42.9%
Rate of Return on Total Boat Capital (13 / 15 * 100)	3.8%	4.4%	5.4%	4.9%

^a 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).

^b 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.

As expected, the average total cash costs per boat were positively correlated with the number of pots held (Table 3.5). The average interest cost incurred by the licence holders with 80 or more pots was significantly greater (30 per cent) than those with less than 60 pots. Many of the costs associated with fishing are fixed (overheads such as administration and licence fees). Accordingly, the average total cash costs per pot decreased as the number of pots held increased (Table 3.6).

Cash Income and Profit...

The separation of variable and fixed costs from total cash costs enables the calculation of boat gross margin (total boat income less total boat variable costs) as a basic measure of profit (assuming that capital has no alternative use and that as fishing activity varies there is no change in capital or fixed costs). There was a slight decrease in boat gross margin in 2007/08 (\$270,000) compared to previous years mainly due to the increase in total boat cash costs in 2007/08.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members. The average GOS of all boats in 2007/08 was estimated to be approximately \$160,000, 2 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 \$190,000 per boat.

Cash 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. Average boat business profit was estimated to be \$147,000 per boat in 2007/08, down from \$155,000 in 2006/07 (Table 3.3).

In 2007/08, the average boat business profit for boats in the first quartile was just over \$50,000. This is significantly less than that for boats in the fourth quartile (almost \$218,000) (Table 3.4).

Boat business profit was positively correlated with the number of pots held on a per boat and per pot basis. The average boat business profit for licence holders with over 80 pots was approximately \$195,000 in 2007/08. This is significantly greater than that for licence holders with less than 60 pots (\$57,000). On a per pot basis, the average boat business profit were approximately 78 per cent greater for licence holders with 80 or more pots than for those with less than 60 pots (Tables 3.5 and 3.6).

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 (almost \$180,000) was almost identical to the estimate for the previous year.

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 capital value of fishing gear and equipment per boat in 2007/08 was positively correlated with the number of pots held (Table 3.5). On a per pot basis, however, reflecting economies of scale, the value of fishing gear and equipment per pot decreased as number of pots held increased (Table 3.6).

While the rate of return to boat capital (i.e. fishing gear and equipment) for all boats is relatively high (42.9 per cent), the rate of return to total capital was estimated to average only 4.9 per cent in 2007/08. This was down slightly on the 2006/07 estimate of 5.3 per cent (Table 3.3).

The rate of return to total capital is calculated using the profit at full equity and the average investment in all capital (i.e. fishing gear and equipment and licence value). The average profit at full equity per boat in the first quartile was almost \$59,000, compared to approximately \$271,000 in the fourth quartile. This significant difference is due to the lower average gross income and higher average cash costs in the first quartile, compared to the fourth quartile. The average investment in fishing gear and equipment was higher in the first quartile (approximately \$433,000 in 2007/08) compared to the fourth quartile (\$368,000). Accordingly, in 2007/08, the average rate of return to total capital was 1.7 per cent in the first quartile and 7.5 per cent in the fourth quartile (Table 3.4).

In 2007/08, licence holders with less than 60 pots earned an average rate of return to total capital of 3.8 per cent. For licence holders with 80 or more pots the average rate of return to total capital was 5.4 per cent (Table 3.5).

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 of \$3.3 million per boat for all boats (approximately \$44,000 per pot) for 2007/08 represents the licence holders' estimate of the value of their licence, based on the 2009 survey responses.

Licence values are determined by both current earning capacity and expectations about future earnings. There were four licence transfers over the 12-month period, however, the value of these were unavailable and, therefore, cannot be used for comparison.

3.4 State and Regional Economic Impact

Estimates of the economic impact of the SZRL fishing industry on the South Australian and regional (South East⁵) economies in 2007/08 are outlined below.

3.4.1 Measuring direct and flow-on effects

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

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

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

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 South East 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. On an item-by-item basis, the expenditures were allocated between those occurring in the South East 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.

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.

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; these effects have been included in subsequent years.

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 the state and regional levels

Estimates of the economic impact generated in 2007/08 by the SZRL fishing industry in South Australia and the South East region are outlined in Tables 3.7 and 3.8, 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.

Table 3.7 The economic impact of the SA Southern Zone Rock Lobster fishing industry in South Australia, 2007/08

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	75.7	39.6%	414	40.6%	21.4	41.2%	54.0	50.3%
Processing	6.4	3.3%	19	1.9%	0.9	1.8%	1.5	1.4%
Transport	10.9	5.7%	48	4.7%	3.6	6.8%	5.2	4.9%
Retail	1.1	0.6%	15	1.5%	0.5	0.9%	0.5	0.5%
Food services	2.5	1.3%	20	2.0%	0.6	1.2%	1.0	0.9%
Capital expenditure ^b	2.6	1.4%	28	2.8%	0.9	1.7%	1.2	1.1%
<i>Total Direct</i> ^c	99.3	50.5%	545	50.6%	27.9	52.0%	63.4	57.9%
Flow-on effects								
Trade	13.3	7.0%	138	13.6%	5.0	9.6%	6.2	5.8%
Manufacturing	20.0	10.5%	60	5.8%	2.9	5.6%	4.7	4.4%
Business Services	9.8	5.1%	55	5.4%	3.6	6.9%	4.7	4.4%
Transport	5.0	2.6%	22	2.1%	1.6	3.1%	2.4	2.2%
Other Sectors	43.9	23.0%	205	20.1%	11.0	21.2%	26.2	24.4%
<i>Total Flow-on</i> ^c	92.1	48.1%	480	47.1%	24.2	46.5%	44.1	41.1%
Total ^c	191.3	100.0%	1,020	100.4%	52.0	100.2%	107.4	100.1%
Total/Direct	1.9	-	1.9	-	1.9	-	1.7	-
Total/Tonne	\$103,400	-	0.55	-	\$28,100	-	\$58,000	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 214 full-time jobs and 299 part-time jobs, that is, 513 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 3.8 The economic impact of the SA Southern Zone Rock Lobster fishing industry in the South East region, 2007/08

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	75.7	58.6%	414	55.8%	21.4	61.4%	54.0	67.9%
Processing	6.4	5.0%	24	3.2%	1.0	2.9%	1.8	2.3%
Transport	2.1	1.6%	14	1.9%	0.8	2.3%	1.0	1.3%
Retail	0.1	0.0%	1	0.1%	0.0	0.1%	0.0	0.0%
Food services	0.1	0.1%	1	0.1%	0.0	0.1%	0.0	0.1%
Capital expenditure ^b	1.6	1.3%	29	3.9%	0.7	2.1%	0.9	1.2%
Total Direct ^c	86.0	65.3%	482	61.2%	24.1	66.7%	57.9	71.7%
Flow-on effects								
Trade	8.1	6.3%	92	12.4%	3.0	8.7%	3.8	4.8%
Manufacturing	7.6	5.9%	28	3.8%	1.2	3.4%	2.2	2.7%
Business Services	2.7	2.1%	16	2.1%	1.0	2.7%	1.3	1.6%
Transport	1.9	1.5%	13	1.7%	0.7	2.1%	1.0	1.2%
Other Sectors	22.9	17.7%	117	15.7%	5.0	14.4%	13.4	16.9%
Total Flow-on ^c	43.2	33.4%	266	35.8%	11.0	31.4%	21.7	27.3%
Total ^c	129.3	100.0%	742	100.8%	34.9	100.3%	79.4	100.2%
Total/Direct	1.5	-	1.5	-	1.5	-	1.4	-
Total/Tonne	\$69,800	-	0.40	-	\$18,800	-	\$42,900	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 214 full-time jobs and 299 part-time jobs, that is, 513 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.

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 South East region by SZRL fishing enterprises summed to \$75.7 million in 2007/08 (Table 3.7), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$23.5 million (\$10.3 million in the South East region, Table 3.8).

Flow-ons to other sectors of the state economy added another \$92.3 million in output (\$43.4 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 SZRL fishery was responsible for the direct employment of around 414 full-time equivalents (fte) and downstream activities created employment of around 130 fte jobs state-wide. Flow-on business activity was estimated to generate a further 480 fte jobs state-wide (266 jobs regionally). These state-wide jobs were concentrated in the trade (138), manufacturing (60) and business services (55) sectors.

