

Economic Indicators
for the SA Northern Zone
Rock Lobster Fishery,
2008/09

A report prepared for
Primary Industries and Resources South Australia

Prepared by



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Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
CPI	consumer price index
FRDC	Fisheries Research and Development Corporation
fob	free on board
fte	full time equivalent
GDP	gross domestic product
GSP	gross state product
GVP	gross value of production
NZRL	Northern Zone Rock Lobster
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
TACC	Total allowable commercial catch

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1. Introduction

All the major fisheries in South Australia (SA) operate in accordance with fishery management plans that determine the primary management objectives of the fishery. Economic performance indicators are a feature of these plans and annual reports on them are required for the Minister for Agriculture, Food and Fisheries to meet the obligations of section 7 of the *Fisheries Management Act 2007*.

This report is the twelfth annual economic indicators report for the SA Northern Zone Rock Lobster (NZRL) fishery. The first report, prepared for 1997/98, entitled *Economic Indicators for the SA Northern Zone Rock Lobster Fishery 1997/98* (EconSearch 1999a), reported on the results of an initial economic survey of the South Australian NZRL 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 to 2003/04 respectively, provided an update of the economic indicators based on the second survey of licence holders (EconSearch 2003, 2004 and 2005). The eighth report, prepared for 2004/05, reported the results of a third survey of licence holders, conducted in 2006 (EconSearch 2006). The ninth and tenth reports, prepared for 2005/06 and 2006/07, respectively, provided an update of the economic indicators based on the third survey of licence holders (EconSearch 2007 and 2008). The eleventh report, prepared for 2007/08, outlined the fishery's economic performance based on the results of the fourth survey of licence holders conducted in 2009 (EconSearch 2009a).

The objective of this report, *Economic Indicators for the SA Northern Zone Rock Lobster Fishery 2008/09*, was to provide an update of the economic indicators based on the results of the fourth survey of licence holders.

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

- gross value of production (catch and price);
- the cost of management of the fishery;
- a summary of factors that affect 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 2007/08, are presented in Appendix 3.

2. Method of Analysis and Definition of Terms

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

The questionnaire for the 2007/08 survey was based on the previous surveys conducted in 2004/05, 1997/98 and 2000/01¹. 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 26 licence holders participated in the survey, accounting for 38 per cent of total licence holders in the fishery. Two of the respondents indicated that they leased all of their quota in 2007/08. There were 3,950 pots in the fishery in 2007/08, pots held by survey respondents (1,173 owned and 286 leased) accounted for 36 per cent of the total pots in the fishery. Thus, the economic indicators for 2007/08 were survey-based estimates.

2.2 Updating the Indicators, 2008/09

The 2008/09 economic indicators for the Northern Zone Rock Lobster fishery were derived using a range of primary and secondary data and survey-based 2007/08 indicators. The following information was used to adjust the 2007/08 indicators to reflect the fishery's performance in 2008/09.

- SARDI data were used to reflect changes in catch size and its value between 2007/08 and 2008/09. Catch and value data were used to determine the gross income in the fishery.
- Information on change in fishing effort (number of days fished) between 2007/08 and 2008/09 was used to adjust the cost of inputs that were assumed to vary with fishing effort. These inputs included fuel, repairs and maintenance, ice and provisions.
- Price information from input suppliers was used to adjust prices that had changed, for example, fuel.
- The consumer price index (CPI) for Adelaide was used to adjust the cost of inputs to reflect local levels of inflation (ABS 2009a).

2.3 Definition of Terms²

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

Total Boat Variable Costs: are costs which are dependent upon the level of catch or, more commonly, the amount of time spent fishing. As catch or fishing time increases, variable costs also increases. 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)

¹ Surveys conducted in 1997/98 and 2000/01 are described in EconSearch (2005a). The survey conducted in 2004/05 is described in EconSearch (2006).

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

- 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

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

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

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

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 debt associated with the investment in boat capital. Profit at Full Equity is a useful absolute measure of the economic performance of fishing firms.

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

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 Northern Zone Rock Lobster Fishery

3.1 Gross Value of Production

The data shown in Table 3.1 for the period 1990/91 to 2008/09 indicate that the total rock lobster catch in the northern zone from 1993/94 to 1996/97 was significantly below the catch levels earlier in the decade. This reduced catch level can be largely attributed to a combination of pot reductions, reductions in the number of days available for fishing in the fishery and, since the introduction of quota in 2003/04, reductions in the TACC (Table 3.2). Catch levels trended upwards between 1996/97 and 1998/99, but have declined significantly since. Northern zone catch was 403 tonnes in 2008/09, a fall of 12 per cent compared to the previous year.

Table 3.1 South Australian Rock Lobster catch and value of catch, 1990/91 to 2008/09

	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
2008/09	1,407	85.4	403	19.3	1,810	104.7

Source: SARDI Aquatic Sciences

The decrease in catch since 1998/99 corresponds with a decrease in total effort in the fishery. However, since the introduction of a quota management system of 2003, there have been no direct controls on effort levels. Since then, there has been an overall increasing trend in effort. The decline in catch since 1998/99 is also consistent with a decline in lobster abundance which is discussed further in Section 4.1. A quota system was introduced in the fishery in October 2003 for the 2003/04 season, with a TACC of 625 tonnes. The TACC was then reduced for the 2004/05 and 2005/06 seasons to 520 tonnes (Linnane et al. 2006). The total catch in 2006/07 to 2008/09 was well below the TACC for the fishery. For the 2008/09 season, the TACC was reduced to 470 tonnes (Table 3.2).

Table 3.2 TACC in the Northern Zone Rock Lobster Fishery, 2003/04 to 2008/09

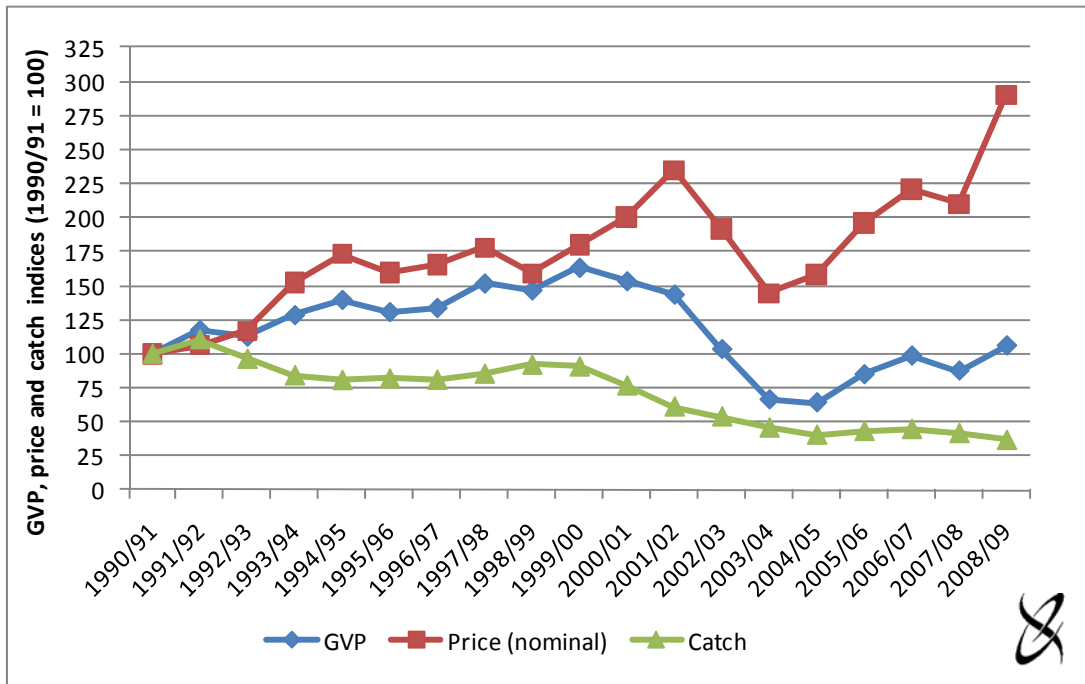
Year	Total Allowable Commercial Catch (t)
2003/04	625
2004/05	520
2005/06	520
2006/07	520
2007/08	520
2008/09	470

Source: Linnane et al. (2007, 2008, 2009a,b)

Table 3.1 and Figures 3.1 and 3.2 illustrate how the value of the fishery has changed during the 18-year period, 1990/01 to 2008/09. The nominal value of the northern zone catch in 2008/09 was only 6 per cent above that in 1990/91. This is the result of a significant fall in catch (63 per cent lower than 1990/91) and a substantial increase in price. Figures 3.1 and 3.2 show that the average price of lobster in the northern zone has increased over the 18-year period by 190 per cent in nominal terms.

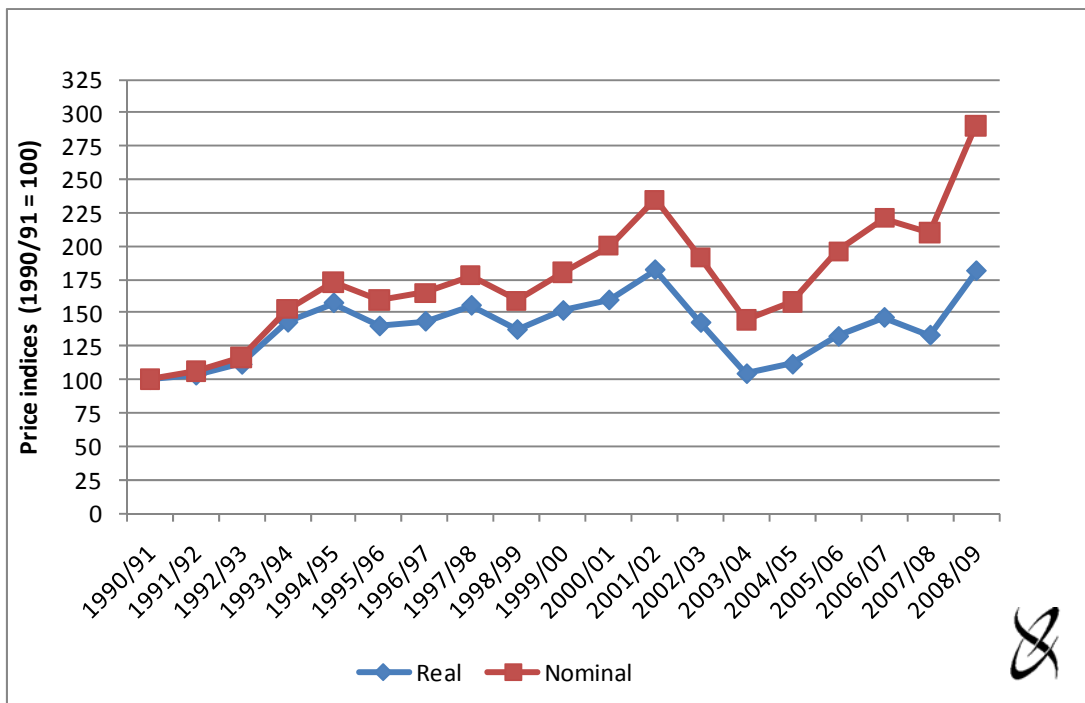
The rate of price increase for rock lobster was well above the CPI for the decade or so up until 2001/02. In the following two years there was a sharp decline in price, although it recovered in the three years from 2004/05 to 2006/07. Price decreased slightly in 2007/08 before a significant increase in 2008/09. The nominal price in 2008/09 was 190 per cent above that in 1990/91, which is equivalent to an 81 per cent real price increase (Figure 3.2). However, as a result of the significant fall in catch and despite the price increase, the value of the northern zone catch in 2008/09 was 34 per cent lower in real terms than it was in 1990/91 (6 per cent higher in nominal terms as noted above).

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



Source: SARDI Aquatic Sciences

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



Source: SARDI Aquatic Sciences and ABS (2009a)

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; and
- research services, including the Fisheries Research and Development Corporation (FRDC) levy.

For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (Will Zacharin, PIRSA, pers. comm.).

Table 3.3 shows actual licence fee receipts for the fishery for the period 1996/97 to 2009/10.

Table 3.3 Costs of management in the SA Northern Zone Rock Lobster fishery, 1996/97 to 2009/10 ^a

	Licence Fees (\$,000)	Gross Value of Production (\$,000)	Fees/GVP (%)	Catch (t)	Fee/Catch (\$/kg)	No. Licence Holders (no.)	Fee/Licence Holder (\$/licence)
1996/97	\$868	24,376	3.6%	893	\$0.97	77	\$11,278
1997/98	\$1,216	27,683	4.4%	942	\$1.29	75	\$16,208
1998/99	\$832	26,743	3.1%	1,016	\$0.82	73	\$11,397
1999/00	\$731	29,802	2.5%	1,001	\$0.73	71	\$10,293
2000/01	\$755	27,988	2.7%	846	\$0.89	69	\$10,945
2001/02	\$686	26,190	2.6%	675	\$1.02	69	\$9,938
2002/03	\$805	18,828	4.3%	595	\$1.35	69	\$11,666
2003/04	\$1,029	12,046	8.5%	504	\$2.04	69	\$14,916
2004/05	\$1,076	11,643	9.2%	446	\$2.41	69	\$15,600
2005/06	\$1,088	15,433	7.0%	476	\$2.29	69	\$15,766
2006/07	\$1,164	17,954	6.5%	492	\$2.37	68	\$17,112
2007/08	\$1,175	15,935	7.4%	459	\$2.56	68	\$17,287
2008/09	\$1,118	19,331	5.8%	403	\$2.78	68	\$16,447
2009/10	\$1,165	n.a.	-	n.a.	-	68	\$17,126

^a A number of Northern 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

Since 1996/97 the following trends have emerged.

