

Economic Indicators  
for the Spencer Gulf and  
West Coast Prawn Fisheries  
2005/06

A report prepared for  
Primary Industries and Resources South Australia

Prepared by



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## Abbreviations

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

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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 20 of the *Fisheries Act 1982*.

This report is the ninth annual economic indicators report for the Spencer Gulf and West Coast prawn fisheries. The first report, prepared for 1997/98, entitled *Economic Indicators for the Spencer Gulf and West Coast Prawn Fishery 1997/98*, (EconSearch 1999), reported on the results of an initial economic survey of the two fisheries. The second and third annual reports, prepared for 1998/99 and 1999/00 respectively, provided an update of the 1997/98 economic indicators (EconSearch 2000 and 2001). The fourth annual report outlined the fisheries economic performance based on the results of an additional survey of licence holders (EconSearch 2002). The fifth to seventh reports, prepared for 2001/02 to 2003/04, provided an update of the economic indicators based on the second survey of licence holders (EconSearch 2003, 2004 and 2005a). The eighth report, prepared for 2004/05, outlined the fisheries economic performance based on the results of a third survey of licence holders conducted in November 2005.

The objective of this report, *Economic Indicators for the Spencer Gulf and West Coast Prawn Fisheries 2005/06*, was to provide an update of the economic indicators based on the November 2005 licence holder survey.

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

- gross value of production (catch and price);
- the cost of management of the fisheries;
- a summary of factors affecting costs in the fisheries;
- financial performance indicators (income, costs, profit, and return on investment);
- economic impact of the fisheries, both local and state;
- economic rent;
- external factors that influence the economic condition of the fisheries;
- prawn imports into Australia;
- prawn exports from SA (quantity and value); and
- prices for prawns in domestic markets.

The economic indicators detailed in this report represent an aggregate of the Spencer Gulf and West Coast prawn fisheries. Despite significant differences between these two fisheries, for confidentiality reasons, it is not possible to report the indicators separately.

For purposes of comparison, summary economic indicators for all South Australian commercial fisheries, up to 2004/05, are presented in Appendix 3.

## 2. Method of Analysis and Definition of Terms

### 2.1 Survey of Licence Holders in the Fisheries, 2004/05

The questionnaire for the November 2005 survey of licence holders was based on the previous surveys conducted in 1997/98 and 2000/01<sup>1</sup>. It was drafted by the consultants in consultation with the industry Extension Officer (Mr Martin Smallridge).

In November 2005, all licence holders in the fisheries were sent an introductory letter outlining the survey and encouraging them to participate. Licence holders were then contacted and face-to-face surveys were carried out. A total of 2 licence holders from the West Coast fishery and 20 from the Spencer Gulf fishery completed the survey, which represented 52 per cent of total licence holders in both fisheries in aggregate. Thus, the economic indicators for 2004/05 were survey-based estimates.

### 2.2 Updating the Indicators, 2005/06

The 2005/06 economic indicators for the Spencer Gulf and West Coast prawn fisheries were derived using a range of primary and secondary data and survey-based 2004/05 indicators. The following information was used to adjust the 2004/05 indicators to reflect the fisheries performance in 2005/06:

- SARDI data were used to reflect changes in catch size and its value between 2004/05 and 2005/06. Catch and value data were used to determine the gross income in the fisheries.
- Information on the change in fishing effort (number of days fished) between 2004/05 and 2005/06 was used to adjust the costs of inputs that were assumed to vary with fishing effort. These inputs included fuel and repairs and maintenance (R&M) costs.
- 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 2006).

### 2.3 Definition of Terms<sup>2</sup>

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

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

---

<sup>1</sup> Surveys conducted in 1997/98 and 2001/02 are described in EconSearch (2005a).

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

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

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

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

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

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

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

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

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

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

### 3. Economic Indicators for the Spencer Gulf and West Coast Prawn Fisheries

#### 3.1 Gross Value of Production

Catch levels in the Spencer Gulf and West Coast prawn fisheries in aggregate decreased by approximately 3.5 per cent between 2004/05 and 2005/06. This decrease was the result of a 69 tonne decrease in catch in the Spencer Gulf fishery with catch in the West Coast fishery identical to the previous year. For both fisheries in aggregate the catch in 2005/06 was approximately 6.5 per cent below the average catch for the 15-year period 1990/91 to 2005/06 (2,021 tonnes).