Personal income of \$21.4 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$6.5 million in downstream activities in SA. An additional \$24.2 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 \$52.0 million in SA (\$34.9 million in the South East 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 SZRL fishing industry related contribution to GSP in South Australia was \$107.4 million (\$79.4 million in the South East region), \$54.0 million generated by fishing directly, \$9.4 million generated by downstream activities and \$44.1 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 eleven-year period, 1997/98 to 2007/08. Estimates of economic impact are expressed in nominal terms, accordingly no adjustment has been made to reflect inflation.

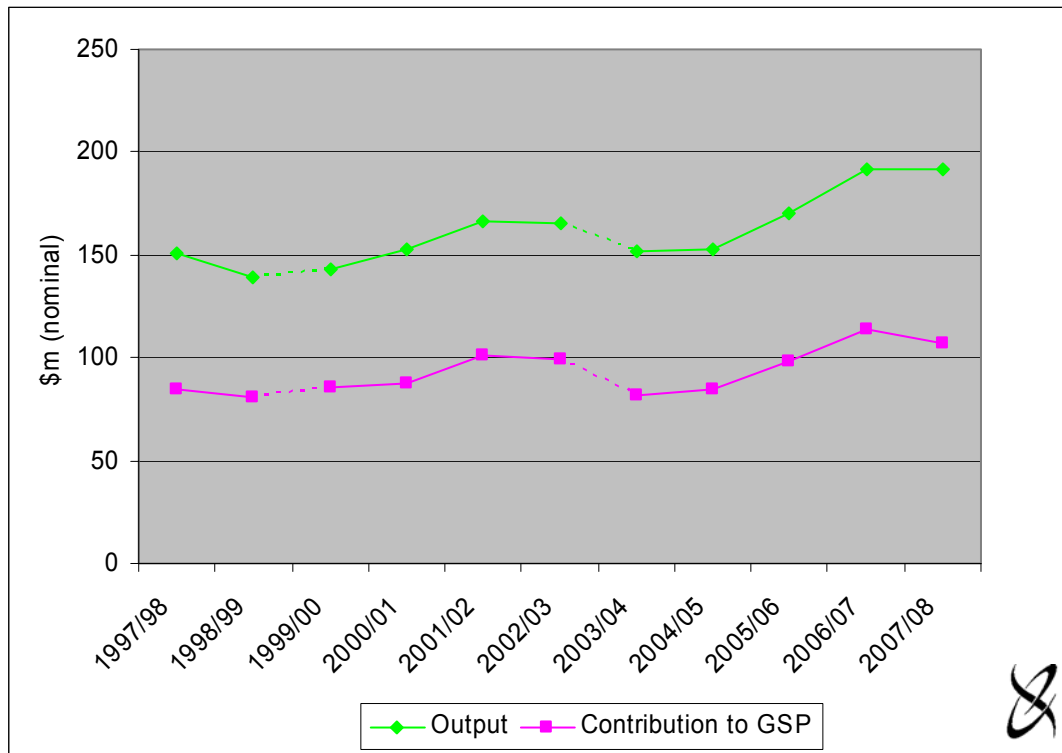
Estimates of economic impact for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on a second survey of licence holders conducted in September 2001. Estimates for 2004/05 to 2006/07 are based on the survey of licence holders conducted in 2006. Estimates of economic impact for 2007/08 are based on the most recent licence holder survey conducted in 2009.

The economic impact of the SZRL 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 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.

Figure 3.3 Total gross state product and output impact of the SA Southern Zone Rock Lobster fishing industry in SA, 1997/98 to 2007/08 ^a

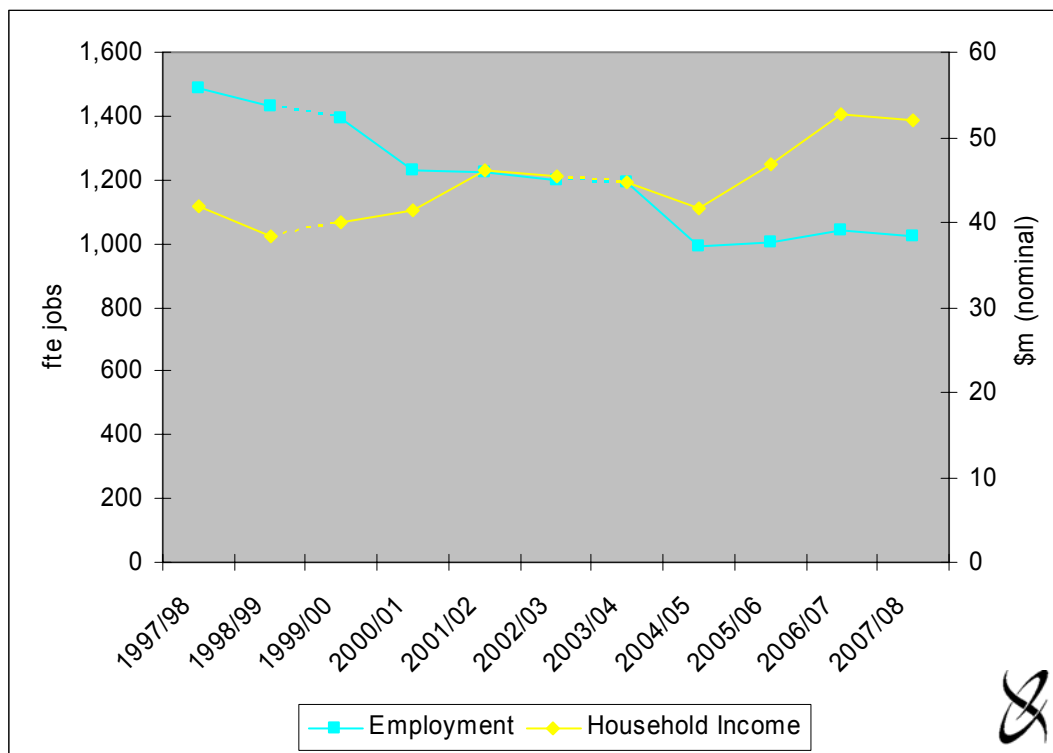


^a The economic impact of the Southern Zone Rock Lobster fishery in 1997/98 and 1998/99 does not include the direct and flow-on effects of estimated capital expenditure by licensees; these effects have been included in subsequent years. Estimates of economic impact for the period 1997/98 to 2002/03 do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

Source: EconSearch (2005a) and EconSearch analysis.

There has been a substantial decline (approximately 30 per cent) in the total employment impact of the fishery between 1997/98 and 2007/08, as illustrated in Figure 3.6. This decrease can be attributed to productivity improvements across all sectors.

Figure 3.4 Total employment and household income impact of the Southern Zone Rock Lobster fishing industry in SA, 1997/98 to 2007/08^a



^a The economic impact of the Southern Zone Rock Lobster 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 (2005a) and EconSearch analysis.

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 SZRL fishery and the good produced is the landed lobster.

The 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

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.

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, 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 SZRL fishery in 2007/08 was estimated to be approximately \$20.6 million, a significant decrease on 2006/07 (Table 3.9).

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 2007/08 aggregate value of licences was estimated to be \$515.9 million (181 licences with an average value of \$2.9 million per licence or \$44,000 per pot). An annual economic rent of \$20.6 million represents a return of 4.0 per cent to the capital value of the fishery.

Table 3.9 Economic rent^a in the SA Southern Zone Rock Lobster 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	50,872	19,495	13,851	4,887	4,285	8,353
1998/99	47,165	18,686	12,014	4,921	4,315	7,230
1999/00	51,163	20,764	11,031	4,981	4,367	10,020
2000/01	54,738	19,325	13,516	7,142	5,162	9,593
2001/02	65,671	23,771	12,913	6,901	4,988	17,098
2002/03	63,838	24,031	12,792	8,018	5,795	13,202
2003/04	49,319	19,497	13,899	7,975	5,765	2,183
2004/05	54,397	15,060	13,319	8,303	6,091	11,625
2005/06	65,737	18,620	14,851	7,917	5,807	18,542
2006/07	78,791	22,935	16,424	8,341	6,119	24,972
2007/08	75,731	21,330	20,710	6,593	6,514	20,583

^a Adjusted for sample bias.

Source: EconSearch analysis.

4. Other Indicators

4.1 Factors Influencing the Economic Condition of the 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.

Stock status

In 2007, PIRSA published a report on the current biological status of commercial fishery in SA (PIRSA 2007). In this report the SZRL fishery is classified as being fully fished. The report of the biological status of SA commercial fisheries is scheduled to be updated and published every two years.