- Licence fees as a percentage of gross value of production declined from 3.6 per cent in 1996/97 to 2.6 per cent in 2001/02 and have increased significantly since, reaching 9.2 per cent in 2004/05. Fees as a percentage of gross value of production have decreased since 2004/05 and were 5.8 per cent in 2008/09.³
- The cost of licence fees per kilogram of landed lobster increased significantly between 1996/97 to 2004/05 from \$0.97 to \$2.41. Despite a small decrease in 2005/06, licence fees per kilogram of landed lobster have increased since 2004/05 and were \$2.78 in 2008/09.
- The cost per licence holder fell from \$11,278 in 1996/97 to \$9,938 in 2001/02 but has risen in subsequent years reaching \$17,287 in 2007/08. However, between 2007/08 and 2008/09, the cost per licence holder decreased 5 per cent to \$16,447 per licence holder.

Between 2008/09 and 2009/10, licence fees increased by 4 per cent to \$17,126 per licence holder.

There are three main factors that have contributed to the trends observed from 1996/97 to 2008/09. First, aggregate licence fees have increased by approximately 34 per cent, although this has just kept pace with inflation, at a time when the management services have had to increase to accommodate the change to a quota system. Second, the catch in 2008/09 was approximately 55 per cent below that achieved in 1996/97, while the price was approximately 76 per cent higher in nominal terms. Third, the number of licence holders has fallen by around 12 per cent over the period.

3.3 Summary of Factors Affecting Costs

The information in Table 3.4 (and similar data for previous years) was used to adjust the 2007/08 financial performance indicators to reflect the costs incurred in the fishery in 2008/09.

Table 3.4 Factors affecting costs in Northern Zone Rock Lobster fishery, 2007/08 to 2008/09

	2007/08	2008/09	Change
Total Days Fished ^a	9,097	8,768	-3.6%
Price of Fuel - Transportation Index ^b	168.6	166.8	-1.0%
Price of bait (c/kg) ^c	80.4	57.2	-28.8%
Interest charges (%/annum) ^d	9.9%	9.4%	-5.1%
Labour price index ^e	116.9	121.5	3.9%
CPI Adelaide ^f	167.6	170.3	1.6%

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

^b ABS transportation index for Adelaide (ABS 2009a)

^c Price of bait from suppliers. Bait price for 2008/9 was updated according to changes in price of bony bream and carp (Angelo Tsolos pers. comm.)

^d RBA indicator lending rate for small business (RBA 2009a)

^e ABS Labour price index for SA (ABS 2009b)

^f Consumer price index for Adelaide (ABS 2009a)

³ Comparative figures for other SA commercial fisheries are provided in Appendix Table 3.3 for 2007/08. Comparative figures for 2008/09 will be provided in the forthcoming EconSearch report, *Economic Indicators for the Commercial Fisheries of South Australia, Summary Report, 2008/09*.

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

3.4 Financial Performance Indicators

The major measures of the financial performance of the surveyed boats in the SA NZRL fishery for the years 2006/07 to 2008/09 are shown in Table 3.5. Estimates for 2006/07 are based on the March-April 2006 survey of licence holders and those for 2007/08 and 2008/09 are based on the most recent licence holder survey conducted in January-February 2009. Financial performance estimates for 1997/98 to 2005/06 are provided in Appendix 4.

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 2008/09 are provided in Table 3.6. These estimates were calculated based on the 2007/08 financial performance estimates.

In addition, the survey responses were divided into two groups according to the number of licensed pots held. The first group includes those licence holders with less than 70 pots (approximately 50 per cent of survey respondents) and the second group includes licence holders with 70 pots or more (approximately 50 per cent of survey respondents)⁴. The financial performance estimates for the pot groups for 2008/09 are provided in Table 3.7 as an average per boat and in Table 3.8 as an average per pot.

Income...

Total recorded lobster catch decreased by 12 per cent between 2007/08 and 2008/09 but with a significant increase in price (38 per cent), gross receipts from sale of rock lobster increased by 21 per cent (Table 3.1). The average gross income per surveyed boat in the NZRL fishery was estimated to be almost \$336,000 in 2008/09, compared to an average of around \$277,000 per boat in the previous year, a rise of 21 per cent (Table 3.5).

⁴ Number of pots was based on pots owned and leased by the licence holders who participated in the 2009 survey of licence holders.

Table 3.5 Financial performance in the SA Northern Zone Rock Lobster fishery, 2006/07 to 2008/09 (average per boat)^a

	2006/07		2007/08		2008/09	
	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	\$347,827		\$276,790		\$335,778	
Variable Costs						
Fuel	\$44,870	14%	\$42,855	15%	\$40,877	13%
Repairs & Maintenance ^b	\$16,864	5%	\$23,574	8%	\$23,088	7%
Bait/Ice	\$14,829	5%	\$13,963	5%	\$9,166	3%
Provisions	\$4,450	1%	\$11,421	4%	\$11,185	4%
Labour - paid	\$106,978	32%	\$70,301	24%	\$88,639	29%
(2) - unpaid ^c	\$32,186	10%	\$21,357	7%	\$26,928	9%
Other	\$5,335	2%	\$976	0%	\$992	0%
(3) Total Variable Costs	\$225,511	68%	\$184,447	63%	\$200,875	65%
Fixed Costs						
Licence Fee	\$21,261	6%	\$20,752	7%	\$19,744	6%
Insurance	\$8,911	3%	\$7,427	3%	\$7,546	2%
(4) Interest	\$34,222	10%	\$42,709	15%	\$40,552	13%
(5) Labour - unpaid ^c	\$14,087	4%	\$8,486	3%	\$10,700	3%
(6) Leasing	\$12,535	4%	\$13,445	5%	\$13,662	4%
Legal & Accounting	\$2,891	1%	\$4,066	1%	\$4,132	1%
Telephone etc.	\$2,557	1%	\$3,080	1%	\$3,130	1%
Slipping & Mooring	\$2,545	1%	\$1,714	1%	\$1,742	1%
Travel	\$1,107	0%	\$3,741	1%	\$3,801	1%
Office & Admin	\$3,784	1%	\$4,350	1%	\$4,420	1%
(7) Total Fixed Costs	\$103,901	32%	\$109,770	37%	\$109,428	35%
(8) Total Boat Cash Costs (3 + 7)	\$329,412	100%	\$294,218	100%	\$310,303	100%
Boat Gross Margin (1 - 3)	\$122,316		\$92,343		\$134,904	
(9) Total Unpaid Labour (2 + 5)	\$46,273		\$29,843		\$37,628	
Gross Operating Surplus (1 - 8 + 9)	\$64,688		\$12,416		\$63,104	
(10) Boat Cash Income (1 - 8)	\$18,415		-\$17,428		\$25,475	
(11) Depreciation	\$63,035		\$46,342		\$41,721	
(12) Boat Business Profit (10 - 11)	-\$44,620		-\$63,770		-\$16,246	
(13) Profit at Full Equity (12 + 4 + 6)	\$2,137		-\$7,616		\$37,968	
Boat Capital						
(14) Fishing Gear & Equip	\$490,396		\$464,695		\$418,352	
Licence Value	\$1,577,472		\$1,252,714		\$1,342,194	
(15) Total Boat Capital	\$2,067,867		\$1,717,409		\$1,760,546	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	0.4%		-1.6%		9.1%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	0.1%		-0.4%		2.2%	

^a Financial performance estimates for 2007/08 and 2008/09 are based on the January - February 2009 licence holder survey. Financial performance estimates for 2006/07 are based on the March - April 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.

Table 3.6 Financial performance in the SA Northern Zone Rock Lobster fishery by return to capital quartile, 2008/09 (average per boat)

		Average per boat				
		Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1)	Total Boat Gross Income	\$250,793	\$304,291	\$368,004	\$405,984	\$335,778
	Variable Costs					
	Fuel	\$40,114	\$41,144	\$39,965	\$42,048	\$40,877
	Repairs & Maintenance ^a	\$23,877	\$25,081	\$22,232	\$21,482	\$23,088
	Bait/Ice	\$8,429	\$7,045	\$9,763	\$11,050	\$9,166
	Provisions	\$8,710	\$7,851	\$18,236	\$10,151	\$11,185
	Labour - paid	\$92,222	\$120,588	\$86,724	\$60,626	\$88,639
(2)	- unpaid ^b	\$33,094	\$15,038	\$25,034	\$33,277	\$26,928
	Other	\$1,542	\$370	\$1,122	\$943	\$992
(3)	Total Variable Costs	\$207,988	\$217,117	\$203,075	\$179,578	\$200,875
	Fixed Costs					
	Licence Fee	\$18,458	\$19,371	\$22,736	\$18,632	\$19,744
	Insurance	\$7,580	\$8,549	\$7,661	\$6,588	\$7,546
(4)	Interest	\$23,278	\$48,879	\$34,195	\$53,305	\$40,552
(5)	Labour - unpaid ^b	\$13,150	\$5,975	\$9,947	\$13,223	\$10,700
(6)	Leasing	\$7,458	\$6,376	\$17,940	\$21,338	\$13,662
	Legal & Accounting	\$6,076	\$1,802	\$3,668	\$4,838	\$4,132
	Telephone etc.	\$3,973	\$1,257	\$2,777	\$4,282	\$3,130
	Slipping & Mooring	\$0	\$406	\$813	\$5,081	\$1,742
	Travel	\$5,121	\$3,326	\$3,888	\$3,025	\$3,801
	Office & Admin	\$10,431	\$2,711	\$2,256	\$2,638	\$4,420
(7)	Total Fixed Costs	\$95,526	\$98,651	\$105,882	\$132,950	\$109,428
(8)	Total Boat Cash Costs (3 + 7)	\$303,513	\$315,768	\$308,958	\$312,528	\$310,303
	Boat Gross Margin (1 - 3)	\$42,805	\$87,174	\$164,928	\$226,406	\$134,904
(9)	Total Unpaid Labour (2 + 5)	\$46,244	\$21,013	\$34,981	\$46,500	\$37,628
	Gross Operating Surplus (1 - 8 + 9)	-\$6,476	\$9,536	\$94,027	\$139,956	\$63,104
(10)	Boat Cash Income (1 - 8)	-\$52,720	-\$11,477	\$59,046	\$93,456	\$25,475
(11)	Depreciation	\$70,359	\$35,140	\$40,632	\$24,248	\$41,721
(12)	Boat Business Profit (10 - 11)	-\$123,079	-\$46,616	\$18,414	\$69,208	-\$16,246
(13)	Profit at Full Equity (12 + 4 + 6)	-\$92,343	\$8,638	\$70,550	\$143,852	\$37,968
	Boat Capital					
(14)	Fishing Gear & Equip	\$502,335	\$438,649	\$431,933	\$320,136	\$418,352
	Licence Value	\$1,296,214	\$1,306,714	\$1,496,786	\$1,281,250	\$1,342,194
(15)	Total Boat Capital	\$1,798,549	\$1,745,363	\$1,928,719	\$1,601,386	\$1,760,546
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	-18.4%	2.0%	16.3%	44.9%	9.1%
	Rate of Return on Total Boat Capital (13 / 15 * 100)	-5.1%	0.5%	3.7%	9.0%	2.2%

^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.