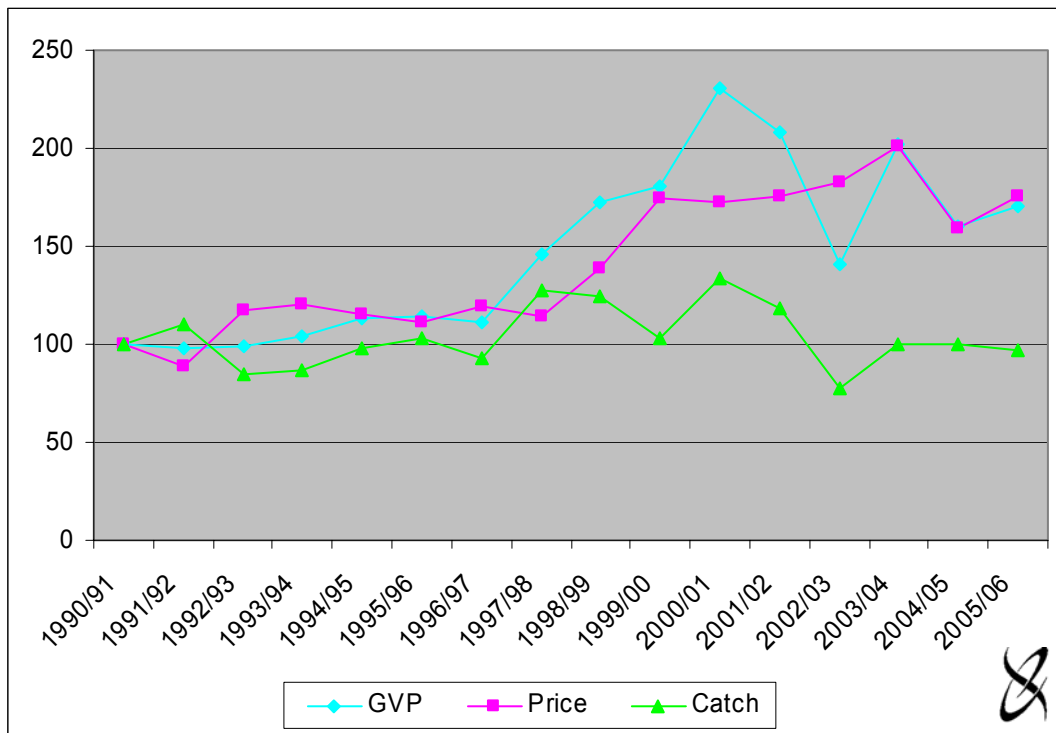
Table 3.1 Spencer Gulf and West Coast prawn catch and value of catch, 1990/91 to 2005/06

| Year    | West Coast |          | Spencer Gulf |          | Spencer Gulf and West Coast |          |
|---------|------------|----------|--------------|----------|-----------------------------|----------|
|         | (tonnes)   | (\$'000) | (tonnes)     | (\$'000) | (tonnes)                    | (\$'000) |
| 1990/91 | 184        | 2,113    | 1,767        | 17,879   | 1,951                       | 19,992   |
| 1991/92 | 83         | 932      | 2,072        | 18,721   | 2,155                       | 19,653   |
| 1992/93 | 0          | 0        | 1,645        | 19,709   | 1,645                       | 19,709   |
| 1993/94 | 12         | 166      | 1,681        | 20,693   | 1,693                       | 20,859   |
| 1994/95 | 104        | 1,226    | 1,807        | 21,375   | 1,911                       | 22,601   |
| 1995/96 | 201        | 2,234    | 1,812        | 20,632   | 2,013                       | 22,866   |
| 1996/97 | 166        | 1,833    | 1,647        | 20,389   | 1,813                       | 22,222   |
| 1997/98 | 192        | 2,301    | 2,300        | 26,859   | 2,492                       | 29,160   |
| 1998/99 | 110        | 1,498    | 2,315        | 33,074   | 2,425                       | 34,572   |
| 1999/00 | 106        | 1,937    | 1,910        | 34,198   | 2,016                       | 36,135   |
| 2000/01 | 81         | 1,490    | 2,522        | 44,518   | 2,603                       | 46,008   |
| 2001/02 | 127        | 1,661    | 2,182        | 39,873   | 2,309                       | 41,534   |
| 2002/03 | 29         | 538      | 1,479        | 27,681   | 1,508                       | 28,219   |
| 2003/04 | 15         | 218      | 1,943        | 40,171   | 1,958                       | 40,389   |
| 2004/05 | 21         | 284      | 1,939        | 31,759   | 1,960                       | 32,043   |
| 2005/06 | 21         | 358      | 1,870        | 33,610   | 1,891                       | 33,968   |

Source: SARDI Aquatic Sciences.

Figure 3.1 overleaf illustrates how the values of the fisheries have changed over the period 1990/91 to 2005/06. The nominal value of the prawn catch in 2005/06 was 70 per cent above that in 1990/91, despite a 3 per cent decrease in catch, accordingly, the average price of prawns in the Spencer Gulf and West Coast prawn fisheries increased over the 15-year period by 75 per cent in nominal terms (i.e. from \$10.25/kg in 1990/91 to \$17.96/kg in 2005/06). The nominal price increased by approximately 10 per cent in 2005/06 compared to the previous year, recovering slightly from the 21 per cent decrease between 2003/04 and 2004/05.