Stock Assessment

The priority of the management of the fishery is to ensure the sustainability of rock lobster stocks. In order to achieve this, biological indicators have been developed with targets and reference points used as a benchmark of performance against objectives. Reference points can be used to trigger a management response when required. A new management plan for the fishery was introduced in September 2007, which has refined the performance indicators and reference levels. In particular, the management plan focuses on two key performance indicators, catch rate and pre-recruit index.

The SZRL fishery biological performance indicators for the seasons 2002/03 to 2007/08 are summarised in Table 4.1. Over that period total catch has increased following an increase in the TACC but catch rate has declined.

Table 4.1 Biological performance indicators for the SA Southern Zone Rock Lobster fishery, 2002/03 to 2006/07

Indicator	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Catch (tonnes)	1,766	1,896	1,897	1,889	1,894	1,850
Catch Rate (kg/pot lift)	2.1	1.8	1.8	1.6	1.4	1.1
Pre-recruit Index ^a	1.77	1.33	1.31	1.03	1.44	0.69

^a The pre-recruitment index reflects the mean number of undersize lobsters per pot lift.

Source: Linnane et. al (2004, 2005, 2006 and 2008).

Export Markets

Hong Kong, Japan and China are the main export destinations for SA rock lobster exports, as outlined in Section 4.3. Traceability systems and a quality assurance program are being developed to assist in securing other export markets such as in the United States (US) and the European Union (EU). The EU is a rapidly growing export market and has a large consumer base.

The Australian Southern Rock Lobster industry is currently undertaking a market development project in the US. The project focuses on the development of supply chain, distribution and communication tools to facilitate penetration into the Super-Premium-Fine-Dining (SPFD) sector.

Through product trails and training it is intended that the project will provide an avenue for entry into the US's SPFD sector through:

- establishing the capacity to guarantee a product to the marketplace in accordance with market values / meeting specifications;
- establishing the capacity to deliver quality product to the marketplace on a consistent basis;
- creating the most effective communication tool to engage the marketplace; and
- trialling the standards based supply chain management system to deliver the "Ultimate Offer and Guarantee" to the SPFD sector at an increased value per lobster.

The project is focused on the supply of larger lobsters, 2kg plus, into the high-end of the USA fine dining market, as opposed to the smaller product currently supplied to the Chinese market.

Exchange Rate

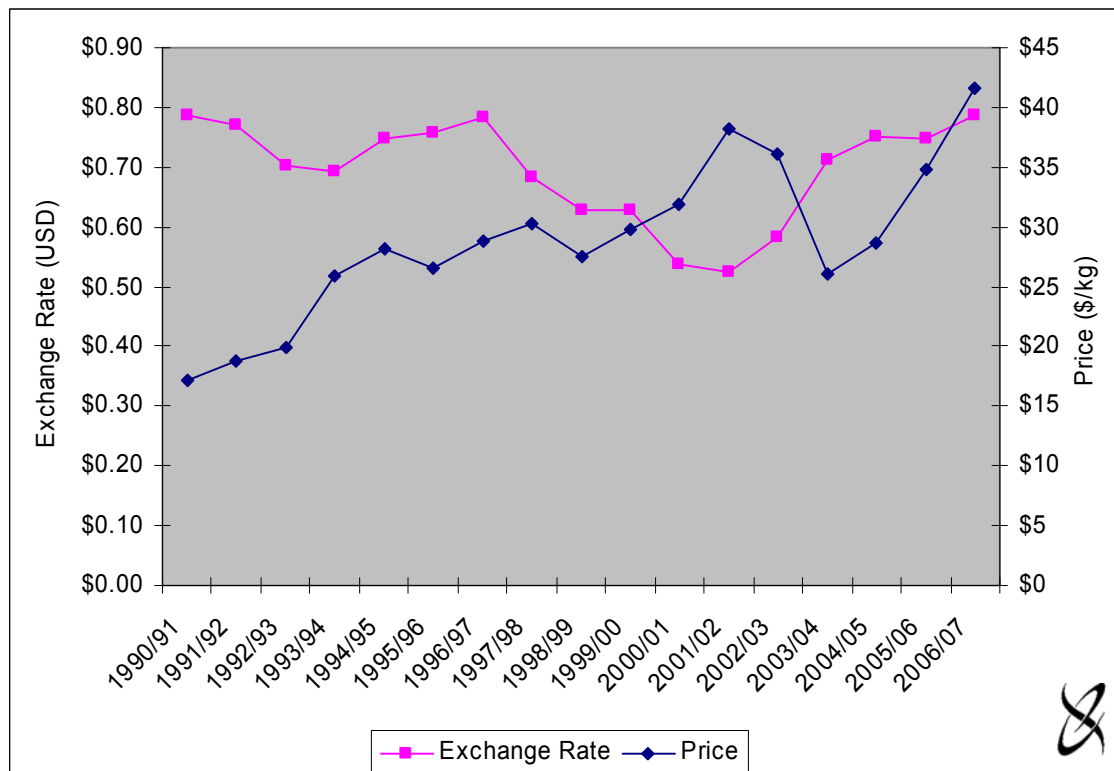
A significant proportion of the South Australian rock lobster catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery. The value of the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar have the potential to influence the demand for Australian rock lobster exports. The Australian dollar remained relatively stable throughout 2007/08, ranging between US83 cents and US95 cents. This average rate is higher than 2006/07 when the value of the dollar ranged from US75 cents to US84 cents. There has been incremental growth in the value of the AUD since 2000/01 when the dollar fell to around US50 cents.

The average exchange rate in 2007/08 was US89.67cents compared to US78.63cents in 2006/07, an increase of 14 per cent. Other things held equal, a rise in the value of the currency would have the effect of decreasing the price of rock lobster received by Australian exporters between 2006/07 and 2007/08.

The most significant export destination for South Australian rock lobster exports in 2007/08 was Hong Kong. Thus it may be useful to consider the value of the Australian dollar compared with the Hong Kong dollar (HKD). The average rate of exchange in 2007/08 was 6.99 HKD an increase of 14 per cent compared to the previous year (6.13 HKD).

The relationship between the average price in the SZRL fishery and the exchange rate over the past 16 years can be observed in Figure 4.1.

Figure 4.1 Exchange rate (USD) and average price for SA Southern Zone Rock Lobster, 1990/91 to 2007/08



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

A widely used measure of the relationship between two variables, such as price and exchange rate, is the coefficient of correlation. The coefficient of correlation can range in value from 1.0 for a perfect positive correlation to -1.0 for a perfect inverse correlation. The coefficient of correlation between the exchange rate (USD) and the average price in the SZRL fishery for the period 1990/91 to 2007/08 is -0.11 . This indicates that there is a somewhat inverse relationship between the two variables. Thus, when the Australian dollar appreciates, with other factors held constant, there is, generally, a corresponding decline in the average price in the SZRL fishery.

4.2 Licence Holder Comments

During the 2009 survey licence holders raised several key issues that have potential to affect the economic performance of the fishery.

Management

Some licence holders indicated that the introduction of quota had markedly improved their productivity levels but catch rates had declined recently. Some suggested that the TAC needed to be reduced. Some licence holders felt that the fishery currently has too many boats and the government/other licence holders should buy back some licences to take the pressure off.

Several licence holders indicated that they felt the fishery was well managed due to the level of cooperation between scientists, managers and licence holders.

Some licence holders suggested that there needed to be greater monitoring of recreational pot holders to ensure that the management of the fishery is based on complete information about catch. It was suggested that recreational pot holders are issued with tags to assist in monitoring catch levels.

Stocks

A number of licence holders were concerned about fishers targeting the smaller fish and discarding the larger fish. The price per kilogram is more favourable for smaller fish, however this practice results in more individuals being taken per tonne of catch. There were some concerns regarding the sustainability of the stock of small, red fish, due to the targeting of these fish.

Some licence holders indicated that the quota was too high and needed to be reduced to prevent declining fish stocks. Some licence holders have experienced declining catch rates in recent years and suggested a major reduction in TAC was required.

A number of licence holders indicated that they had to work harder in 2007/08 to catch their quota, some indicating that they fell slightly short of their quota. Although some licence holders indicated that not reaching quota was a commercial decision based on low prices and high costs.

Some licence holders indicated that fishing grounds close to shore were under pressure as licence holders prefer these grounds due to fuel costs associated with travelling further afield.

Illegal Fishing

Some licence holders who participated in the survey highlighted illegal fishing as a significant threat to the sustainability of the fishery's stocks. The concerns raised were generally in regard to the recreational sector, with many licence holders indicating that this sector was under-regulated.