Table 3.7 Financial performance in the SA Northern Zone Rock Lobster fishery by number of pots, 2008/09 (average per boat)

	Average per boat		
	Less than 70 pots	70 or more	All Boats
(1) Total Boat Gross Income	\$265,290	\$399,859	\$335,778
Variable Costs			
Fuel	\$30,948	\$49,903	\$40,877
Repairs & Maintenance ^a	\$23,489	\$22,722	\$23,088
Bait/Ice	\$8,630	\$9,653	\$9,166
Provisions	\$7,036	\$14,957	\$11,185
Labour - paid	\$79,889	\$96,594	\$88,639
(2) - unpaid ^b	\$29,761	\$24,353	\$26,928
Other	\$1,218	\$786	\$992
(3) Total Variable Costs	\$180,972	\$218,968	\$200,875
Fixed Costs			
Licence Fee	\$16,593	\$22,608	\$19,744
Insurance	\$6,322	\$8,660	\$7,546
(4) Interest	\$39,321	\$41,671	\$40,552
(5) Labour - unpaid ^b	\$11,826	\$9,677	\$10,700
(6) Leasing	\$11,582	\$15,553	\$13,662
Legal & Accounting	\$3,638	\$4,581	\$4,132
Telephone etc.	\$3,206	\$3,061	\$3,130
Slipping & Mooring	\$2,286	\$1,247	\$1,742
Travel	\$4,339	\$3,313	\$3,801
Office & Admin	\$6,653	\$2,389	\$4,420
(7) Total Fixed Costs	\$105,765	\$112,759	\$109,428
(8) Total Boat Cash Costs (3 + 7)	\$286,737	\$331,726	\$310,303
Boat Gross Margin (1 - 3)	\$84,318	\$180,891	\$134,904
(9) Total Unpaid Labour (2 + 5)	\$41,587	\$34,029	\$37,628
Gross Operating Surplus (1 - 8 + 9)	\$20,139	\$102,162	\$63,104
(10) Boat Cash Income (1 - 8)	-\$21,447	\$68,132	\$25,475
(11) Depreciation	\$32,976	\$49,670	\$41,721
(12) Boat Business Profit (10 - 11)	-\$54,424	\$18,462	-\$16,246
(13) Profit at Full Equity (12 + 4 + 6)	-\$3,521	\$75,686	\$37,968
Boat Capital			
(14) Fishing Gear & Equip	\$368,881	\$463,327	\$418,352
Licence Value	\$1,182,643	\$1,487,240	\$1,342,194
(15) Total Boat Capital	\$1,551,524	\$1,950,567	\$1,760,546
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	-1.0%	16.3%	9.1%
Rate of Return on Total Boat Capital (13 / 15 * 100)	-0.2%	3.9%	2.2%
Average Number of Pots ^c	60	76	69

^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 3.8 Financial performance in the SA Northern Zone Rock Lobster fishery by number of pots, 2008/09 (average per pot)

	Average per pot		
	Less than 70	70 or more	All Boats
(1) Total Boat Gross Income	\$4,408	\$5,240	\$4,893
Variable Costs			
Fuel	\$514	\$654	\$596
Repairs & Maintenance ^a	\$390	\$298	\$336
Bait/Ice	\$143	\$127	\$134
Provisions	\$117	\$196	\$163
Labour - paid	\$1,328	\$1,266	\$1,292
(2) - unpaid ^b	\$495	\$319	\$392
Other	\$20	\$10	\$14
(3) Total Variable Costs	\$3,007	\$2,870	\$2,927
Fixed Costs			
Licence Fee	\$276	\$296	\$288
Insurance	\$105	\$113	\$110
(4) Interest	\$653	\$546	\$591
(5) Labour - unpaid ^b	\$197	\$127	\$156
(6) Leasing	\$192	\$204	\$199
Legal & Accounting	\$60	\$60	\$60
Telephone etc.	\$53	\$40	\$46
Slipping & Mooring	\$38	\$16	\$25
Travel	\$72	\$43	\$55
Office & Admin	\$111	\$31	\$64
(7) Total Fixed Costs	\$1,758	\$1,478	\$1,595
(8) Total Boat Cash Costs (3 + 7)	\$4,765	\$4,348	\$4,522
Boat Gross Margin (1 - 3)	\$1,401	\$2,371	\$1,966
(9) Total Unpaid Labour (2 + 5)	\$691	\$446	\$548
Gross Operating Surplus (1 - 8 + 9)	\$335	\$1,339	\$920
(10) Boat Cash Income (1 - 8)	-\$356	\$893	\$371
(11) Depreciation	\$548	\$651	\$608
(12) Boat Business Profit (10 - 11)	-\$904	\$242	-\$237
(13) Profit at Full Equity (12 + 4+ 6)	-\$59	\$992	\$553
Boat Capital			
(14) Fishing Gear & Equip	\$6,130	\$6,072	\$6,096
Licence Value	\$19,652	\$19,491	\$19,559
(15) Total Boat Capital	\$25,782	\$25,564	\$25,655
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	-1.0%	16.3%	9.1%
Rate of Return on Total Boat Capital (13 / 15 * 100)	-0.2%	3.9%	2.2%

^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.

In 2008/09, the average gross income for boats in the first quartile was approximately 25 per cent below the average, while in the fourth quartile, average gross income was almost 21 per cent above the average recorded for all surveyed boats (Table 3.6).

As expected, the average gross income per boat was positively correlated with the number of pots per boat (Table 3.7). Gross income per pot was approximately 51 per cent greater for licence holders with 70 or more pots when compared with those with less than 70 pots (Table 3.8).

Costs...

Tables 3.5 to 3.8 show total costs separated into variable and fixed costs. Variable costs (65 per cent of total boat cash costs for all boats in 2008/09) represented a significantly greater proportion of total boat cash costs than fixed costs (35 per cent).

Total average cash costs per boat were estimated to have increased by 5 per cent between 2007/08 to 2008/09. This increase comprised of a 9 per cent increase in variable costs and a small decrease in fixed costs. Notable changes include a decline in bait/ice costs, fuel, licence fees and interest and a significant increase in labour costs (Table 3.5)⁵.

While average income for boats in the first quartile was around 25 per cent below that of boats in the fourth quartile, average total cash costs were only 2 per cent lower. The cost items where the largest differences occurred between the first and fourth quartiles were interest (43 per cent lower for boats in the first quartile), labour (approximately \$31,000 higher in the first quartile) and leasing (45 per cent lower for boats in the first quartile) (Table 3.6). Many of the licence holders in the survey sample were owner operators, while some employed both a skipper and deckhand. This accounts for some of the variation in labour costs between quartiles.

As expected, average total cash costs per boat were positively correlated with the number of pots held (Table 3.7). The cost items where the largest differences occurred were fuel (61 per cent greater for those with 70 or more pots), insurance (37 per cent greater) and licence fees (36 per cent greater). On a per pot basis, however, the differences between the two groups for these items are far less and for cash costs in total, the two groups are virtually the same (Table 3.8).

Overall, total cash costs per boat increased by approximately 5 per cent, up from \$294,000 in 2007/08 to \$310,000 in 2008/09. The main driver of the increase has been the rise in labour costs (26 per cent) (Table 3.5).

Cash Income and Profit...

The separation of variable and fixed costs from total cash costs enables the calculation of boat gross margin (total boat income less total boat variable costs) as a basic measure of profit (assuming that capital has no alternative use and that as fishing activity varies there is no change in capital or fixed costs). Boat gross margin increased in 2008/09 (almost \$135,000) compared to previous year (\$92,000) mainly due to the rise in total boat gross income.

⁵ Financial performance estimates for 2006/07 and 2007/08 to 2008/09 were based on different survey samples, accordingly some of the variability between these two periods is attributable to sampling variances.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members as a cost item. The average GOS of all boats in 2008/09 was estimated to be approximately \$63,000, a significant increase compared to the previous year (\$12,000) (Table 3.5).

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 2008/09 was approximately \$25,000 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 approximately -\$16,000 per boat in 2008/09, an improvement from 2007/08 (-\$64,000) (Table 3.5).

In 2008/09, the average boat business profit for boats in the first quartile was approximately -\$123,000. This is significantly less than that for boats in the fourth quartile (around \$69,000) (Table 3.6).

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 70 pots was approximately \$18,000 in 2008/09. This is significantly greater than that for licence holders with less than 70 pots (-\$54,000). On a per pot basis, the average boat business profit was approximately 127 per cent greater for licence holders with 70 or more pots than for those with less than 70 pots (Tables 3.7 and 3.8).

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 2008/09 (almost \$38,000) was greater than the previous year (-\$7,600).

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 2008/09 was positively correlated with the number of pots held (Table 3.7). 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 3.8).

The average return on investment for the fishery is reported in Table 3.5. The rate of return to boat capital (i.e. fishing gear and equipment) was estimated to average 9.1 per cent and the rate of return to total capital was estimated to average 2.2 per cent in 2008/09.

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 approximately -\$92,000, compared to almost \$144,000 in the fourth quartile. This significant difference is due to the lower average gross income and similar 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 \$502,000 in 2008/09) compared to the fourth quartile (\$320,000). Accordingly, in 2008/09, the average rate of return to total capital was -5.1 per cent in the first quartile and 9.0 per cent in the fourth quartile (Table 3.6).

In 2008/09, licence holders with less than 70 pots earned an average rate of return to total capital of -0.2 per cent. For licence holders with 70 or more pots the average rate of return to total capital was 3.9 per cent (Table 3.7).

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 \$1.3 million per boat for all boats (approximately \$20,000 per pot) for 2008/09 represents the licence holders' estimate of the value of their licence, based on the 2009 survey responses, adjusted to reflect changes in the gross income per licence holder between 2007/08 and 2008/09.

Licence values are determined by both current earning capacity and expectations about future earnings. The PIRSA Fisheries Public Register indicates that there was no licence transfers in 2008/09.

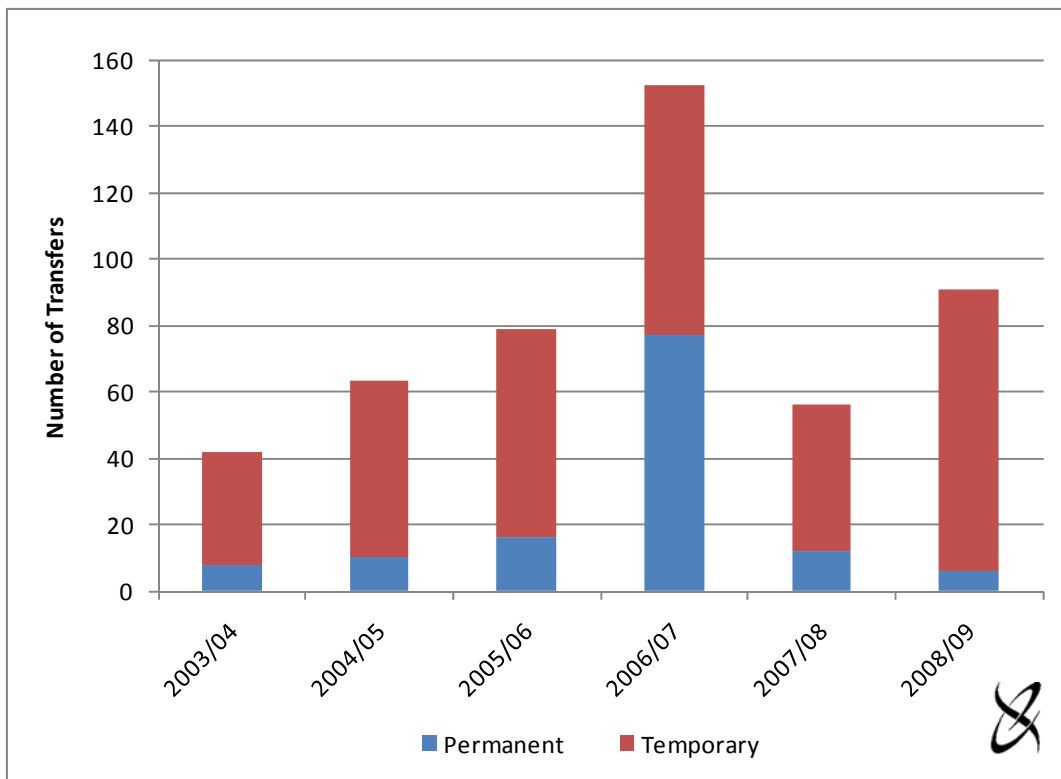
Quotas were introduced in the fishery in October 2003 for the 2003/04 season. A total of 62,500 quota units were allocated at that time with each unit being equivalent to 10kg. In 2004/05 the TAC was reduced to 8.32 kg per unit or 520 tonnes for the fishery as a whole. In 2008/09 there were 6 permanent quota transfers between licence holders. There were 85 temporary quota transfers between licence holders in 2008/09, ranging from only a small number of units to full licence allocations (PIRSA Fisheries licensing section).

The number of transfers between licence holders and total number of quota units transferred over the period 2003/04 to 2008/09 are detailed in Figures 3.3 and 3.4, respectively.

Since the initial allocation of quota units in 2003/04 the average number of quota transfers between licence holders has been 81 per annum, comprised of 22 permanent transfers and 59 temporary transfers. In 2008/09 there were 91 quota transfers between licence holders, although the majority (85) were temporary transfers (Figure 3.3).

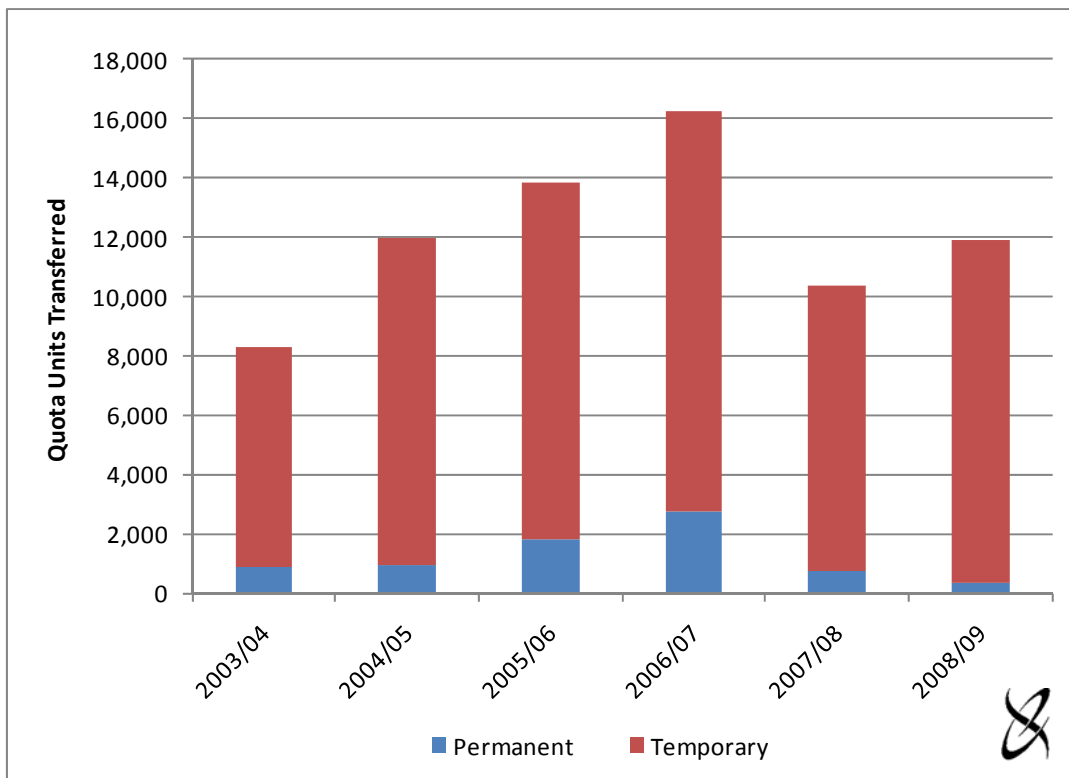
Over the 6 years to 2008/09, an average of 12,101 quota units has been traded each year (1,240 permanent and 10,861 temporary). This average annual trade represents 19 per cent of the total quota units in the fishery. In 2008/09 the total number of quota units transferred was 11,878 which comprised 26 per cent of the total quota units in the fishery (Figure 3.4).