Figure 3.1 GVP, price and catch indices for the Spencer Gulf and West Coast prawn fisheries (1990/91=100) <sup>a</sup>

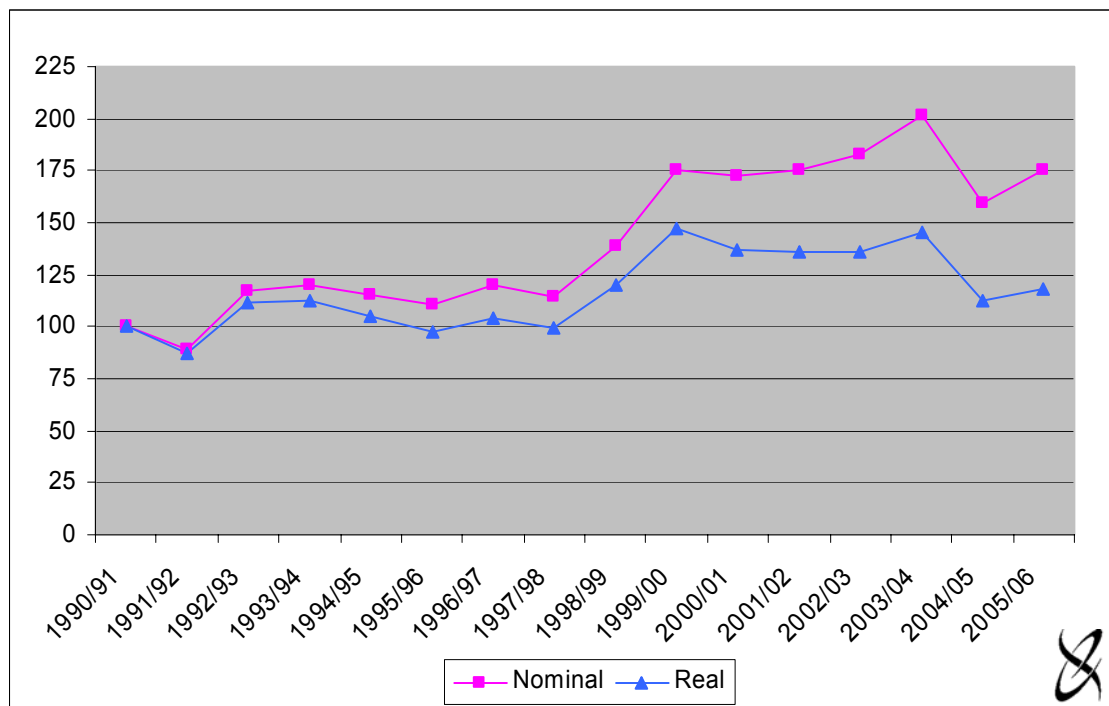


<sup>a</sup> GVP, price and catch indices are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: SARDI Aquatic Sciences.

Figure 3.2 shows that from 1990/91 to 2005/06, the 75 per cent increase in nominal price was equivalent to an 18 per cent increase in the real price of prawns. This means that the value of the prawn catch in Spencer Gulf and West Coast fisheries in 2005/06 was 14 per cent higher in real terms than it was in 1990/91 (70 per cent higher in nominal terms as noted above).

Figure 3.2 Price indices for the Spencer Gulf and West Coast prawn fisheries (1990/91=100) <sup>a, b</sup>



<sup>a</sup> Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The CPI (consumer price index) has been used to make this adjustment (ABS 2006). It enables meaningful comparisons of prices to be made between years.

<sup>b</sup> Price indices are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: SARDI Aquatic Sciences and ABS (2006).

### 3.2 Cost of Management

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

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

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

Table 3.2 shows actual licence fee receipts for the period 1996/97 to 2006/07 for each of the fisheries and an aggregate of both.

Table 3.2 Cost of management in the Spencer Gulf and West Coast prawn fisheries, 1996/97 to 2006/07