Marine Parks

A large number of licence holders were concerned about marine parks and the implications for their businesses. Introduction of marine parks will put pressure on the fishing grounds that aren't in the protected areas. The number of boats in the fishery will need to be reduced in accordance with the amount of fishing grounds lost.

Several licence holders indicated that their fishing practices had minimal negative environmental impact and marine parks were not needed. Some licence holders felt that the introduction of marine parks contradicted the management of the fishery by PIRSA and licence holders.

Licence holders indicated that the introduction of marine parks would result in them having to move to different fishing grounds. There are costs associated with getting to know new fishing grounds such as time (labour) and fuel.

Prices for Catch

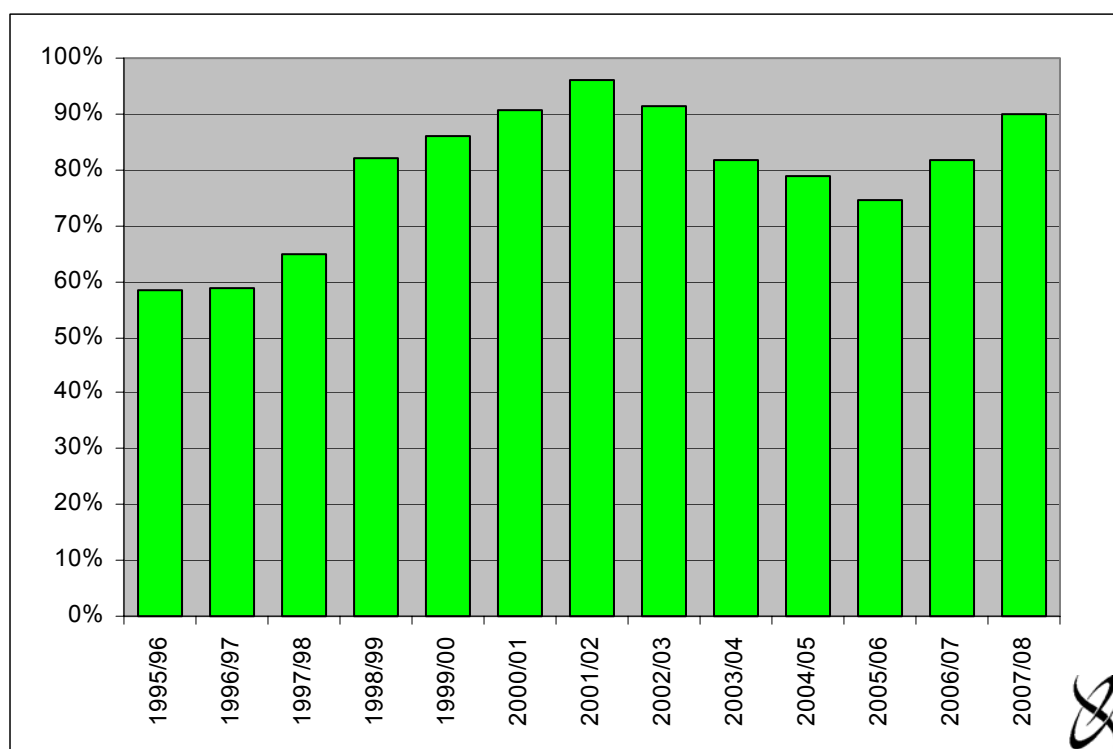
A number of licence holders indicated the price received for fish was low in 2007/08 and that at times it was unviable to fish (i.e. the cost of catching fish exceeded the value of catch).

The differential pricing of small and large fish creates an incentive for licence holders to throw back larger fish. Some licence holders indicated that this needed to be taken into account in the setting of the TAC for the fishery. A small number of licence holders suggested the introduction of a split quota (i.e. a separate quota for small and large fish), although they acknowledged that this would cause additional regulatory burden on licence holders.

4.3 Rock Lobster Exports from South Australia

Figures 4.2 to 4.6 and the associated data in Appendix Tables 2.1 to 2.4 provide an historical breakdown of total rock lobster exports from SA, by category and country of destination, for the period 1995/96 to 2007/08⁹.

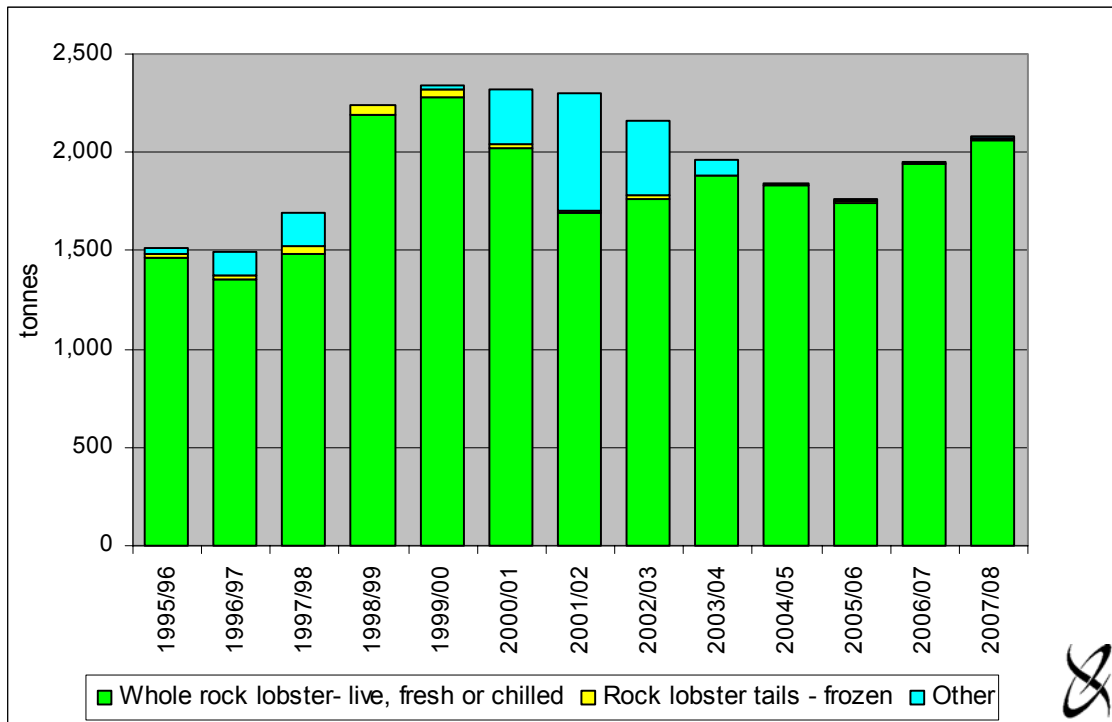
Figure 4.2 Rock lobster exports from South Australia as a proportion of total catch, 1995/96 to 2007/08