Figure 3.3 Number of quota transfers, 2003/04 to 2008/09



Source: PIRSA Fisheries Licensing Section.

Figure 3.4 Number of quota units transferred, 2003/04 to 2008/09



Source: PIRSA Fisheries Licensing Section.

3.5 State and Regional Economic Impact

Estimates of the economic impact of the South Australian NZRL fishing industry on the South Australian and regional (Eyre/Western⁶) economies in 2008/09 are outlined below.

3.5.1 Measuring direct and flow-on effects

Estimates of the direct economic impact of the NZRL fishery are consistent with the method employed in PIRSA's *Value-added ScoreCard, 2006/07*⁷.

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) trade⁸.

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

Economic impacts at the state and regional levels were based on models for the state as a whole and for the Eyre/Western region, respectively, prepared for the Department of Trade and Economic Development (EconSearch 2009c).

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 2004/05 and updated to 2007/08, as described earlier. On an item-by-item basis, the expenditures were allocated between those occurring in the Eyre/Western 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 *value-added ScoreCard (Seafood Scorecard, 2006/07)* (Rob Esvelt, 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.

⁶ The Eyre and Western region is consistent with the SA Government Region, as defined by the Department of Planning and Local Government.

⁷ The relevant information was obtained from Rob Esvelt (PIRSA, pers. comm.).

⁸ 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.

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

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

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

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

3.5.2 Economic impacts at the state and regional levels

Estimates of the economic impact generated in 2008/09 by the NZRL fishing industry in South Australia and the Eyre/Western region are outlined in Tables 3.9 and 3.10, respectively.

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

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

Value of output...

The value of output generated directly in South Australia and the Eyre/Western region by Northern Zone Rock Lobster fishing enterprises summed to \$19.3 million in 2008/09 (Tables 3.9 and 3.10), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$6.7 million (\$3.4 million in the Eyre/Western region, Table 3.10).

Flow-ons to other sectors of the state economy added another \$34.2 million in output (\$14.5 million in the regional economy). The sectors most affected were the manufacturing, trade, business services and transport sectors. The total output impact in SA (direct plus indirect) was estimated to be \$60.3 million in 2008/09 (\$37.3 million in the Eyre/Western region).

Table 3.9 The economic impact of the SA Northern Zone Rock Lobster fishing industry in South Australia, 2008/09

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	19.3	32%	155	43%	5.4	33%	10.2	34%
Processing	2.3	4%	8	2%	0.5	3%	0.8	3%
Transport	2.4	4%	9	3%	0.6	3%	1.0	3%
Retail	0.3	1%	4	1%	0.1	1%	0.2	1%
Food services	0.7	1%	5	1%	0.2	1%	0.3	1%
Capital expenditure ^b	0.9	2%	8	2%	0.3	2%	0.4	1%
Total Direct ^c	26.0	42%	189	51%	7.0	41%	12.8	42%
Flow-on effects								
Trade	5.6	9%	47	13%	1.8	11%	2.6	9%
Manufacturing	7.0	12%	35	10%	1.6	10%	2.3	8%
Business Services	4.4	7%	20	6%	1.5	9%	2.1	7%
Transport	2.0	3%	17	5%	0.5	3%	0.9	3%
Other Sectors	15.2	25%	50	14%	4.0	24%	9.1	31%
Total Flow-on ^c	34.2	57%	169	47%	9.4	57%	17.0	57%
Total ^c	60.3	100%	359	100%	16.5	100%	29.8	100%
Total/Direct	2.3	-	1.9	-	2.3	-	2.3	-
Total/Tonne	\$149,500	-	0.89	-	\$40,900	-	\$74,000	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 63 full-time jobs and 148 part-time jobs, that is, 211 jobs in aggregate, which was estimated to be equal to 155 fte jobs.

^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.

Employment and household income...

In 2008/09, the Northern Zone Rock Lobster fishery was responsible for the direct employment of around 155 full-time equivalents and downstream activities created employment of around 34 fte jobs state-wide. Flow-on business activity was estimated to generate a further 169 fte jobs state-wide (77 jobs regionally). These state-wide jobs were concentrated in the trade (47), manufacturing (35), business services (20) and transport (17) sectors. The total employment impact in SA was estimated to be 359 fte jobs (248 fte jobs in the Eyre/Western region)

Personal income of \$5.4 million was earned in the fishing sector and \$1.7 million in downstream activities in SA. An additional \$9.4 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 \$16.5 million in SA (\$10.1 million in the Eyre/Western region).

Table 3.10 The economic impact of the SA Northern Zone Rock Lobster fishing industry in the Eyre/Western region, 2008/09

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	19.3	32%	155	43%	5.4	33%	10.2	34%
Processing	2.3	4%	7	2%	0.5	3%	0.7	2%
Transport	0.5	1%	2	1%	0.1	1%	0.2	1%
Retail	0.0	0%	0	0%	0.0	0%	0.0	0%
Food services	0.0	0%	0	0%	0.0	0%	0.0	0%
Capital expenditure ^b	0.6	1%	7	2%	0.2	1%	0.3	1%
Total Direct ^c	22.8	37%	171	46%	6.2	36%	11.4	37%
Flow-on effects								
Trade	3.3	5%	30	8%	1.1	7%	1.6	5%
Manufacturing	2.5	4%	14	4%	0.5	3%	0.8	3%
Business Services	1.5	2%	7	2%	0.5	3%	0.7	2%
Transport	0.8	1%	5	1%	0.2	1%	0.4	1%
Other Sectors	6.5	11%	22	6%	1.5	9%	4.0	13%
Total Flow-on ^c	14.5	24%	77	22%	3.8	23%	7.4	25%
Total ^c	37.3	62%	248	69%	10.1	61%	18.8	63%
Total/Direct	1.6	-	1.5	-	1.6	-	1.7	-
Total/Tonne	\$92,500	-	0.62	-	\$24,900	-	\$46,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 63 full-time jobs and 148 part-time jobs, that is, 211 jobs in aggregate, which was estimated to be equal to 155 fte jobs.

^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.

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 2008/09, total Northern Zone Rock Lobster fishing industry related contribution to GSP in South Australia was \$29.8 million (\$18.8 million in the Eyre/Western region), \$10.2 million generated by fishing directly, \$2.7 million generated by downstream activities and \$17.0 million generated in other sectors of the state economy.

Total impacts over time...

Figures 3.5 and 3.6 illustrate the total economic impact of the fishery on the SA economy for the 12 years, 1997/98 to 2008/09. Estimates of economic impact are expressed in nominal terms, which means that no adjustment has been made for inflation.

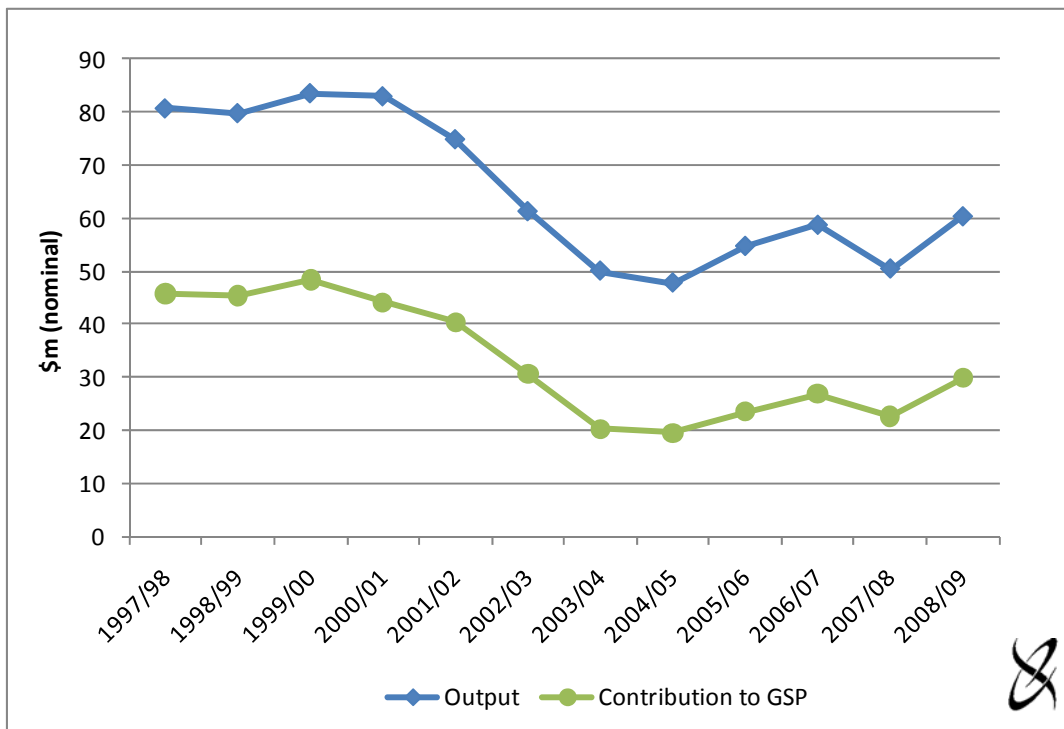
Estimates of economic impact for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on a second survey of licence holders conducted in October 2001. Estimates for 2004/05 to 2006/07 are based on the survey of licence holders conducted in March – April 2006. Estimates for 2007/08 and 2008/09 are based on the most recent survey of licence holders conducted in January – February 2009.

The economic impact of the NZRL 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 2008/09 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. Contribution to GSP is the preferred measure of net contribution to the SA economy.

Figure 3.5 Total gross state product and output impact of the SA Northern Zone Rock Lobster fishing industry in SA, 1997/98 to 2008/09 ^a

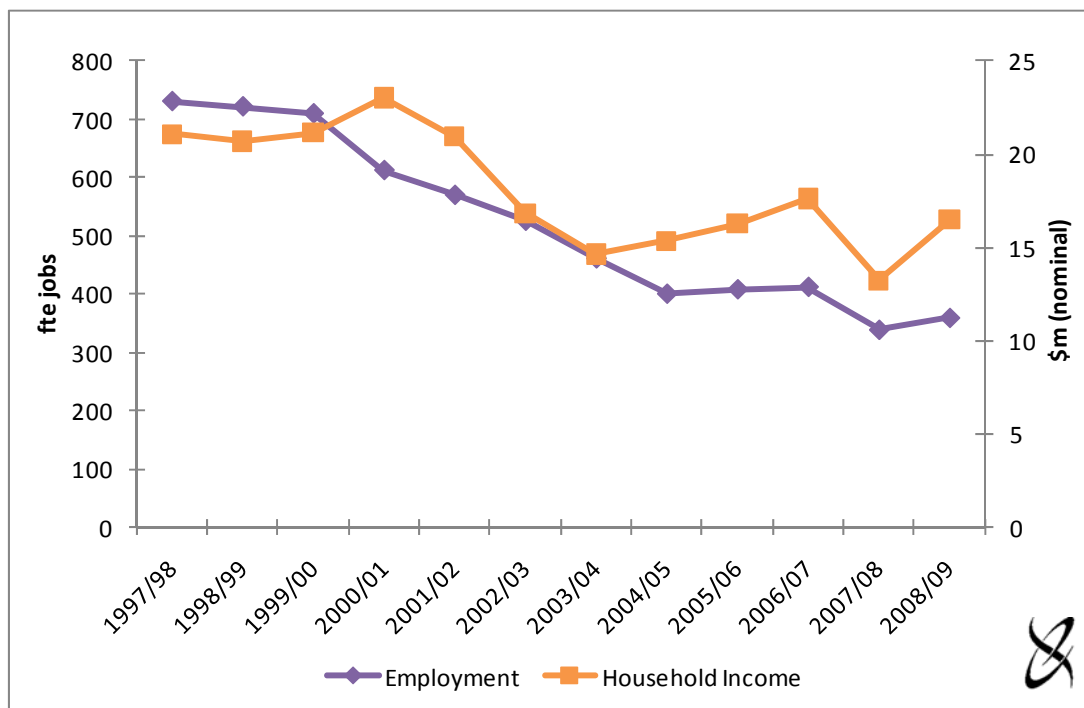


^a The economic impact of the NZRL fishery in 1997/98 and 1998/99 does not include the direct and flow-on effects of estimated capital expenditure by licensees; these effects have been included in subsequent years. Estimates of economic impact for the period 1997/98 to 2002/03 do not include the impact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

Source: EconSearch (2009c) and EconSearch analysis.