|                        | Licence Fees<br>(\$'000) | Gross Value of Production<br>(\$'000) | Fees/GVP<br>(%) | Catch<br>(tonnes) | Fee/Catch<br>(\$/kg) | Licence Holders<br>(no) | Fee/Licence Holder<br>(\$/licence) |
|------------------------|--------------------------|---------------------------------------|-----------------|-------------------|----------------------|-------------------------|------------------------------------|
| <b>West Coast</b>      |                          |                                       |                 |                   |                      |                         |                                    |
| 1996/97                | 47                       | 1,833                                 | 2.6%            | 166               | \$0.28               | 3                       | \$15,670                           |
| 1997/98                | 88                       | 2,301                                 | 3.8%            | 192               | \$0.46               | 3                       | \$29,428                           |
| 1998/99                | 56                       | 1,498                                 | 3.8%            | 110               | \$0.51               | 3                       | \$18,800                           |
| 1999/00                | 51                       | 1,937                                 | 2.6%            | 106               | \$0.48               | 3                       | \$17,058                           |
| 2000/01                | 47                       | 1,490                                 | 3.1%            | 81                | \$0.57               | 3                       | \$15,508                           |
| 2001/02                | 42                       | 1,661                                 | 2.6%            | 127               | \$0.33               | 3                       | \$14,139                           |
| 2002/03                | 47                       | 538                                   | 8.7%            | 29                | \$1.61               | 3                       | \$15,557                           |
| 2003/04                | 21                       | 218                                   | 9.8%            | 15                | \$1.43               | 3                       | \$7,136                            |
| 2004/05                | 28                       | 284                                   | 10.0%           | 21                | \$1.35               | 3                       | \$9,468                            |
| 2005/06                | 31                       | 358                                   | 8.7%            | 21                | \$1.48               | 3                       | \$10,332                           |
| 2006/07                | 15                       | n.a.                                  | -               | n.a.              | -                    | 3                       | \$4,969                            |
| <b>Spencer Gulf</b>    |                          |                                       |                 |                   |                      |                         |                                    |
| 1996/97                | 648                      | 20,389                                | 3.2%            | 1,647             | \$0.39               | 39                      | \$16,603                           |
| 1997/98                | 916                      | 26,859                                | 3.4%            | 2,300             | \$0.40               | 39                      | \$23,490                           |
| 1998/99                | 732                      | 33,074                                | 2.2%            | 2,315             | \$0.32               | 39                      | \$18,775                           |
| 1999/00                | 653                      | 34,198                                | 1.9%            | 1,910             | \$0.34               | 39                      | \$16,739                           |
| 2000/01                | 605                      | 44,518                                | 1.4%            | 2,522             | \$0.24               | 39                      | \$15,508                           |
| 2001/02                | 568                      | 39,873                                | 1.4%            | 2,182             | \$0.26               | 39                      | \$14,557                           |
| 2002/03                | 671                      | 27,681                                | 2.4%            | 1,479             | \$0.45               | 39                      | \$17,193                           |
| 2003/04                | 753                      | 40,171                                | 1.9%            | 1,943             | \$0.39               | 39                      | \$19,316                           |
| 2004/05                | 734                      | 31,759                                | 2.3%            | 1,939             | \$0.38               | 39                      | \$18,826                           |
| 2005/06                | 803                      | 33,610                                | 2.4%            | 1,870             | \$0.43               | 39                      | \$20,587                           |
| 2006/07                | 899                      | n.a.                                  | -               | n.a.              | -                    | 39                      | \$23,053                           |
| <b>Total Fisheries</b> |                          |                                       |                 |                   |                      |                         |                                    |
| 1996/97                | 695                      | 22,222                                | 3.1%            | 1,813             | \$0.38               | 42                      | \$16,536                           |
| 1997/98                | 1,004                    | 29,160                                | 3.4%            | 2,492             | \$0.40               | 42                      | \$23,914                           |
| 1998/99                | 789                      | 34,572                                | 2.3%            | 2,425             | \$0.33               | 42                      | \$18,777                           |
| 1999/00                | 704                      | 36,135                                | 1.9%            | 2,016             | \$0.35               | 42                      | \$16,762                           |
| 2000/01                | 651                      | 46,008                                | 1.4%            | 2,603             | \$0.25               | 42                      | \$15,508                           |
| 2001/02                | 610                      | 41,534                                | 1.5%            | 2,309             | \$0.26               | 42                      | \$14,527                           |
| 2002/03                | 717                      | 28,219                                | 2.5%            | 1,508             | \$0.48               | 42                      | \$17,076                           |
| 2003/04                | 775                      | 40,389                                | 1.9%            | 1,958             | \$0.40               | 42                      | \$18,446                           |
| 2004/05                | 763                      | 32,043                                | 2.4%            | 1,960             | \$0.39               | 42                      | \$18,158                           |
| 2005/06                | 834                      | 33,968                                | 2.5%            | 1,891             | \$0.44               | 42                      | \$19,855                           |
| 2006/07                | 914                      | n.a.                                  | -               | n.a.              | -                    | 42                      | \$21,761                           |

Source: PIRSA Fisheries and SARDI Aquatic Sciences.

For the fisheries in aggregate, between 1996/97 and 2005/06:

- licence fees as a percentage of gross value of production decreased from 3.1 per cent in 1996/97 to 1.4 per cent in 2000/01, but have increased in subsequent years reaching 2.5 per cent in 2005/06;
- the cost of licence fees per kilogram of landed prawns decreased from \$0.38 in 1996/97 to \$0.25 in 2000/01, mostly due to an increase in catch. The cost per kilogram has increased in subsequent years and was \$0.44 in 2005/06;
- the cost per licence holder increased from \$16,536 in 1996/97 to \$14,527 in 2001/02, solely due to a decrease in aggregate licence fees. The average fee per licence holder has since increased and was \$19,855 in 2005/06;
- the total number of licence holders in the West Coast and Spencer Gulf has remained unchanged over the entire 11 years.

The cost per licence holder increased from \$19,855 in 2005/06 to \$21,761 in 2006/07, an increase of approximately 10 per cent.