Source: Appendix Table 2.1 and Table 3.1

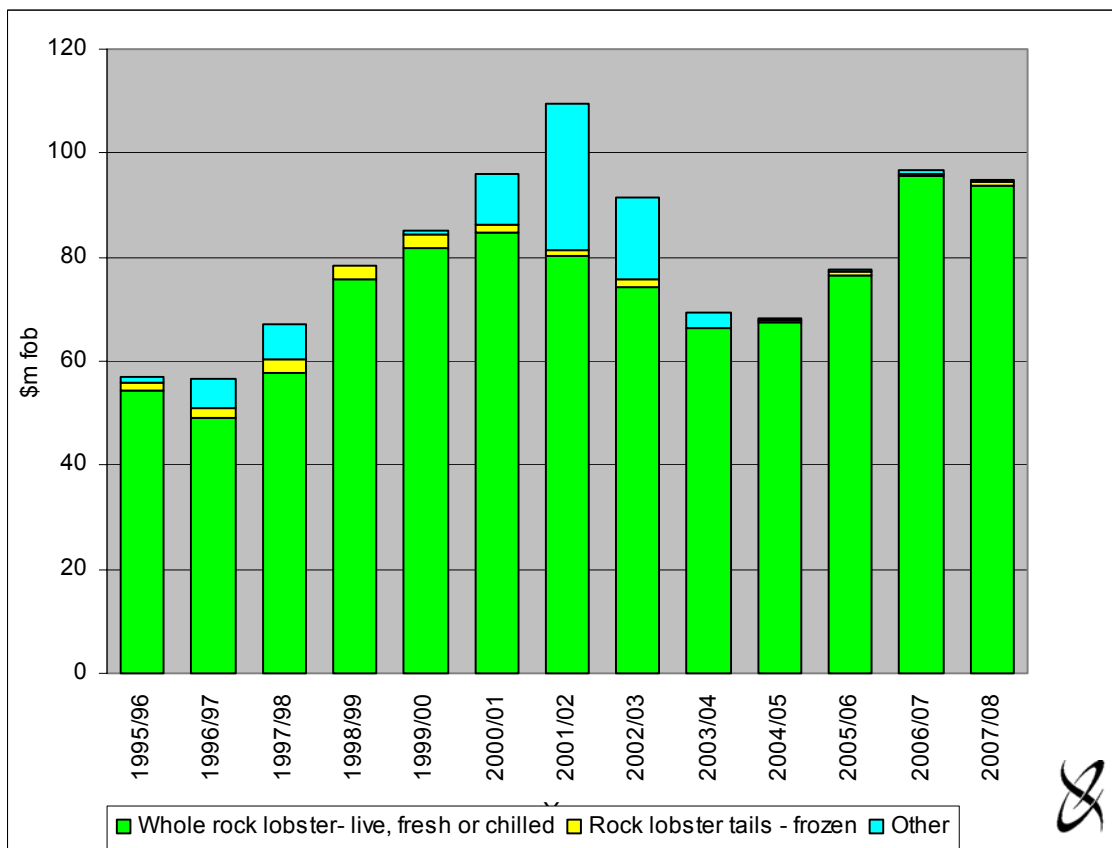
⁹ That is, exports from the northern and southern rock lobster fisheries in aggregate. These data only include exports direct from South Australia, not product that is shipped interstate and then exported. They could also include product that is shipped from interstate and exported from South Australia.

Figure 4.3 Rock lobster exports from South Australia, quantity (t) by category, 1995/96 to 2007/08



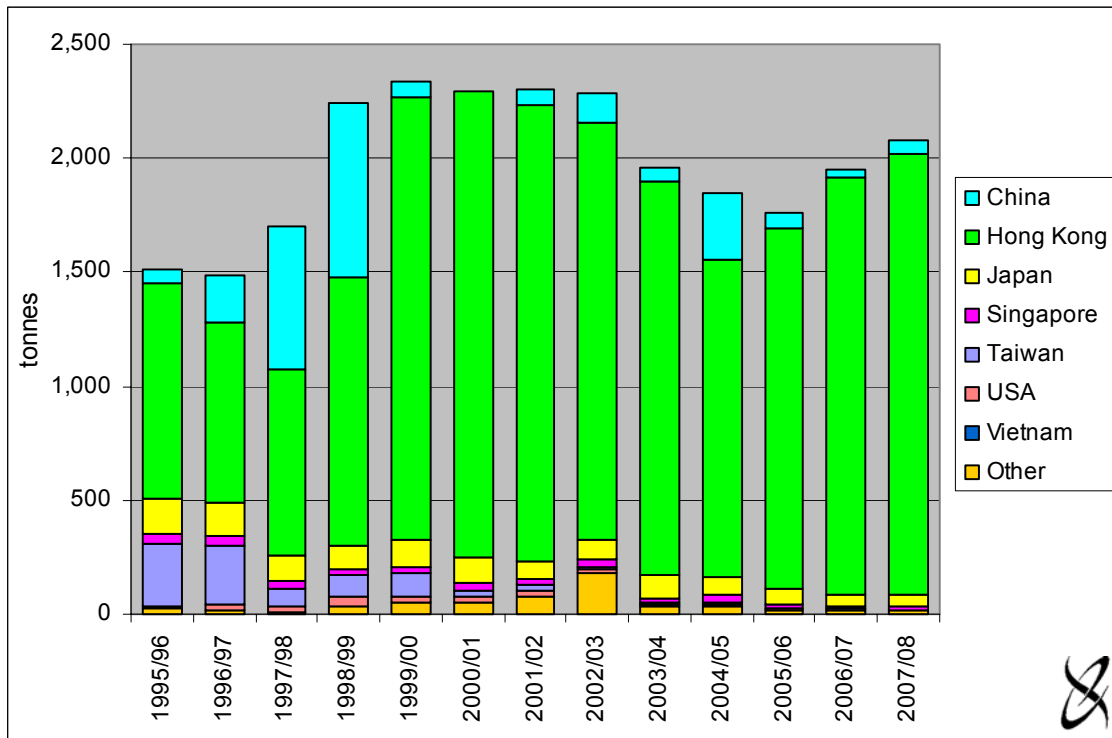
Source: Appendix Table 2.1.

Figure 4.4 Rock lobster exports from South Australia, value (\$m fob) by category, 1995/96 to 2007/08



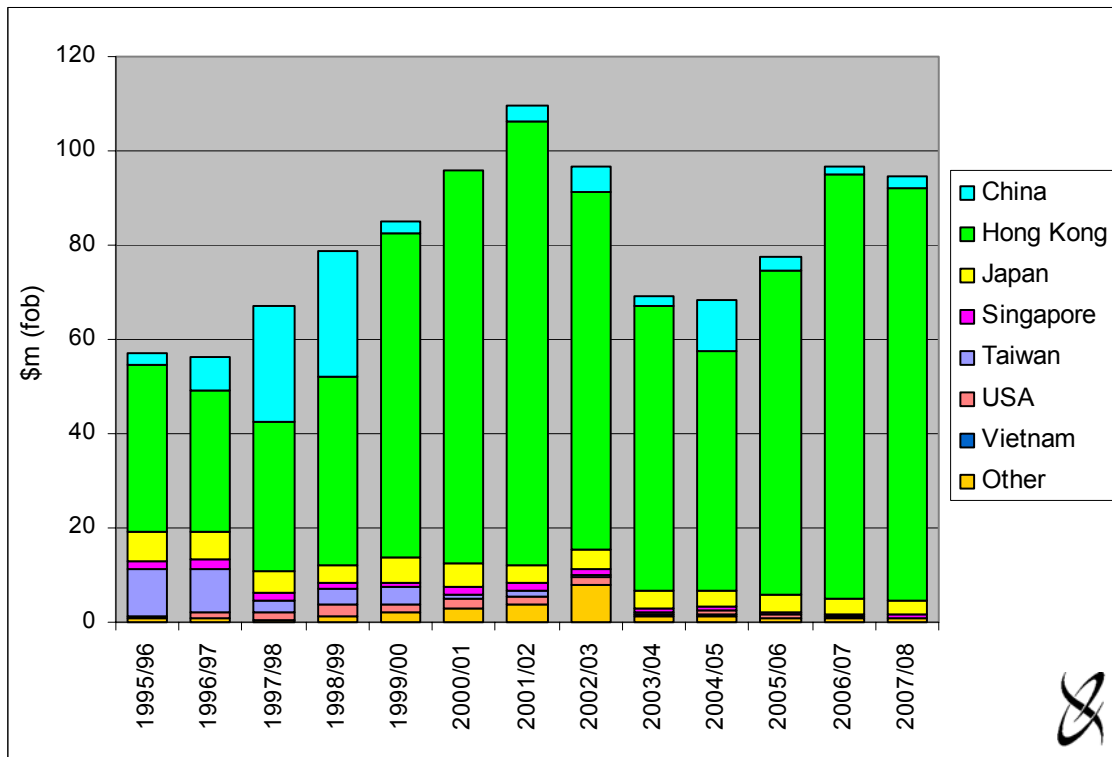
Source: Appendix Table 2.2.

Figure 4.5 Rock lobster exports from South Australia, quantity (t) by country of destination, 1995/96 to 2007/08



Source: Appendix Table 2.3.

Figure 4.6 Rock lobster exports from South Australia, value (\$m fob) by country of destination, 1995/96 to 2007/08



Source: Appendix Table 2.4.

As a proportion of total rock lobster catch, rock lobster exports from South Australia increased from 58 per cent in 1995/96 to over 95 per cent in 2001/02. The proportion of catch exported declined between 2001/02 and 2004/05 (74 per cent) but has since increased and was 90 per cent in 2007/08 (Figure 4.2).

Between 1995/96 and 2001/02, the total quantity of rock lobster exported from SA increased by approximately 52 per cent. The volume of rock lobster exports decreased between 2001/02 and 2005/06. The total quantity of rock lobster exported from SA has increased in subsequent years and in 2007/08 was 2,077 tonnes (Figures 4.3 and 4.5).