There has been a significant decline in the economic impact of the fishery between 1997/98 and 2004/05, as illustrated in Figures 3.5 and 3.6. This decrease can be attributed to a combination of factors, including a reduction in the total number of licence holders in the fishery (direct employment) and a decline in catch and value of catch over the 7 year period. Despite a small decline in 2007/08, the economic impact of the fishery has increased since 2004/05, mostly attributable to the increase in GVP of the fishery over this period.

Figure 3.6 Total employment and household income impact of the SA Northern Zone Rock Lobster fishing industry in SA, 1997/98 to 2008/09 ^a



^a See note for Figure 3.5.

Source: EconSearch (2009c) and EconSearch analysis.

3.6 Economic Rent

Economic rent⁹ 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 NZRL fishery and the good produced is the landed lobster.

The long-term costs of operating a fishing business 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) and bait, overheads such as administration and licences, and the cost of capital invested in the boat and gear (excluding licence). Capital cost includes depreciation and the opportunity cost of the capital applied to the fishery. The opportunity cost is equivalent to what the fisher's investment could have earned in the next best alternative use.

⁹ 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.

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 NZRL fishery in 2008/09 was estimated to be approximately -\$1.0 million (Table 3.11).

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 2008/09 aggregate value of licences was estimated to be \$91.3 million (68 licences with an average value of almost \$1.34 million). An annual economic rent of -\$1.0 million represents a return of -1.1 per cent to the capital value of the fishery.

Table 3.11 Economic rent ^a in the SA Northern Zone Rock Lobster fishery, 1997/98 to 2008/09 (\$'000)

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	Economic Rent
1997/98	27,683	9,697	8,323	3,357	2,948	3,359
1998/99	26,743	9,659	7,592	3,639	3,196	2,657
1999/00	29,802	11,041	8,871	4,061	3,567	2,262
2000/01	27,988	10,825	9,750	3,977	3,810	-375
2001/02	26,190	10,169	8,897	4,325	4,144	-1,345
2002/03	18,828	7,485	8,206	4,568	4,376	-5,807
2003/04	12,046	5,011	8,844	4,602	4,409	-10,821
2004/05	11,643	5,004	7,396	2,902	2,258	-5,918
2005/06	15,433	6,652	7,400	3,103	2,414	-4,137
2006/07	17,954	7,910	7,327	3,254	2,531	-3,068
2007/08	15,935	5,765	8,714	2,668	2,675	-3,888
2008/09	19,331	7,269	8,260	2,402	2,408	-1,009

^a Adjusted for sample bias. For example, based on the March – April 2006 survey of licence holders gross income in the fishery for 2004/05 was estimated to be \$13.5 million.

Source: EconSearch analysis

4. Other Indicators

4.1 External Factors Influencing the Economic Condition of the Fishery

There are a number of factors in 2008/09 that have impacted on the economic performance of the NZRL fishery. Most of these are likely to continue to affect economic outcomes in the future.

Status report

In 2009, PIRSA published a report on the current biological status of commercial fishery in SA (Linnane et al. 2009a). In this report the NZRL fishery is classified as being over fished. The report highlighted the need to establish a TACC that constrains catch, protects existing biomass and facilitates the aim of stock rebuilding.

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 lobster stocks in South Australia. 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 NZRL biological performance indicators for the 2002/03 to 2007/08 seasons are summarised in Table 4.1 below. Total catch and catch rate have both declined over this period.

Table 4.1 Biological performance indicators for the SA Northern Zone Rock Lobster fishery, 2002/03 to 2007/08

Indicator	Target	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Catch (tonnes)	520	595	504	446	476	492	459
Catch Rate (kg/pot lift)	1.25 – 1.43	1.04	0.84	0.80	0.81	0.86	0.76
Pre-recruit Index ^a	0.18 – 0.29	0.21	0.12	0.11	0.49	0.37	0.29

^a The pre-recruit index measures the number of juvenile fish entering the fishery.

Source: Linnane et. al. (2004, 2005, 2007, 2008 and 2009b) and Ward et al. (2004).

Management Plan

The new management plan sets out key performance measures to allow for assessment of the degree to which management objectives are being achieved. The purpose of the management plan is to promote sustained stock recovery in the Northern Zone Rock Lobster Fishery to a level defined by the targets set out in the harvest strategy (PIRSA 2007).

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 USA'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
- trialing 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

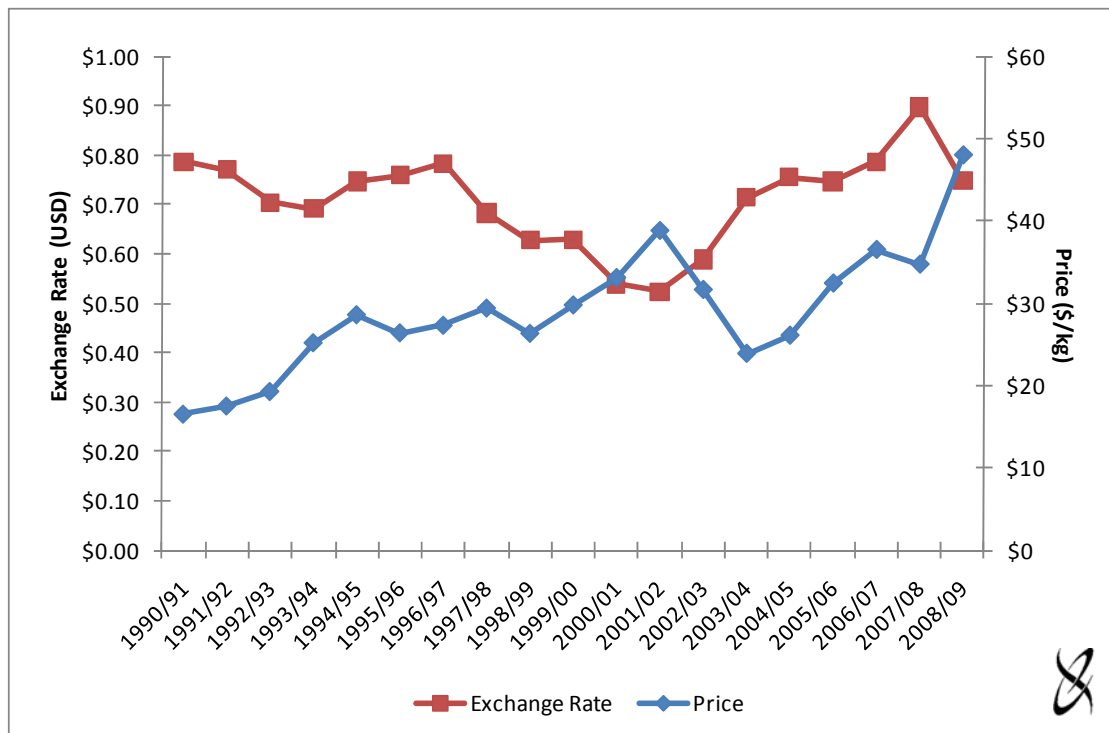
A significant proportion of the South Australian rock lobster catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery. The value of the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar have the potential to influence the demand for Australian rock lobster exports. The Australian dollar generally followed a sharp decreasing trend for the first half of 2008/09 falling from US94 cents in July 2008 to US64 cents in January 2009. The value of the Australian dollar increased in the latter half of 2008/09 reaching US81 cents by June 2009. 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 2008/09 was US\$0.75, a decline of 17 per cent compared to the average for the previous year. Other things held equal, a fall in the value of the currency would have the effect of increasing the price of rock lobster received by Australian exporters between 2007/08 and 2008/09.

Historically, the most significant export destination for South Australian rock lobster exports has been 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 2008/09 was 5.81 HKD, a decrease of 17 per cent from 6.99 HKD in the previous year.

The relationship between the average price in the NZRL fishery and the exchange rate (USD) between 1990/91 and 2008/09 can be observed in Figure 4.1.

Figure 4.1 Exchange rate (USD) and average price for SA Northern Zone Rock Lobster, 1990/91 to 2008/09



Source: SARDI Aquatic Sciences and RBA (2009b) 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 NZRL fishery for the period 1990/91 to 2008/09 is -0.17. This indicates that there is a relatively weak 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 NZRL fishery.

4.2 Licence Holder Comments

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

Financial Performance

Several licence holders who participated in the survey 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). Many licence holders emphasised the importance of price in determining industry returns. As the quantity of catch is limited by quota, changes in price drive the financial performance of the fishery.

Management

Some licence holders suggested that the fishery is overcapitalised and the government/other licence holders should buy back some licences or pots to reduce the pressure on the fishery.

Several licence holders indicated that the fishery was well managed but felt the need for more biological research on pre-recruitment and juveniles.

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 fishers' pots are issued with escape gaps, similar to commercial fishers, to stop them catching undersized fish.

Stock

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. 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 but felt that the fishery had been showing signs of recovery recently, with a greater number of undersized fish.

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.

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.

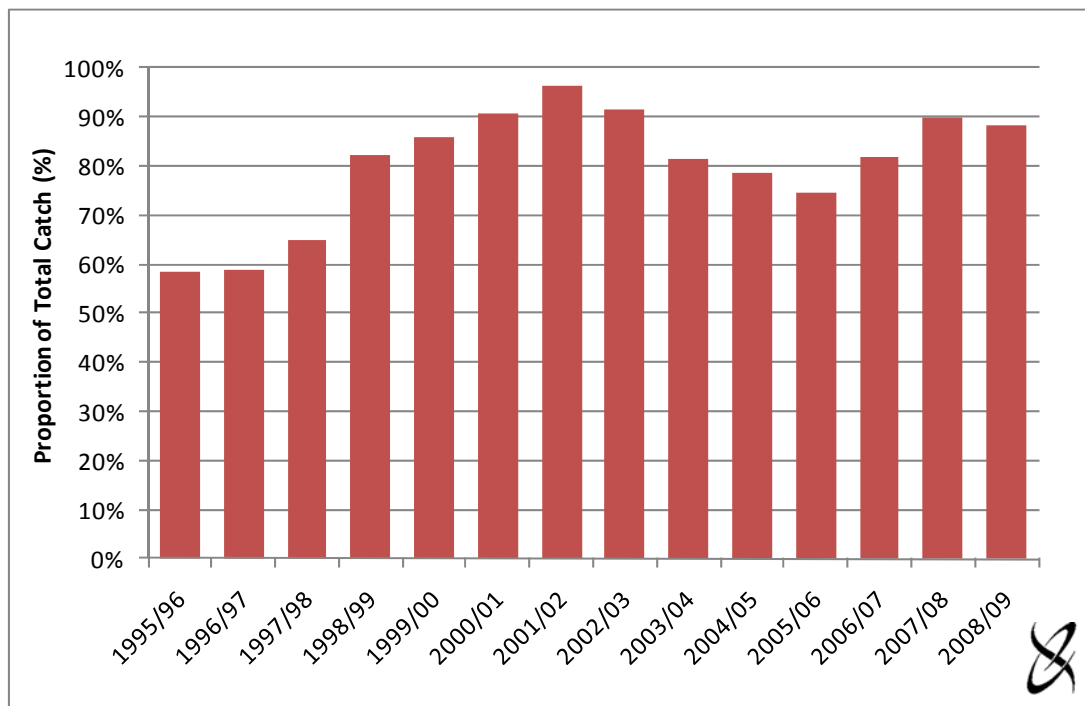
Licence holders indicated that the introduction of marine parks would result in them having to move to different fishing grounds. There are costs associated with getting to know new fishing grounds such as time (labour) and fuel.

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 2008/09¹⁰.

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 88 per cent in 2008/09 (Figure 4.2).