### 3.3 Summary of Factors Affecting Costs in the Fisheries

The information outlined in Table 3.3 (and similar data for previous years) was used to adjust the 2004/05 survey based financial performance indicators to reflect the costs incurred in the fisheries in 2005/06.

Table 3.3 Factors affecting costs in the Spencer Gulf and West Coast prawn fisheries, 2004/05 to 2005/06

|   | 2004/05 | 2005/06 | Change |
|---|---------|---------|--------|
| Average days fished per boat <sup>a</sup>         | 55      | 47      | -14.5% |
| Price of fuel - Transportation Index <sup>b</sup> | 149.0   | 158.8   | 6.6%   |
| Interest charges (%/annum) <sup>c</sup>           | 8.1%    | 8.2%    | 1.2%   |
| CPI Adelaide <sup>d</sup>                         | 151.8   | 157.6   | 3.8%   |

<sup>a</sup> SARDI Aquatic Sciences (Angelo Tsolos pers. comm.).

<sup>b</sup> ABS transportation index for Adelaide (ABS 2006).

<sup>c</sup> RBA indicator lending rate for small business (RBA 2006).

<sup>d</sup> Consumer price index for Adelaide (ABS 2006).

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

### 3.4 Financial Performance Indicators

The major measures of the financial performance per boat in the Spencer Gulf and West Coast prawn fisheries for the period 2001/02 to 2005/06 are shown in Table 3.4<sup>4</sup>. Financial performance estimates for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on the February 2002 licence holder survey. Financial performance estimates for 2004/05 and 2005/06 are based on the most recent survey, carried out in November 2005.

Estimates of financial performance for the Spencer Gulf and West Coast fisheries are presented as an average of both fisheries in aggregate. Despite significant differences between the two fisheries, the limited number of licence holders in the West Coast fishery prevents reporting each fishery separately for confidentiality reasons.

#### ***Income...***

Total recorded prawn catch in the Spencer Gulf and West Coast fisheries decreased by approximately 4 per cent between 2004/05 and 2005/06, but with a 10 per cent increase in price, gross receipts from the sale of prawns increased by 6 per cent over the same period (Table 3.1). The estimated average gross income per surveyed boat in the fisheries was approximately \$751,000 in 2005/06, compared to just \$708,000 in 2004/05, an increase of approximately 6 per cent (Table 3.3).

#### ***Costs...***

In 2005/06 about 51 per cent of total cash costs<sup>5</sup> were attributable to labour costs, by far the largest individual cost item. The other significant cash costs were fuel (11 per cent), repairs and maintenance (10 per cent) and interest (8 per cent) (Table 3.4).

Overall, total cash costs per boat increased by approximately 1 per cent, up from \$488,000 in 2004/05 to \$496,000 in 2005/06.

#### ***Cash Income and Profit...***

As noted elsewhere, the labour costs reported in Table 3.4 are comprised of payments to skippers and crew as well as an imputed wage to operators and other family members who are not paid a wage directly by the business. Accordingly, cash operating surplus was calculated by including imputed wages as part of cash costs. The cash operating surplus in 2005/06 was estimated to be approximately \$255,000, an increase of 16 per cent compared to the previous year.

Cash operating surplus and earnings before tax or business profit (\$112,000 in 2005/06) give an indication of the capacity of the operator to remain in the fishery in the short to medium term. Average earnings before tax were estimated to be \$112,000 in 2005/06, up from \$59,000 in 2004/05 (Table 3.4).

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<sup>4</sup> Estimates of financial performance for 1997/98 to 2000/01 are detailed in Appendix 4 of this report.

<sup>5</sup> Fixed and variable costs have not been differentiated; therefore Boat Gross Margin has not been calculated. Boat Gross Margin is available upon request.

Table 3.4 Financial performance in the Spencer Gulf and West Coast prawn fisheries, 2001/02 to 2005/06 (average per boat) <sup>a, b</sup>