The total value of rock lobster exports increased in nominal terms, by approximately 92 per cent, between 1995/96 and 2001/02. The value of exports declined by approximately 38 per cent between 2001/02 and 2004/05 but has increased in subsequent years. In 2007/08, the total value of rock lobster exports from SA was approximately \$95 million (Figures 4.4 and 4.6).

Whole rock lobster (live, fresh or chilled) was the most significant category of export in all years of the analysis, accounting for, on average, 93 per cent of total exports by quantity and 93 per cent of total exports by value over the period of analysis (Figures 4.3 and 4.4). For a full breakdown of exports by category refer to Appendix Tables 2.1 and 2.2.

The most significant export destination over the period 1995/96 to 2007/08 was Hong Kong, accounting on average for 75 per cent of the total quantity and 74 per cent of the total value of exports of rock lobster (Figures 4.5 and 4.6). For a full breakdown of exports by country of destination refer to Appendix Tables 2.3 and 2.4.

The demand for seafood from countries within the EU has increased rapidly over the last decade and it has become the world's leading seafood export destination. The demand for seafood and the consumer base of the EU is likely to continue to grow in the future (MCCN May 2005). Currently rock lobster exports to EU member countries are minimal.

Following trials in London and the Napa Valley, lobster exporters are pushing for increased exports to the United Kingdom (UK) and US. Currently, the majority of lobster exports are to Hong Kong and China (Figures 4.5 and 4.6), a large proportion of the exports to Hong Kong are then transported illegally to China to avoid tariffs. A move away from these destinations towards new markets could lead to a significant increase in the value of exports (MCCN March 2005).

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Appendix 1 Economic Impact of the SA Southern Zone Rock Lobster Fishery, 2006/07

Appendix Table 1.1 The economic impact of the Southern Zone Rock Lobster fishing industry in South Australia, 2006/07

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	78.8	41.1%	424	40.6%	22.7	43.1%	61.1	53.8%
Processing	6.6	3.4%	20	2.0%	1.0	1.8%	1.5	1.4%
Transport	11.2	5.8%	51	4.9%	3.6	6.9%	5.3	4.7%
Retail	1.1	0.6%	16	1.6%	0.5	0.9%	0.6	0.5%
Food services	2.6	1.4%	22	2.1%	0.7	1.3%	1.0	0.9%
Capital expenditure ^b	3.2	1.7%	31	2.9%	1.0	1.8%	1.3	1.1%
Total Direct ^c	103.4	52.3%	564	51.1%	29.4	54.0%	70.8	61.3%
Flow-on effects								
Trade	12.6	6.6%	138	13.2%	4.7	9.0%	5.9	5.2%
Manufacturing	18.9	9.9%	59	5.7%	2.8	5.3%	4.4	3.9%
Business Services	9.3	4.9%	55	5.2%	3.4	6.5%	4.5	3.9%
Transport	4.5	2.3%	20	2.0%	1.5	2.8%	2.1	1.9%
Other Sectors	42.9	22.4%	207	19.9%	10.9	20.7%	25.7	22.7%
Total Flow-on ^c	88.3	46.0%	479	45.9%	23.2	44.2%	42.6	37.6%
Total ^c	191.7	100.0%	1,043	100.0%	52.6	100.0%	113.4	100.0%
Total/Direct	1.9	-	1.8	-	1.8	-	1.6	-
Total/Tonne	\$101,100	-	0.55	-	\$27,700	-	\$59,800	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 173 full-time jobs and 434 part-time jobs, that is, 607 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 Southern Zone Rock Lobster fishing industry in the South East region, 2006/07

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	78.8	60.6%	424	56.3%	22.7	63.7%	61.1	71.4%
Processing	6.6	5.0%	25	3.4%	1.0	2.9%	1.9	2.2%
Transport	2.2	1.7%	15	2.0%	0.8	2.3%	1.1	1.3%
Retail	0.1	0.0%	1	0.1%	0.0	0.1%	0.0	0.0%
Food services	0.1	0.1%	1	0.2%	0.0	0.1%	0.1	0.1%
Capital expenditure ^b	2.0	1.5%	29	3.8%	0.8	2.1%	0.9	1.1%
Total Direct ^c	89.7	67.4%	495	62.0%	25.4	69.1%	65.0	75.0%
Flow-on effects								
Trade	7.4	5.7%	90	11.9%	2.8	7.8%	3.5	4.1%
Manufacturing	7.3	5.6%	28	3.8%	1.2	3.2%	2.1	2.5%
Business Services	2.4	1.8%	15	1.9%	0.8	2.3%	1.1	1.3%
Transport	1.7	1.3%	12	1.6%	0.7	1.8%	0.9	1.0%
Other Sectors	21.6	16.6%	113	15.0%	4.8	13.4%	12.8	14.9%
Total Flow-on ^c	40.4	31.0%	257	34.2%	10.2	28.7%	20.4	23.8%
Total ^c	130.0	100.0%	752	100.0%	35.6	99.9%	85.5	99.9%
Total/Direct	1.5	-	1.5	-	1.4	-	1.3	-
Total/Tonne	\$68,600	-	0.40	-	\$18,800	-	\$45,100	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 173 full-time jobs and 434 part-time jobs, that is, 607 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 Rock Lobster Exports from South Australia, 1995/96 to 2007/08

Appendix Table 2.1 Rock Lobster exports from South Australia, quantity (kg) by category, 1995/96 to 2007/08

Category	Year												
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Whole rock lobster - frozen	17,712	254	0	0	0	145,255	24,166	39,382	22,679	5,829	1,177	64	2,827
Whole rock lobster- live, fresh or chilled	1,465,501	1,352,898	1,487,904	2,187,018	2,284,822	2,025,710	1,695,170	1,763,339	1,877,960	1,828,341	1,743,730	1,937,308	2,061,812
Rock lobster tails - frozen	16,624	25,713	40,790	50,833	36,592	18,862	10,187	18,879	3,264	5,044	9,592	6,734	12,506
Rock lobster tails - fresh or chilled	0	10,244	0	1,190	1,338	941	2,141	1,341	2,681	4,903	2,055	0	0
Other	10,685	100,740	168,410	685	15,499	130,230	569,788	338,494	51,378	0	3,015	9,901	23
Total	1,510,522	1,489,849	1,697,104	2,239,726	2,338,251	2,320,998	2,301,452	2,161,435	1,957,962	1,844,117	1,759,569	1,954,007	2,077,168

Source: Australian Bureau of Statistics (by request).

Appendix Table 2.2 Rock Lobster exports from South Australia, value (\$'000 fob) by category, 1995/96 to 2007/08

Category	Year												
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Whole rock lobster - frozen	730	14	0	0	0	5,180	1,167	1,864	991	326	114	8	214
Whole rock lobster- live, fresh or chilled	54,517	49,154	57,600	75,575	81,678	84,725	80,437	74,221	66,367	67,361	76,611	95,617	93,805
Rock lobster tails - frozen	1,313	1,914	2,736	2,863	2,586	1,444	1,044	1,466	172	331	750	540	713
Rock lobster tails - fresh or chilled	0	918	0	90	100	42	162	130	157	276	90	0	0
Other	402	4,443	6,887	22	631	4,597	26,618	13,844	1,580	0	116	534	1
Total	56,962	56,443	67,222	78,549	84,995	95,990	109,429	91,525	69,268	68,295	77,681	96,698	94,732

Source: Australian Bureau of Statistics (by request).