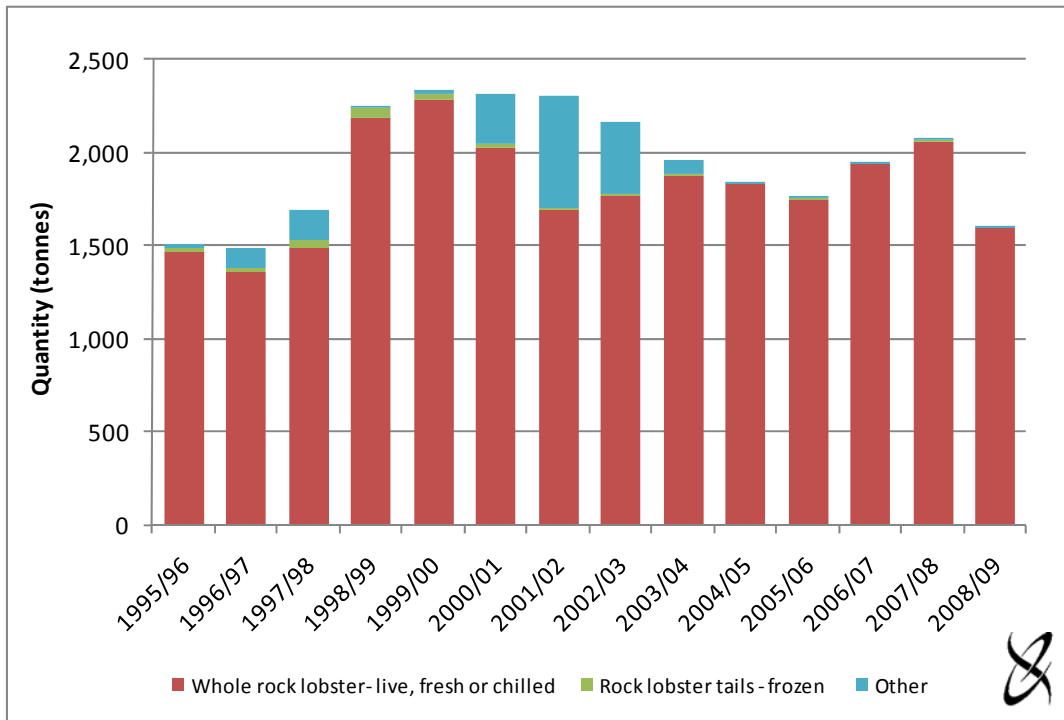
Figure 4.2 Rock lobster exports from South Australia as a proportion of total catch, 1995/96 to 2008/09



Source: Appendix Table 2.1 and Table 3.1

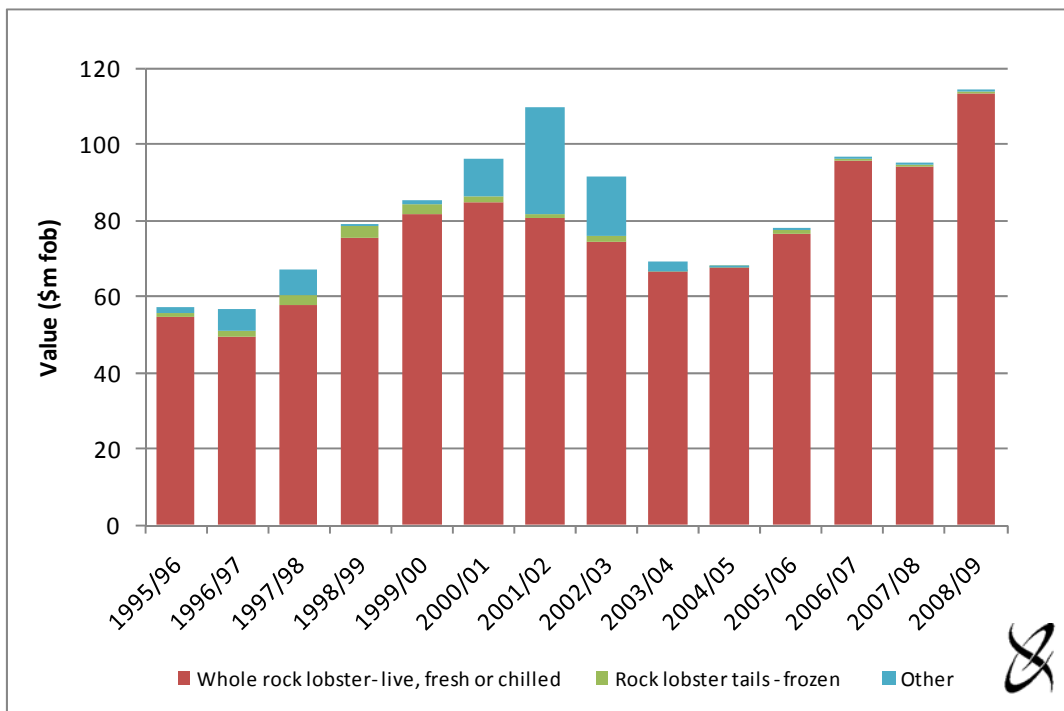
¹⁰ That is, exports from the northern and southern zone rock lobster fisheries in aggregate. These data only include exports direct from South Australia, not product that is shipped interstate and then exported. They could also include product that is shipped from interstate and exported from South Australia.

Figure 4.3 Rock lobster exports from South Australia, quantity (t) by category, 1995/96 to 2008/09



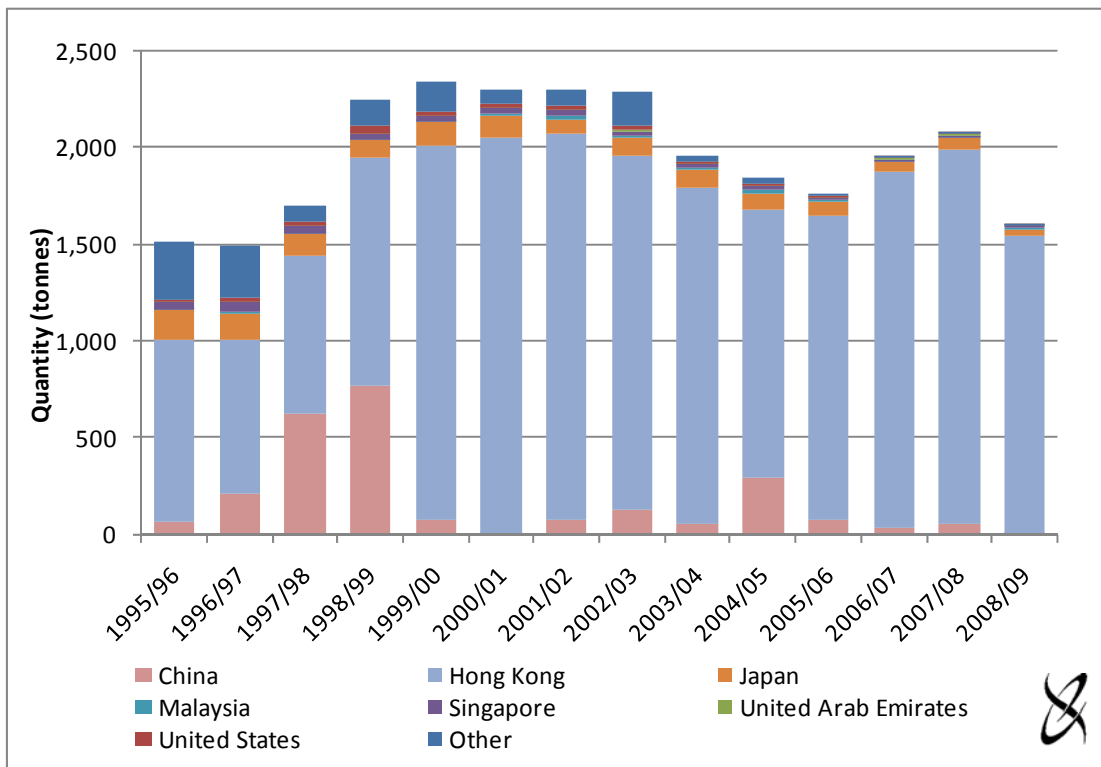
Source: Appendix Table 2.1.

Figure 4.4 Rock lobster exports from South Australia, value (\$m fob) by category, 1995/96 to 2008/09



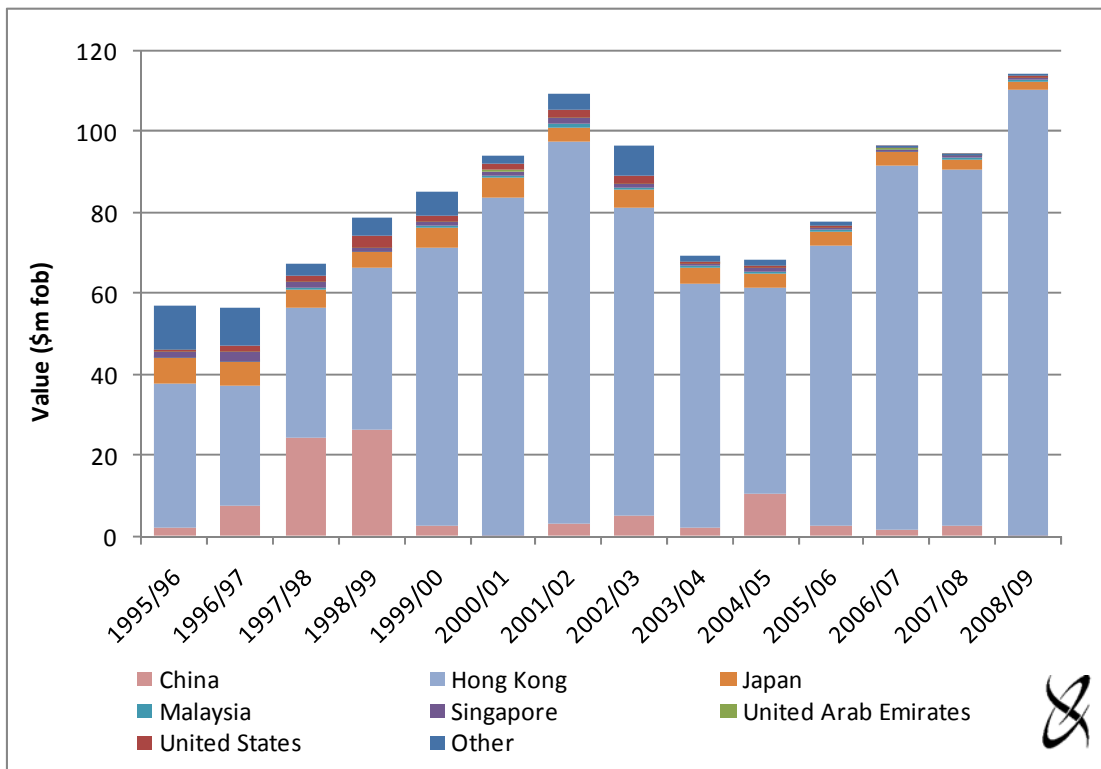
Source: Appendix Table 2.2.

Figure 4.5 Rock lobster exports from South Australia, quantity (t) by country of destination, 1995/96 to 2008/09



Source: Appendix Table 2.3.

Figure 4.6 Rock lobster exports from South Australia, value (\$m fob) by country of destination, 1995/96 to 2008/09



Source: Appendix Table 2.4.

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 has generally decreased between 2001/02 and 2008/09 despite an upturn in 2006/07 and 2007/08. The total quantity of rock lobster exported from SA in 2008/09 was 1,596 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 2008/09, the total value of rock lobster exports from SA was approximately \$114 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 92 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 2008/09 was Hong Kong, accounting on average for 76 per cent of the total quantity and 77 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 Northern Zone Rock Lobster Fishery, 2007/08

Appendix Table 1.1 The economic impact of the Northern 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	15.9	31.6%	155	45.9%	4.0	30.5%	6.7	29.7%
Processing	1.6	3.2%	5	1.4%	0.2	1.8%	0.4	1.6%
Transport	2.7	5.4%	12	3.5%	0.9	6.7%	1.3	5.7%
Retail	0.3	0.5%	4	1.1%	0.1	0.9%	0.1	0.6%
Food services	0.6	1.2%	5	1.5%	0.2	1.2%	0.2	1.1%
Capital expenditure ^b	0.9	1.7%	8	2.5%	0.3	2.1%	0.4	1.5%
Total Direct ^c	22.0	41.9%	189	53.4%	5.7	41.0%	9.1	38.8%
Flow-on effects								
Trade	4.3	8.5%	44	12.9%	1.6	12.1%	2.0	8.8%
Manufacturing	6.1	12.0%	18	5.3%	0.9	6.7%	1.4	6.3%
Business Services	3.1	6.2%	18	5.2%	1.1	8.7%	1.5	6.6%
Transport	1.6	3.1%	7	2.0%	0.5	3.8%	0.7	3.3%
Other Sectors	13.4	26.5%	64	18.8%	3.4	25.7%	7.8	34.6%
Total Flow-on ^c	28.4	56.4%	150	44.2%	7.5	56.9%	13.5	59.6%
Total ^c	50.4	100.0%	339	100.0%	13.3	100.0%	22.6	100.0%
Total/Direct	2.3	-	1.8	-	2.3	-	2.5	-
Total/Tonne	\$109,800	-	0.74	-	\$28,800	-	\$49,200	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 63 full-time jobs and 148 part-time jobs, that is, 211 jobs in aggregate, which was estimated to be equal to 155 fte jobs.

^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 (2009a).

Appendix Table 1.2 The economic impact of the Northern Zone Rock Lobster fishing industry in the Eyre region, 2007/08

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	15.9	52.7%	155	62.1%	4.0	51.1%	6.7	49.8%
Processing	1.6	5.3%	7	2.8%	0.3	3.7%	0.4	3.3%
Transport	0.5	1.7%	3	1.1%	0.2	2.3%	0.3	2.0%
Retail	0.0	0.0%	0	0.1%	0.0	0.1%	0.0	0.1%
Food services	0.0	0.1%	0	0.1%	0.0	0.1%	0.0	0.1%
Capital expenditure ^b	0.6	1.9%	8	3.4%	0.2	2.9%	0.3	2.1%
Total Direct ^c	18.7	59.8%	174	66.3%	4.8	57.3%	7.7	55.1%
Flow-on effects								
Trade	2.4	8.1%	28	11.4%	0.9	11.3%	1.1	8.5%
Manufacturing	1.5	5.0%	7	2.6%	0.3	3.5%	0.4	3.1%
Business Services	0.9	3.1%	6	2.4%	0.3	4.2%	0.4	3.3%
Transport	0.6	1.9%	3	1.2%	0.2	2.5%	0.3	2.1%
Other Sectors	6.1	20.3%	32	12.7%	1.5	18.4%	3.5	25.7%
Total Flow-on ^c	11.6	38.3%	76	30.4%	3.2	39.9%	5.8	42.7%
Total ^c	30.2	100.0%	250	100.0%	7.9	100.0%	13.5	100.0%
Total/Direct	1.6	-	1.4	-	1.7	-	1.7	-
Total/Tonne	\$65,900	-	0.54	-	\$17,200	-	\$29,400	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 63 full-time jobs and 148 part-time jobs, that is, 211 jobs in aggregate, which was estimated to be equal to 155 fte jobs.