|   | 2001/02            |              | 2002/03            |              | 2003/04            |              | 2004/05            |              | 2005/06            |              |
|---|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|
|   | All Boats          | Share of TCC | All Boats          | Share of TCC | All Boats          | Share of TCC | All Boats          | Share of TCC | All Boats          | Share of TCC |
| <b>Gross Income</b>                               | <b>\$907,024</b>   |              | <b>\$616,249</b>   |              | <b>\$882,019</b>   |              | <b>\$708,081</b>   |              | <b>\$750,619</b>   |              |
| <b>Costs</b>                                      |                    |              |                    |              |                    |              |                    |              |                    |              |
| Fuel  | \$46,173           | 9%           | \$42,537           | 10%          | \$43,921           | 9%           | \$62,440           | 13%          | \$56,862           | 11%          |
| R&M   | \$42,408           | 8%           | \$39,529           | 10%          | \$41,356           | 8%           | \$53,514           | 11%          | \$47,481           | 10%          |
| Provisions  | \$5,757            | 1%           | \$5,366            | 1%           | \$5,614            | 1%           | \$3,875            | 1%           | \$3,438            | 1%           |
| Labour  | \$344,554          | 66%          | \$234,097          | 57%          | \$335,056          | 65%          | \$237,426          | 49%          | \$251,689          | 51%          |
| Licence fee                                       | \$14,139           | 3%           | \$16,620           | 4%           | \$17,953           | 3%           | \$20,805           | 4%           | \$22,750           | 5%           |
| Insurance   | \$11,447           | 2%           | \$11,905           | 3%           | \$12,264           | 2%           | \$19,179           | 4%           | \$19,911           | 4%           |
| Interest  | \$15,005           | 3%           | \$14,812           | 4%           | \$15,197           | 3%           | \$41,275           | 8%           | \$41,784           | 8%           |
| Admin and Other                                   | \$40,812           | 8%           | \$42,448           | 10%          | \$43,727           | 8%           | \$49,797           | 10%          | \$51,700           | 10%          |
| <b>Total Cash Costs</b>                           | <b>\$520,294</b>   | <b>100%</b>  | <b>\$407,315</b>   | <b>100%</b>  | <b>\$515,088</b>   | <b>100%</b>  | <b>\$488,310</b>   | <b>100%</b>  | <b>\$495,615</b>   | <b>100%</b>  |
| <b>Cash Operating Surplus</b>                     | <b>\$386,729</b>   |              | <b>\$208,935</b>   |              | <b>\$366,931</b>   |              | <b>\$219,771</b>   |              | <b>\$255,004</b>   |              |
| <b>Depreciation</b>                               | <b>\$105,436</b>   |              | <b>\$117,102</b>   |              | <b>\$123,805</b>   |              | <b>\$160,582</b>   |              | <b>\$142,871</b>   |              |
| <b>Earnings Before Tax</b>                        | <b>\$281,294</b>   |              | <b>\$91,833</b>    |              | <b>\$243,126</b>   |              | <b>\$59,189</b>    |              | <b>\$112,133</b>   |              |
| <b>Earnings Before Interest &amp; Tax</b>         | <b>\$296,298</b>   |              | <b>\$106,645</b>   |              | <b>\$258,323</b>   |              | <b>\$100,464</b>   |              | <b>\$153,918</b>   |              |
| <b>Capital</b>                                    |                    |              |                    |              |                    |              |                    |              |                    |              |
| Fishing Gear & Equipment                          | \$1,080,070        |              | \$1,199,577        |              | \$1,268,242        |              | \$1,455,947        |              | \$1,295,365        |              |
| Licence Value                                     | \$3,279,940        |              | \$2,228,454        |              | \$3,189,519        |              | \$4,040,909        |              | \$4,283,669        |              |
| <b>Total Capital</b>                              | <b>\$4,360,010</b> |              | <b>\$3,428,031</b> |              | <b>\$4,457,761</b> |              | <b>\$5,496,856</b> |              | <b>\$5,579,034</b> |              |
| <b>Rate of Return to Fishing Gear &amp; Equip</b> | <b>27.4%</b>       |              | <b>8.9%</b>        |              | <b>20.4%</b>       |              | <b>6.9%</b>        |              | <b>11.9%</b>       |              |
| <b>Rate of Return to Total Capital</b>            | <b>6.8%</b>        |              | <b>3.1%</b>        |              | <b>5.8%</b>        |              | <b>1.8%</b>        |              | <b>2.8%</b>        |              |

<sup>a</sup> Estimates of financial performance for the years 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Financial performance estimates for 2000/01 to 2003/04 are based on the February 2002 survey of licence holders. Financial performance estimates for 2004/05 and 2005/06 are based on the November 2005 survey of licence holders. Financial performance estimates for 1997/98 to 2000/01 are detailed in Appendix 4 of this report.

<sup>b</sup> Financial performance estimates are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: EconSearch analysis.

### **Return on Investment...**

There are a number of interpretations of the concept of return on investment. For the purpose of this analysis it is appropriate to consider the investment as the capital employed by an average licence holder. Capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. It does not include working capital or capital associated with other businesses operated by the licence holder. The return on investment has been calculated as the net profit after depreciation as a percentage of the total capital employed.

The average return on investment for the fisheries is reported in Table 3.4. The rate of return to boat capital (i.e. fishing gear and equipment) was estimated to be almost 12 per cent and the rate of return to total capital was estimated to average around 3 per cent in 2005/06. The rates of return for 2005/06 were slightly higher than those reported for 2004/05.

### **Licence values...**

The value of licences represents a significant proportion of the capital used by each licence holder. The reported licence value of \$4,284,000 for 2005/06 in Table 3.4 represents the licence holders' estimate of the value of their licence based on the 2005 survey responses and updated for changes in gross income in the fisheries.

The PIRSA Fisheries record of licence transfers for 2005/06 indicates no licences were transferred in either fishery over the 12 month period.