Appendix Table 2.3 Rock Lobster exports from South Australia, quantity (kg) by country of destination, 1995/96 to 2007/08

Country of Destination	Year												
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Canada	0	0	0	13	2,180	1,360	110	124,844	0	18	0	0	0
China	59,661	208,695	620,032	761,667	70,602	5,284	69,366	124,844	55,805	292,265	70,230	35,193	56250
Denmark	0	0	0	0	0	0	0	0	0	0	33	54	0
France	0	0	0	6,504	23,763	38,493	34,577	21,899	7,590	3,265	6,799	4,577	3513
Germany	0	0	0	300	2,243	0	556	0	0	0	71	0	0
Hong Kong	946,297	793,609	818,785	1,178,555	1,941,392	2,042,772	1,995,842	1,833,031	1,732,694	1,387,463	1,574,584	1,832,744	1932782
Italy	3,200	5,440	6,130	15,125	14,677	20,950	17,966	15,700	11,070	8,006	5,222	2,619	1971
Japan	156,624	140,602	112,604	98,438	119,005	113,411	78,688	89,617	96,529	82,453	74,861	54,075	55550
Korea, Republic of	8,975	720	200	2,845	1,525	3,416	3,972	4,888	2,683	1,978	2,244	1,101	2160
Malaysia	1,081	2,065	2,282	1,562	2,953	6,624	17,039	8,244	10,041	12,229	4,016	5,389	5865
Philippines	117	1,925	959	0	0	0	365	25	40	72	28	0	23
Singapore	36,182	50,545	36,043	27,683	24,175	32,710	28,967	26,885	19,502	26,109	11,951	10,292	12414
Taiwan	278,819	255,526	72,156	99,460	103,480	28,739	27,983	8,210	806	100	0	395	0
Thailand	620	3,944	0	0	2,400	0	9	0	0	0	225	0	0
United Arab Emirates	2,460	4,530	1,533	3,865	1,525	1,655	2,934	2,240	1,380	4,670	1,453	2,398	2886
United Kingdom	100	0	0	0	300	37	0	0	0	19	385	20	200
USA	10,346	22,018	25,630	43,589	27,861	24,595	22,800	22,023	5,979	9,111	7,358	5,117	2441
Vietnam	0	0	0	0	0	0	0	0	13,843	13,184	58	0	76
Total	1,510,522	1,489,849	1,697,104	2,239,726	2,338,251	2,296,366	2,301,452	2,283,876	1,957,962	1,844,117	1,759,572	1,954,007	2,077,168

Source: Australian Bureau of Statistics (by request).

Appendix Table 2.4 Rock Lobster exports from South Australia, value (\$'000 fob) by country of destination, 1995/96 to 2007/08

Country of Destination	Year												
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Canada	0	0	0	1	266	40	7	5,246	0	2	0	0	0
China	2,328	7,480	24,525	26,368	2,601	225	3,379	5,246	2,004	10,818	2,900	1,760	2460
Denmark											4	6	0
France	0	0	0	232	889	1,512	1,525	981	266	126	296	296	226
Germany	0	0	0	13	70	0	24	0	0	0	7	0	0
Hong Kong	35,350	29,860	31,864	40,067	68,521	83,350	93,882	75,895	60,431	50,669	68,924	90,050	87886
Italy	103	166	234	532	566	867	890	816	449	331	238	145	78
Japan	6,500	5,977	4,784	3,824	5,374	5,023	3,834	4,465	4,015	3,416	3,648	3,074	2785
Korea, Republic of	395	24	11	137	60	160	215	253	125	88	106	64	91
Malaysia	42	90	88	62	112	290	843	358	342	466	232	267	281
Philippines	5	73	41	0	0	0	19	1	1	2	2	0	1
Singapore	1,426	2,073	1,479	1,051	1,014	1,383	1,554	1,173	713	1,024	669	533	584
Taiwan	10,085	9,040	2,666	3,346	3,757	1,166	1,234	357	25	12	0	16	0
Thailand	22	148	0	0	101	0	1	0	0	0	9	0	0
United Arab Emirates	94	190	61	127	62	88	162	108	52	173	62	130	137
United Kingdom	3	0	0	0	10	4	0	0	0	2	30	2	21
USA	465	1,313	1,444	2,785	1,586	1,842	1,844	1,734	332	500	543	351	143
Vietnam						0	0	0	511	522	4	0	3
Total	56,962	56,443	67,222	78,549	84,995	94,144	109,429	96,697	69,268	68,295	77,681	96,698	94,732

Source: Australian Bureau of Statistics (by request).

Appendix 3 Summary Economic Indicators for South Australian Commercial Fisheries

Appendix Table 3.1 Commercial fisheries catch, South Australia, 1990/91 – 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 and 2004/05.

^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 – 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	7.1	18.5	19.8	222.1

^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 and 2003/04.

^b Excludes south east non-trawl, tuna, deep water trawl. SARDI estimates for the years 1990/91 to 2002/03, revalued SARDI estimates for 2003/04 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	263	7,143	3.7%	2,443	\$0.11	37	\$7,102
Marine Scalefish ^b	2,014	19,847	10.1%	2,978	\$0.68	349	\$4,184
Sardines	804	18,517	4.3%	30,355	\$0.03	14	\$57,410
Total SA	11,075	222,066	5.0%	41,915	\$0.26	750	\$14,766

^a Excludes the River fishery.

^b Licence fees include access/entitlement fees paid by rock lobster and lakes and Coorong licence holders. Number of licence holders and average fee per licence holder relates only to marine scalefish licence holders and excludes access/entitlement holders from other fisheries.

Source: 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 Pot Sector a	Blue Crabs MS Sector a	Marine Scalefish b	Sardines	Lakes and Coorong
Gross Income	946.9	321.8	870.3	452.6	347.8	5,327.8	301.0	95.1	1,315.9	216.3
Costs										
Fuel	15.8	24.8	57.9	23.9	44.9	556.6	44.1	11.2	199.5	14.8
R&M	39.0	14.1	49.0	21.6	16.9	486.3	52.0	8.7	98.8	6.8
Labour	241.9	120.8	291.8	125.3	149.5	1,333.3	102.8	42.0	540.8	85.0
Licence fee	67.4	26.9	24.9	18.7	21.3	266.6	24.8	5.0	56.4	9.8
Insurance	7.1	19.5	20.4	6.6	8.9	66.1	10.0	1.9	30.6	1.6
Interest	5.3	31.1	44.8	23.6	34.2	647.1	9.0	4.5	84.9	5.3
Admin & Other	54.1	25.5	56.6	22.5	50.0	284.7	27.4	11.7	101.0	28.0
Total Cash Costs	430.6	262.8	545.5	242.1	325.7	3,640.7	270.1	84.9	1,112.0	151.2
Cash Operating Surplus	516.3	59.0	324.8	210.5	22.2	1,687.1	30.9	34.8	203.9	65.1
Depreciation	66.3	129.8	142.2	46.0	60.5	325.9	22.5	18.3	211.7	22.0
Earnings Before Tax	449.9	-70.8	182.6	164.5	-38.4	1,361.2	8.4	-13.3	-7.8	43.2
EBIT c	455.3	-39.7	227.4	188.1	-4.1	2,008.3	17.4	-8.7	77.1	48.4
Capital										
Fishing Gear & Equipment	332.7	960.9	1,289.6	337.1	470.9	3,262.2	189.9	130.1	2,763.6	148.1
Licence Value	7,947.3	2,695.3	4,966.9	3,079.3	1,577.5	27,369.1	1,429.5	183.9	3,318.7	214.0
Total Capital	8,280.0	3,656.2	6,256.5	3,416.4	2,048.3	30,631.3	1,619.4	313.9	6,082.3	362.1
Rate of Return to Gear/Equip	136.8%	-4.1%	17.6%	55.8%	-0.9%	61.6%	9.2%	-6.7%	3.6%	32.7%
Rate of Return to Capital	5.5%	-1.1%	3.6%	5.5%	-0.2%	6.6%	1.1%	-2.8%	1.7%	13.4%

^a Estimates of financial performance for the blue crab fishery have been presented on a whole of sector basis. The survey estimate of gross income for the blue crab – pot sector is higher than the SARDI estimate of \$3.32 million for 2004/05 presented in Appendix Table 3.2. The reason for the difference is likely to be that the SARDI estimate is based on Adelaide prices only, whereas licence holders are selling to the higher priced Sydney and Melbourne markets as well.