^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 (2009a).

Appendix 2 Rock Lobster Exports from South Australia, 1995/96 to 2008/09

Appendix Table 2.1 Rock Lobster exports from South Australia, quantity (kg) by category, 1995/96 to 2008/09

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	2008/09
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	2,215
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	1,589,478
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	4,129
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	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	0
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	1,595,822

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 2008/09

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	2008/09
Whole rock lobster - frozen	730	14	0	0	0	5,180	1,167	1,864	991	326	114	8	214	173
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	113,262
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	350
Rock lobster tails - fresh or chilled	0	918	0	90	100	42	162	130	157	276	90	0	0	0
Other	402	4,443	6,887	22	631	4,597	26,618	13,844	1,580	0	116	534	1	0
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	113,785

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 2008/09

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	2008/09
Canada	0	0	0	13	2,180	1,360	110	124,844	0	18	0	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	56,250	2,946
Denmark	0	0	0	0	0	0	0	0	0	0	33	54	0	67
France	0	0	0	6,504	23,763	38,493	34,577	21,899	7,590	3,265	6,799	4,577	3,513	250
Germany	0	0	0	300	2,243	0	556	0	0	0	71	0	0	95
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	1,932,782	1,543,665
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	1,971	200
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	55,550	28,255
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	2,160	0
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	5,865	4,696
Philippines	117	1,925	959	0	0	0	365	25	40	72	28	0	23	25
Russian Federation	0	0	0	0	0	0	0	0	0	0	0	0	47	347
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	12,414	8,605
Taiwan	278,819	255,526	72,156	99,460	103,480	28,739	27,983	8,210	806	100	0	395	0	0
Thailand	620	3,944	0	0	2,400	0	9	0	0	0	225	0	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	2,886	2,179
United Kingdom	100	0	0	0	300	37	0	0	0	19	385	20	200	39
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	2,441	4,123
Vietnam	0	0	0	0	0	0	0	0	13,843	13,184	58	0	76	0
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	1,595,822

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 2008/09

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	2008/09
Canada	0	0	0	1	266	40	7	5,246	0	2	0	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	2,460	201
Denmark	0	0	0	0	0	0	0	0	0	0	4	6	0	9
France	0	0	0	232	889	1,512	1,525	981	266	126	296	296	226	17
Germany	0	0	0	13	70	0	24	0	0	0	7	0	0	4
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	87,886	109,957
Italy	103	166	234	532	566	867	890	816	449	331	238	145	78	12
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	2,785	2,287
Korea, Republic of	395	24	11	137	60	160	215	253	125	88	106	64	91	0
Malaysia	42	90	88	62	112	290	843	358	342	466	232	267	281	287
Philippines	5	73	41	0	0	0	19	1	1	2	2	0	1	2
Russian Federation	0	0	0	0	0	0	0	0	0	0	0	0	3	44
Singapore	1,426	2,073	1,479	1,051	1,014	1,383	1,554	1,173	713	1,024	669	533	584	550
Taiwan	10,085	9,040	2,666	3,346	3,757	1,166	1,234	357	25	12	0	16	0	0
Thailand	22	148	0	0	101	0	1	0	0	0	9	0	0	0
United Arab Emirates	94	190	61	127	62	88	162	108	52	173	62	130	137	169
United Kingdom	3	0	0	0	10	4	0	0	0	2	30	2	21	5
USA	465	1,313	1,444	2,785	1,586	1,842	1,844	1,734	332	500	543	351	143	196
Vietnam	0	0	0	0	0	0	0	0	511	522	4	0	3	0
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	113,785

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 to 2007/08 (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
2007/08	889	229	2,088	1,850	459	668	2,146	29,692	3,002	41,023

^a Excludes the River fishery for the years 2003/04 to 2007/08.

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

Source: EconSearch (2009b)

Appendix Table 3.2 Commercial fisheries gross value of production, South Australia, 1990/91 – 2007/08 (\$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
2007/08	31.0	2.9	33.0	75.7	15.9	5.7	5.9	16.3	20.9	207.5

^a SARDI estimates for the years 1990/91 to 2004/05, revalued SARDI estimates using average monthly processor prices for 2007/08.

^b SARDI estimates for the years 1990/91 and 1991/92, revalued SARDI estimates using Baker and Pierce (1998) for the years 1992/93 to 2001/02 and survey based readjustment factors for 2002/03 to 2007/08 Excludes the River fishery for the years 2003/04 to 2007/08

^c SARDI estimates for the years 1990/91 to 2002/03, revalued SARDI estimates for 2003/04 to 2007/08 using weighted average prices from Sydney and Melbourne fish markets and price data obtained from fishers.

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

Source: EconSearch (2009b)

Appendix Table 3.3 Cost of management in South Australian commercial fisheries, 2007/08

	Licence Fees (\$'000)	GVP (\$'000)	Fees/ GVP (%)	Catch ('000kg)	Fees/ Catch (\$/kg)	Licence Holders (no.)	Fees/ Licence (\$/licence)
Abalone	2,530	31,044	8.1%	889	\$2.85	35	\$72,286
GSV Prawns	302	2,924	10.3%	229	\$1.32	10	\$30,204
SG & WC Prawns	1,022	32,950	3.1%	2,088	\$0.49	42	\$24,334
Sth'n Zone Rock Lobster	2,628	75,731	3.5%	1,850	\$1.42	181	\$14,518
Nth'n Zone Rock Lobster	1,175	15,935	7.4%	459	\$2.56	68	\$17,287
Blue Crabs - Pots	228	5,423	4.2%	618	\$0.37	8	\$28,490
Blue Crabs – Marine Scale	11	314	3.4%	50	\$0.21	5	\$2,126
Lakes and Coorong ^a	282	7,544	3.7%	2,146	\$0.13	37	\$7,614
Marine Scalefish	2,010	20,917	12.3%	3,002	\$0.86	343	\$5,968
Sardines	690	16,331	4.2%	29,692	\$0.02	14	\$49,317
Total SA	10,879	209,113	5.2%	41,023	\$0.27	743	\$14,641

^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 (2009b)

Appendix Table 3.4 Financial performance in South Australian commercial fisheries, 2007/08, (\$'000) (average per boat)

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs ^a	Marine Scalefish ^b	Sardines	Lakes and Coorong
(1) Total Boat Gross Income	877.6	342.3	744.2	486.7	276.8	5,563.6	103.1	1,160.6	228.5
Variable Costs									
Fuel	14.5	42.0	93.6	39.5	42.9	734.7	11.8	200.7	14.8
Repairs & Maintenance ^b	20.6	13.9	35.0	26.9	23.6	610.2	9.1	99.2	6.8
Bait/Ice	0.1	0.0	0.0	18.8	14.0	75.2	2.9	2.3	1.4
Provisions	8.3	0.7	7.7	0.7	11.4	0.0	0.0	8.2	0.2
Labour - paid	243.3	115.7	265.5	108.1	70.3	1,299.7	13.8	465.0	33.2
(2) - unpaid ^c	0.9	8.6	1.9	22.1	21.4	124.6	28.3	2.9	41.7
Other	4.8	0.5	16.3	0.7	1.0	132.8	0.0	35.0	16.9
(3) Total Variable Costs	292.5	181.4	420.0	216.7	184.4	2,977.1	65.9	813.3	115.0
Fixed Costs									
Licence Fee	70.4	30.1	24.2	19.3	20.8	279.7	7.1	48.4	9.2
Insurance	4.2	19.6	18.6	6.5	7.4	105.3	1.9	32.0	1.7
(4) Interest	17.1	18.0	41.6	26.1	42.7	629.1	5.1	97.7	5.9
(5) Labour - unpaid ^c	19.5	12.4	8.2	7.5	8.5	68.2	4.9	10.2	7.3
(6) Leasing	0.0	0.0	0.0	6.2	13.4	0.0	0.0	21.1	0.0
Legal & Accounting	8.4	6.6	9.9	3.8	4.1	23.5	1.3	8.2	2.1
Telephone etc.	2.9	2.6	3.5	1.8	3.1	29.3	1.4	1.8	2.3
Slipping & Mooring	2.0	4.0	2.7	2.8	1.7	0.0	0.8	17.8	0.1
Travel	8.1	0.4	1.4	2.2	3.7	16.7	0.5	0.9	1.0
Office & Admin	8.7	4.0	6.1	4.0	4.3	45.1	5.1	6.6	5.2
(7) Total Fixed Costs	141.3	97.6	116.2	80.2	109.8	1,196.9	28.2	244.7	34.7
(8) Total Boat Cash Costs (3 + 7)	433.8	279.0	536.2	296.9	294.2	4,174.0	94.1	1,058.0	149.8
Boat Gross Margin (1 - 3)	585.0	160.9	324.2	270.0	92.3	2,586.5	37.2	347.3	113.5
(9) Total Unpaid Labour (2 + 5)	20.4	21.0	10.1	29.6	29.8	192.8	33.2	13.2	49.1
Gross Operating Surplus	464.1	84.3	218.1	219.4	12.4	1,582.4	42.2	115.7	127.8
(10) Boat Cash Income (1 - 8)	443.7	63.3	208.0	189.8	-17.4	1,389.6	9.0	102.6	78.7
(11) Depreciation	38.8	95.9	141.5	42.4	46.3	552.0	18.1	217.5	24.8
(12) Boat Business Profit (10 - 11)	404.9	-32.6	66.5	147.4	-63.8	837.7	-9.2	-114.9	53.9
(13) Profit at Full Equity (12 + 4 + 6)	422.0	-14.6	108.1	179.7	-7.6	1,466.7	-4.1	3.9	59.8
Boat Capital									
(14) Fishing Gear & Equip	275.8	1,339.6	1,765.6	418.6	464.7	2,907.6	129.0	2,839.2	167.3
Licence Value	7,958.3	2,425.0	3,690.6	3,272.1	1,252.7	24,255.2	196.3	2,926.9	226.0
(15) Total Boat Capital	8,234.1	3,764.6	5,456.3	3,690.7	1,717.4	27,162.9	325.3	5,766.1	393.3
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	153.0%	-1.1%	6.1%	42.9%	-1.6%	50.4%	-3.2%	0.1%	35.8%
Rate of Return on Total Boat Capital (13 / 15 * 100)	5.1%	-0.4%	2.0%	4.9%	-0.4%	5.4%	-1.3%	0.1%	15.2%

^a Estimates of financial performance for the blue crab fishery have been presented on a whole of fishery basis.

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

^c Earnings before interest and tax.

Source: EconSearch (2009b)

Appendix Table 3.5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2007/08

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish ^a	Sardines	Lakes and Coorong
Variable Costs									
Fuel	3%	15%	17%	13%	15%	18%	13%	19%	10%
Repairs & Maintenance	5%	5%	7%	9%	8%	15%	10%	9%	5%
Bait/Ice	0%	0%	0%	6%	5%	2%	3%	0%	1%
Provisions	2%	0%	1%	0%	4%	0%	0%	1%	0%
Labour - paid	56%	41%	50%	36%	24%	31%	15%	44%	22%
- unpaid	0%	3%	0%	7%	7%	3%	30%	0%	28%
Other	1%	0%	3%	0%	0%	3%	0%	3%	11%
Fixed Costs									
Licence Fee	16%	11%	5%	7%	7%	7%	8%	5%	6%
Insurance	1%	7%	3%	2%	3%	3%	2%	3%	1%
Interest	4%	6%	8%	9%	15%	15%	5%	9%	4%
Labour - unpaid	4%	4%	2%	3%	3%	2%	5%	1%	5%
Leasing	0%	0%	0%	2%	5%	0%	0%	2%	0%
Legal & Accounting	2%	2%	2%	1%	1%	1%	1%	1%	1%
Telephone etc.	1%	1%	1%	1%	1%	1%	1%	0%	2%
Slipping & Mooring	0%	1%	1%	1%	1%	0%	1%	2%	0%
Travel	2%	0%	0%	1%	1%	0%	1%	0%	1%
Office & Admin	2%	1%	1%	1%	1%	1%	5%	1%	3%
Total Variable Costs	67%	65%	78%	73%	63%	71%	70%	77%	77%
Total Fixed Costs	33%	35%	22%	27%	37%	29%	30%	23%	23%
Total Cash Costs	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

Source: EconSearch (2009b)

Appendix Table 3.6 Economic impacts of South Australian commercial fisheries, 2007/08