Since there have been limited transfers of licences in recent years and the current market value of licences is uncertain, a sensitivity analysis was undertaken to estimate the rate of return to capital for a range of licence values. The results are presented in Table 3.5. Based on the costs and returns shown for the year 2005/06 in Table 3.4, a licence value of \$2.14 million (approximately 50 per cent below the licence value estimated for 2005/06) would mean an annual return to the total asset of 4.5 per cent, while a licence value of \$6.43 million (approximately 50 per cent above the licence value estimated for 2005/06) would mean an annual return to the total asset of 2.0 per cent.

Table 3.5 Sensitivity of rate of return to changes in licence value, 2005/06

|                                     |             |                          |             |
|-------------------------------------|-------------|--------------------------|-------------|
| Licence Value (\$)                  | \$2,141,834 | \$4,283,669 <sup>a</sup> | \$6,425,503 |
| Rate of Return to Total Capital (%) | 4.5%        | 2.8%                     | 2.0%        |

<sup>a</sup> The licence value estimated for 2005/06.

Source: EconSearch analysis.

### 3.5 Regional Economic Impact

Estimates of the economic impact of the Spencer Gulf and West Coast prawn fishing industry on the South Australian and regional (Eyre<sup>6</sup>) economies in 2005/06 are outlined below.

#### 3.5.1 Measuring direct and flow-on effects

Estimates of the direct economic impact of the Spencer Gulf and West Coast prawn fisheries are consistent with the method employed in PIRSA's *Food for the Future* value-chain analysis, 2004/05<sup>7</sup>.

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) trade<sup>8</sup>.

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

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

In order to compile a representative cost structure for the fishing sector, costs per boat were derived from data provided by operators in the fisheries in the financial survey for 2004/05 and updated to 2005/06, as described earlier. On an item-by-item basis, the expenditures were allocated between those occurring in the Eyre region, those occurring in South Australia and those goods and services imported from outside the state.

Estimates of the net value of local (i.e. regional and state) processing margins and retail and food service trade margins were derived from PIRSA's *Food for the Future* value-chain analysis (*Seafood Scorecard, 2004/05*) (Jack Langberg, PIRSA, pers. comm.). Estimates of the net value of local transport margins and capital expenditure per licence holder were derived from the survey of licence holders.

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<sup>6</sup> The Eyre region is comprised of the Statistical Division of Eyre as defined by the Australian Bureau of Statistics.

<sup>7</sup> The relevant information was obtained from Jack Langberg (PIRSA, pers. comm.).

<sup>8</sup> Estimates of economic impact prepared for this and other commercial fisheries in South Australia (except Lakes and Coorong) for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade.

Economic impacts have been specified in terms of the following economic indicators:

- value of output;
- employment;
- household income; and
- contribution to gross state or regional product.

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

**Employment** is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent (fte) 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 2005/06 by the Spencer Gulf and West Coast prawn fishing industry in South Australia and the Eyre region are outlined in Tables 3.6 and 3.7, respectively.

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

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

#### **Value of output...**

The value of output generated directly in South Australia and the Eyre region by Spencer Gulf and West Coast prawn fishing enterprises summed to \$34.0 million in 2005/06 (Table 3.6 and 3.7), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$16.5 million (Table 3.6), \$2.6 million of which occurred in the Eyre region, (Table 3.7).

Table 3.6 The economic impact of the Spencer Gulf and West Coast prawn fishing industry in South Australia, 2005/06 <sup>a</sup>