^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 Pot Sector	Blue Crabs MS Sector	Marine Scalefish ^a	Sardines	Lakes & Coorong
Fuel	4%	9%	11%	10%	14%	15%	16%	13%	18%	10%
R&M	9%	5%	9%	9%	5%	13%	19%	10%	9%	4%
Labour	56%	46%	53%	52%	46%	37%	38%	49%	49%	56%
Licence fee	16%	10%	5%	8%	7%	7%	9%	6%	5%	6%
Insurance	2%	7%	4%	3%	3%	2%	4%	2%	3%	1%
Interest	1%	12%	8%	10%	11%	18%	3%	5%	8%	3%
Admin & Other	13%	10%	10%	9%	15%	8%	10%	14%	9%	19%
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 (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 655 full-time and 1,398 part-time, that is, 2,053 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, 1997/98 to 2004/05

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

	1997/98		1998/99		1999/00	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$282,282		\$263,143		\$287,008	
Variable Costs						
Fuel	\$15,486	8%	\$12,657	7%	\$14,367	8%
Repairs & Maintenance ^c	\$18,415	9%	\$16,201	9%	\$12,565	7%
Bait/Ice	\$9,482	5%	\$8,233	5%	\$6,229	3%
Provisions	\$3,617	2%	\$3,182	2%	\$2,468	1%
Labour - paid	\$79,973	41%	\$76,824	43%	\$86,171	46%
(2) - unpaid ^d	\$23,433	12%	\$22,510	13%	\$25,249	13%
Other	\$2,408	1%	\$2,440	1%	\$2,502	1%
(3) Total Variable Costs	\$152,814	79%	\$142,048	79%	\$149,551	80%
Fixed Costs						
Licence Fee	\$13,152	7%	\$10,810	6%	\$10,179	5%
Insurance	\$4,459	2%	\$3,746	2%	\$3,466	2%
(4) Interest	\$9,274	5%	\$8,560	5%	\$9,478	5%
(5) Labour - unpaid ^d	\$4,771	2%	\$4,917	3%	\$5,056	3%
(6) Leasing	\$2,006	1%	\$1,824	1%	\$1,974	1%
Legal & Accounting	\$2,003	1%	\$2,030	1%	\$2,081	1%
Telephone etc.	\$1,338	1%	\$1,356	1%	\$1,390	1%
Slipping & Mooring	\$1,329	1%	\$1,346	1%	\$1,380	1%
Travel	\$1,391	1%	\$1,409	1%	\$1,444	1%
Office & Admin	\$1,770	1%	\$1,793	1%	\$1,838	1%
(7) Total Fixed Costs	\$41,492	21%	\$37,790	21%	\$38,285	20%
(8) Total Boat Cash Costs (3 + 7)	\$194,307	100%	\$179,838	100%	\$187,836	100%
Boat Gross Margin (1 - 3)	\$129,468		\$121,094		\$137,457	
(9) Total Unpaid Labour (2 + 5)	\$28,204		\$27,427		\$30,306	
Gross Operating Surplus (1 - 8 + 9)	\$116,180		\$55,877		\$68,867	
(10) Boat Cash Income (1 - 8)	\$87,976		\$83,304		\$99,172	
(11) Depreciation	\$27,120		\$27,455		\$27,942	
(12) Boat Business Profit (10 - 11)	\$60,856		\$55,849		\$71,230	
(13) Profit at Full Equity (12 + 4 + 6)	\$72,135		\$66,233		\$82,681	
Boat Capital						
(14) Fishing Gear & Equip	\$237,777		\$240,717		\$244,988	
Licence Value	\$1,342,357		\$1,232,869		\$1,544,832	
(15) Total Boat Capital	\$1,580,134		\$1,473,586		\$1,789,820	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	30.3%		27.5%		33.7%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	4.6%		4.5%		4.6%	

^a Financial performance estimates for 1997/98 to 1999/00 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 Southern Zone Rock Lobster fishery, 2000/01 to 2002/03 (average per boat) ^a

	2000/01		2001/02		2002/03	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$300,610		\$364,660		\$354,481	
Variable Costs						
Fuel	\$15,502	8%	\$13,219	6%	\$13,016	6%
Repairs & Maintenance ^c	\$12,299	6%	\$10,953	5%	\$10,912	5%
Bait/Ice	\$7,954	4%	\$5,908	3%	\$5,804	3%
Provisions	\$285	0%	\$254	0%	\$253	0%
Labour - paid	\$83,531	42%	\$104,717	48%	\$105,747	48%
(2) - unpaid ^d	\$17,822	9%	\$22,342	10%	\$22,562	10%
Other	\$4,472	2%	\$4,595	2%	\$4,780	2%
(3) Total Variable Costs	\$141,864	72%	\$161,989	74%	\$163,074	74%
Fixed Costs						
Licence Fee	\$12,427	6%	\$13,215	6%	\$12,884	6%
Insurance	\$4,071	2%	\$4,184	2%	\$4,352	2%
(4) Interest	\$17,239	9%	\$16,201	7%	\$15,993	7%
(5) Labour - unpaid ^d	\$4,778	2%	\$4,938	2%	\$5,130	2%
(6) Leasing	\$9,818	5%	\$11,772	5%	\$11,126	5%
Legal & Accounting	\$2,433	1%	\$2,500	1%	\$2,600	1%
Telephone etc.	\$1,227	1%	\$1,261	1%	\$1,311	1%
Slipping & Mooring	\$1,386	1%	\$1,425	1%	\$1,482	1%
Travel	\$651	0%	\$669	0%	\$696	0%
Office & Admin	\$1,701	1%	\$1,749	1%	\$1,819	1%
(7) Total Fixed Costs	\$55,732	28%	\$57,913	26%	\$57,393	26%
(8) Total Boat Cash Costs (3 + 7)	\$197,596	100%	\$219,902	100%	\$220,466	100%
Boat Gross Margin (1 - 3)	\$158,746		\$202,671		\$191,408	
(9) Total Unpaid Labour (2 + 5)	\$22,600		\$27,280		\$27,692	
Gross Operating Surplus (1 - 8 + 9)	\$80,414		\$117,478		\$106,323	
(10) Boat Cash Income (1 - 8)	\$103,014		\$144,758		\$134,015	
(11) Depreciation	\$39,221		\$38,318		\$44,520	
(12) Boat Business Profit (10 - 11)	\$63,793		\$106,440		\$89,495	
(13) Profit at Full Equity (12 + 4 + 6)	\$90,851		\$134,413		\$116,614	
Boat Capital						
(14) Fishing Gear & Equip	\$283,491		\$276,964		\$321,797	
Licence Value	\$2,378,667		\$3,600,050		\$3,499,566	
(15) Total Boat Capital	\$2,662,157		\$3,877,014		\$3,821,363	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	32.0%		48.5%		36.2%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	3.4%		3.5%		3.1%	

^a Financial performance estimates for 2000/01 to 2002/03 are based on the October 2001 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 4.3 Financial performance in the SA Southern Zone Rock Lobster fishery, 2003/04 to 2004/05 (average per boat) ^a

	2003/04		2004/05	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$273,860		\$314,212	
Variable Costs				
Fuel	\$15,730	8%	\$18,161	10%
Repairs & Maintenance ^c	\$13,362	7%	\$16,624	9%
Bait/Ice	\$7,158	4%	\$8,906	5%
Provisions	\$310	0%	\$299	0%
Labour - paid	\$84,836	42%	\$59,044	32%
(2) - unpaid ^d	\$18,100	9%	\$20,862	11%
Other	\$4,924	2%	\$688	0%
(3) Total Variable Costs	\$144,419	72%	\$124,583	67%
Fixed Costs				
Licence Fee	\$15,061	7%	\$15,762	8%
Insurance	\$4,483	2%	\$6,176	3%
(4) Interest	\$16,408	8%	\$21,683	12%
(5) Labour - unpaid ^d	\$5,327	3%	\$7,084	4%
(6) Leasing	\$8,006	4%	\$1,311	1%
Legal & Accounting	\$2,679	1%	\$2,480	1%
Telephone etc.	\$1,351	1%	\$1,593	1%
Slipping & Mooring	\$1,526	1%	\$1,586	1%
Travel	\$717	0%	\$788	0%
Office & Admin	\$1,874	1%	\$2,559	1%
(7) Total Fixed Costs	\$57,432	28%	\$61,023	33%
(8) Total Boat Cash Costs (3 + 7)	\$201,851	100%	\$185,606	100%
Boat Gross Margin (1 - 3)	\$129,441		\$189,629	
(9) Total Unpaid Labour (2 + 5)	\$23,427		\$27,946	
Gross Operating Surplus (1 - 8 + 9)	\$48,582		\$100,660	
(10) Boat Cash Income (1 - 8)	\$72,009		\$128,606	
(11) Depreciation	\$44,286		\$47,960	
(12) Boat Business Profit (10 - 11)	\$27,723		\$80,646	
(13) Profit at Full Equity (12 + 4 + 6)	\$52,137		\$103,641	
Boat Capital				
(14) Fishing Gear & Equip	\$320,105		\$351,807	
Licence Value	\$2,703,642		\$2,682,397	
(15) Total Boat Capital	\$3,023,747		\$3,034,204	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	16.3%		29.5%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	1.7%		3.4%	

^a Financial performance estimates for 2003/04 are based on the October 2001 survey of licence holders. Financial performance estimates for 2004/05 are based on the April-May 2006 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.