	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	31.0	2.9	32.0	75.7	15.9	5.7	20.9	16.3	7.5	208.2
Downstream ^b	16.4	2.0	16.5	23.5	6.0	3.3	9.6	3.5	5.4	86.3
All other sectors (indirect)	41.9	6.3	50.6	92.1	15.9	9.3	45.5	24.4	14.0	300.2
Total	89.4	11.3	99.1	191.3	37.9	18.4	76.1	44.2	26.9	594.6
Total/Direct	1.9	2.3	2.0	1.9	2.3	2.0	2.5	2.2	2.1	2.0
Total/Tonne (\$)	\$100,500	\$49,100	\$50,500	\$103,400	\$109,800	\$27,500	\$25,300	\$1,400	\$12,500	\$13,210
Contribution to GSP (\$m)										
Direct										
Fishing	25.6	1.6	22.5	54.0	6.7	3.7	5.9	9.3	5.2	134.6
Downstream	4.6	0.8	6.9	9.4	2.4	1.1	3.5	1.5	2.1	32.4
All other sectors (indirect)	20.1	3.1	24.3	44.1	13.5	4.4	21.3	11.6	6.8	149.1
Total	50.2	5.6	53.6	107.5	22.6	9.2	30.8	22.5	14.1	316.1
Total/Direct	1.7	2.3	1.8	1.7	2.5	1.9	3.3	2.1	1.9	1.9
Total/Tonne (\$)	\$56,500	\$24,294	\$27,300	\$58,000	\$49,200	\$13,700	\$10,244	\$740	\$6,578	\$7,022
Employment (fte jobs) ^c										
Direct										
Fishing	90	28	185	414	155	28	531	63	74	1,569
Downstream	56	18	149	130	34	17	70	20	40	535
All other sectors (indirect)	217	33	265	480	150	48	234	127	74	1,628
Total	364	80	598	1,025	339	93	835	211	188	3,732
Total/Direct	2.5	1.7	1.8	1.9	1.8	2.0	1.4	2.5	1.6	1.8
Total/Tonne	0.41	0.35	0.31	0.55	0.74	0.14	0.28	0.01	0.09	0.08
Household Income (\$m)										
Direct										
Fishing	9.2	1.4	11.6	21.4	4.0	1.5	5.9	6.7	3.0	64.8
Downstream	2.9	0.6	4.9	6.5	1.7	0.8	2.6	1.0	1.5	22.5
All other sectors (indirect)	11.2	1.7	13.5	24.2	7.5	2.4	12.0	6.4	3.8	82.7
Total	23.4	3.7	30.0	52.1	13.3	4.7	20.5	14.1	8.4	170.0
Total/Direct	1.9	1.9	1.8	1.9	2.3	2.1	2.4	1.8	1.8	1.9
Total/Tonne (\$)	\$26,300	\$16,000	\$15,200	\$28,100	\$28,800	\$7,000	\$6,800	\$400	\$3,800	\$3,777

^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 625 full-time and 1,161 part-time, that is, 1,786 jobs in total.

Source: EconSearch (2009b)

Appendix Table 3.7 Economic rent in South Australian commercial fisheries,
2007/08 (\$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	30.7	2.9	33.0	75.7	15.9	5.6	20.9	16.3	7.5	208.6
Less Labour	9.2	1.2	12.2	21.3	5.8	1.5	9.5	6.7	2.7	70.2
Less Materials & Services	5.4	1.1	9.7	20.7	8.7	2.1	8.7	6.5	2.0	64.8
Less Depreciation	1.4	0.8	6.3	6.6	2.7	0.6	3.7	3.1	0.8	25.8
Less Opportunity Cost of Capital (@10%)	1.0	1.1	7.8	6.5	2.7	0.3	2.6	4.0	0.6	26.6
Economic Rent	13.8	-1.3	-3.0	20.6	-3.9	1.2	-3.6	-3.9	1.4	21.3

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

Source: EconSearch (2009b)

Appendix 4 Financial Performance Indicators, 1997/98 to 2005/06

Appendix Table 4.1 Financial performance in the SA Northern 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	Average per Boat	Share of TBCC	Average per Boat	Share of TBCC
(1) Total Boat Gross Income	\$373,813		\$371,014		\$383,627	
Variable Costs						
Fuel	\$25,302	10%	\$23,099	9%	\$33,275	12%
Repairs & Maintenance ^b	\$24,816	9%	\$24,386	9%	\$24,003	9%
Bait/Ice	\$14,161	5%	\$13,735	5%	\$13,187	5%
Provisions	\$7,337	3%	\$7,209	3%	\$7,096	3%
Labour - paid	\$93,550	35%	\$95,681	37%	\$101,743	36%
(2) - unpaid ^c	\$27,209	10%	\$27,828	11%	\$29,592	11%
Other	\$1,856	1%	\$1,881	1%	\$1,928	1%
(3) Total Variable Costs	\$194,231	73%	\$193,820	75%	\$210,823	76%
Fixed Costs						
Licence Fee	\$13,881	5%	\$9,761	4%	\$8,816	3%
Insurance	\$8,040	3%	\$8,040	3%	\$8,243	3%
(4) Interest	\$22,135	8%	\$20,432	8%	\$22,621	8%
(5) Labour - unpaid ^c	\$10,178	4%	\$10,488	4%	\$10,786	4%
(6) Leasing	\$4,644	2%	\$4,706	2%	\$4,824	2%
Legal & Accounting	\$2,608	1%	\$2,643	1%	\$2,709	1%
Telephone etc.	\$1,762	1%	\$1,786	1%	\$1,830	1%
Slipping & Mooring	\$3,146	1%	\$3,187	1%	\$3,267	1%
Travel	\$2,235	1%	\$2,264	1%	\$2,321	1%
Office & Admin	\$2,593	1%	\$2,627	1%	\$2,693	1%
(7) Total Fixed Costs	\$71,223	27%	\$65,934	25%	\$68,111	24%
(8) Total Boat Cash Costs (3 + 7)	\$265,455	100%	\$259,754	100%	\$278,934	100%
Boat Gross Margin (1 - 3)	\$179,582		\$177,194		\$172,803	
(9) Total Unpaid Labour (2 + 5)	\$37,387		\$38,317		\$40,378	
Gross Operating Surplus (1 - 8 + 9)	\$145,746		\$149,576		\$145,070	
(10) Boat Cash Income (1 - 8)	\$108,359		\$111,260		\$104,692	
(11) Depreciation	\$45,324		\$50,487		\$52,275	
(12) Boat Business Profit (10 - 11)	\$63,034		\$60,773		\$52,417	
(13) Profit at Full Equity (12 + 4 + 6)	\$89,814		\$85,911		\$79,863	
Boat Capital						
(14) Fishing Gear & Equip	\$398,105		\$443,451		\$459,157	
Licence Value	\$1,494,667		\$1,425,097		\$1,316,879	
(15) Total Boat Capital	\$1,892,772		\$1,868,548		\$1,776,036	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	22.6%		19.4%		17.4%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	4.7%		4.6%		4.5%	

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

^b 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).

^c 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 Northern 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	Average per Boat	Share of TBCC	Average per Boat	Share of TBCC
(1) Total Boat Gross Income	\$400,432		\$374,708		\$269,377	
Variable Costs						
Fuel	\$46,473	14%	\$41,059	13%	\$35,025	14%
Repairs & Maintenance ^b	\$30,069	9%	\$27,744	9%	\$23,946	9%
Bait/Ice	\$16,666	5%	\$12,825	4%	\$10,233	4%
Provisions	\$4,566	1%	\$4,213	1%	\$3,636	1%
Labour - paid	\$128,122	39%	\$119,891	39%	\$86,190	33%
(2) - unpaid ^c	\$17,905	5%	\$16,755	5%	\$12,045	5%
Other	\$3,309	1%	\$3,400	1%	\$3,537	1%
(3) Total Variable Costs	\$247,108	75%	\$225,887	74%	\$174,612	68%
Fixed Costs						
Licence Fee	\$11,906	4%	\$10,810	4%	\$12,690	5%
Insurance	\$8,717	3%	\$8,958	3%	\$9,317	4%
(4) Interest	\$35,464	11%	\$33,328	11%	\$32,901	13%
(5) Labour - unpaid ^c	\$8,850	3%	\$8,850	3%	\$8,850	3%
(6) Leasing	\$2,333	1%	\$2,398	1%	\$2,494	1%
Legal & Accounting	\$4,045	1%	\$4,157	1%	\$4,323	2%
Telephone etc.	\$2,612	1%	\$2,685	1%	\$2,792	1%
Slipping & Mooring	\$3,336	1%	\$3,428	1%	\$3,566	1%
Travel	\$1,587	0%	\$1,631	1%	\$1,697	1%
Office & Admin	\$3,878	1%	\$3,986	1%	\$4,146	2%
(7) Total Fixed Costs	\$82,728	25%	\$80,231	26%	\$82,775	32%
(8) Total Boat Cash Costs (3 + 7)	\$329,836	100%	\$306,118	100%	\$257,387	100%
Boat Gross Margin (1 - 3)	\$153,324		\$148,820		\$94,765	
(9) Total Unpaid Labour (2 + 5)	\$26,755		\$25,605		\$20,895	
Gross Operating Surplus (1 - 8 + 9)	\$97,351		\$94,194		\$32,885	
(10) Boat Cash Income (1 - 8)	\$70,596		\$68,589		\$11,990	
(11) Depreciation	\$56,905		\$61,880		\$65,355	
(12) Boat Business Profit (10 - 11)	\$13,691		\$6,709		-\$53,365	
(13) Profit at Full Equity (12 + 4 + 6)	\$51,489		\$42,435		-\$17,970	
Boat Capital						
(14) Fishing Gear & Equip	\$545,164		\$592,833		\$626,123	
Licence Value	\$2,160,000		\$2,021,238		\$1,453,068	
(15) Total Boat Capital	\$2,705,164		\$2,614,071		\$2,079,192	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	9.4%		7.2%		-2.9%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	1.9%		1.6%		-0.9%	

^a Financial performance estimates for 2000/01 and 2002/03 are based on the October 2001 survey of licence holders.

^b 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).

^c 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 Northern Zone Rock Lobster fishery, 2003/04 to 2005/06 (average per boat) ^a

	2003/04		2004/05		2005/06	
	Average per Boat	Share of TBCC	Average per Boat	Share of TBCC	Average per Boat	Share of TBCC
(1) Total Boat Gross Income	\$172,345		\$222,293		\$294,654	
Variable Costs						
Fuel	\$36,964	16%	\$45,445	17%	\$45,355	15%
Repairs & Maintenance ^b	\$25,607	11%	\$17,466	7%	\$16,983	6%
Bait/Ice	\$11,021	5%	\$16,750	6%	\$15,877	5%
Provisions	\$3,888	2%	\$4,609	2%	\$4,482	1%
Labour - paid	\$55,143	24%	\$63,406	24%	\$87,213	29%
(2) - unpaid ^c	\$7,706	3%	\$19,077	7%	\$26,240	9%
Other	\$3,643	2%	\$5,052	2%	\$5,245	2%
(3) Total Variable Costs	\$143,973	62%	\$171,806	64%	\$201,395	67%
Fixed Costs						
Licence Fee	\$16,225	7%	\$19,382	7%	\$19,588	7%
Insurance	\$9,598	4%	\$8,439	3%	\$8,761	3%
(4) Interest	\$33,755	15%	\$31,500	12%	\$31,889	11%
(5) Labour - unpaid ^c	\$8,850	4%	\$13,065	5%	\$13,557	5%
(6) Leasing	\$2,569	1%	\$11,870	4%	\$12,323	4%
Legal & Accounting	\$4,454	2%	\$2,738	1%	\$2,842	1%
Telephone etc.	\$2,876	1%	\$2,421	1%	\$2,514	1%
Slipping & Mooring	\$3,673	2%	\$2,410	1%	\$2,503	1%
Travel	\$1,748	1%	\$1,048	0%	\$1,088	0%
Office & Admin	\$4,270	2%	\$3,583	1%	\$3,720	1%
(7) Total Fixed Costs	\$88,018	38%	\$96,456	36%	\$98,786	33%
(8) Total Boat Cash Costs (3 + 7)	\$231,992	100%	\$268,262	100%	\$300,180	100%
Boat Gross Margin (1 - 3)	\$28,372		\$50,488		\$93,259	
(9) Total Unpaid Labour (2 + 5)	\$16,556		\$32,142		\$39,797	
Gross Operating Surplus (1 - 8 + 9)	-\$43,090		-\$13,827		\$34,270	
(10) Boat Cash Income (1 - 8)	-\$59,646		-\$45,968		-\$5,527	
(11) Depreciation	\$65,843		\$55,412		\$59,249	
(12) Boat Business Profit (10 - 11)	-\$125,489		-\$101,380		-\$64,775	
(13) Profit at Full Equity (12 + 4 + 6)	-\$89,165		-\$58,010		-\$20,563	
Boat Capital						
(14) Fishing Gear & Equip	\$630,795		\$431,090		\$460,939	
Licence Value	\$929,661		\$1,374,153		\$1,472,307	
(15) Total Boat Capital	\$1,560,457		\$1,805,243		\$1,933,245	
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	-14.1%		-13.5%		-4.5%	
Rate of Return on Total Boat Capital (13 / 15 * 100)	-5.7%		-3.2%		-1.1%	

^a Financial performance estimates for 2003/04 are based on the October 2001 survey of licence holders. Financial performance estimates for 2004/05 and 2005/06 are based on the March-April 2006 survey of licence holders.

^b 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).

^c 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.