| Sector                            | Output      |               | Employment <sup>b</sup> |               | Household Income |               | Contribution to GSP |               |
|-----------------------------------|-------------|---------------|-------------------------|---------------|------------------|---------------|---------------------|---------------|
|                                   | (\$m)       | %             | (fte jobs)              | %             | (\$m)            | %             | (\$m)               | %             |
| Direct effects                    |             |               |                         |               |                  |               |                     |               |
| Fishing                           | 34.0        | 34.3%         | 217                     | 33.5%         | 10.6             | 37.2%         | 25.1                | 45.5%         |
| Processing                        | 0.7         | 0.7%          | 2                       | 0.3%          | 0.1              | 0.3%          | 0.2                 | 0.3%          |
| Transport                         | 0.7         | 0.7%          | 3                       | 0.5%          | 0.2              | 0.8%          | 0.3                 | 0.6%          |
| Retail                            | 3.4         | 3.4%          | 50                      | 7.8%          | 1.4              | 5.0%          | 1.7                 | 3.1%          |
| Food services                     | 9.4         | 9.5%          | 81                      | 12.4%         | 2.4              | 8.5%          | 3.7                 | 6.7%          |
| Capital expenditure <sup>c</sup>  | 2.3         | 2.3%          | 23                      | 3.6%          | 0.7              | 2.5%          | 0.9                 | 1.7%          |
| <b>Total Direct <sup>d</sup></b>  | <b>50.4</b> | <b>50.9%</b>  | <b>378</b>              | <b>54.5%</b>  | <b>15.4</b>      | <b>51.9%</b>  | <b>31.9</b>         | <b>56.1%</b>  |
| Flow-on effects                   |             |               |                         |               |                  |               |                     |               |
| Trade                             | 7.3         | 7.4%          | 83                      | 12.8%         | 2.8              | 9.7%          | 3.4                 | 6.2%          |
| Manufacturing                     | 10.8        | 10.9%         | 35                      | 5.3%          | 1.6              | 5.6%          | 2.5                 | 4.6%          |
| Business Services                 | 6.0         | 6.0%          | 36                      | 5.5%          | 2.2              | 7.7%          | 2.8                 | 5.1%          |
| Transport                         | 2.4         | 2.4%          | 11                      | 1.7%          | 0.8              | 2.7%          | 1.1                 | 2.1%          |
| Other Sectors                     | 22.1        | 22.3%         | 107                     | 16.4%         | 5.7              | 19.9%         | 13.4                | 24.2%         |
| <b>Total Flow-on <sup>d</sup></b> | <b>48.6</b> | <b>49.1%</b>  | <b>272</b>              | <b>41.8%</b>  | <b>13.0</b>      | <b>45.6%</b>  | <b>23.3</b>         | <b>42.2%</b>  |
| <b>Total <sup>d</sup></b>         | <b>99.0</b> | <b>100.0%</b> | <b>649</b>              | <b>100.0%</b> | <b>28.4</b>      | <b>100.0%</b> | <b>55.2</b>         | <b>100.0%</b> |
| Total/Direct                      | 2.0         | -             | 1.7                     | -             | 1.8              | -             | 1.7                 | -             |
| Total/Tonne                       | \$52,300    | -             | 0.34                    | -             | \$15,000         | -             | \$29,200            | -             |

<sup>a</sup> Estimates of economic impact are for the Spencer Gulf and West Coast fisheries in aggregate.

<sup>b</sup> Full-time equivalent jobs. Direct employment in the fisheries was comprised of 48 full-time jobs and 197 part-time jobs, that is, 244 jobs in aggregate.

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

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

Source: EconSearch analysis.

Flow-ons to other sectors of the state economy added another \$48.6 million in output (\$14.4 million in the regional economy). The sectors most affected were the trade, manufacturing, business services and transport sectors.

### **Employment and household income...**

In 2005/06, the Spencer Gulf and West Coast prawn fisheries was responsible for direct employment of around 217 full-time equivalent (fte) jobs and downstream activities created employment of around 158 fte jobs state-wide. Flow-on business activity was estimated to generate a further 269 fte jobs state-wide (101 regionally). These state-wide jobs were concentrated in the trade (82), business services (35) and manufacturing (34) sectors.

Personal income of \$10.6 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$4.9 million in downstream activities in SA. An additional \$13.0 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 \$28.4 million in SA (\$15.6 million in the Eyre region).

**Table 3.7** The economic impact of the Spencer Gulf and West Coast prawn fishing industry in the Eyre region, 2005/06

| Sector                            | Output      |               | Employment <sup>b</sup> |               | Household Income |               | Contribution to GRP |               |
|-----------------------------------|-------------|---------------|-------------------------|---------------|------------------|---------------|---------------------|---------------|
|                                   | (\$m)       | %             | (fte jobs)              | %             | (\$m)            | %             | (\$m)               | %             |
| Direct effects                    |             |               |                         |               |                  |               |                     |               |
| Fishing                           | 34.0        | 66.5%         | 217                     | 61.5%         | 10.6             | 68.0%         | 25.1                | 74.1%         |
| Processing                        | 0.2         | 0.3%          | 1                       | 0.2%          | 0.0              | 0.2%          | 0.0                 | 0.1%          |
| Transport                         | 0.4         | 0.7%          | 2                       | 0.6%          | 0.1              | 0.8%          | 0.2                 | 0.5%          |
| Retail                            | 0.2         | 0.3%          | 3                       | 0.8%          | 0.1              | 0.4%          | 0.1                 | 0.3%          |
| Food services                     | 0.5         | 0.9%          | 5                       | 1.3%          | 0.1              | 0.8%          | 0.2                 | 0.5%          |
| Capital expenditure <sup>c</sup>  | 1.5         | 2.9%          | 24                      | 6.7%          | 0.6              | 3.8%          | 0.7                 | 2.2%          |
| <b>Total Direct <sup>d</sup></b>  | <b>36.6</b> | <b>68.8%</b>  | <b>252</b>              | <b>64.4%</b>  | <b>11.5</b>      | <b>70.2%</b>  | <b>26.4</b>         | <b>75.5%</b>  |
| Flow-on effects                   |             |               |                         |               |                  |               |                     |               |
| Trade                             | 3.1         | 6.0%          | 40                      | 11.4%         | 1.1              | 7.3%          | 1.5                 | 4.3%          |
| Manufacturing                     | 2.1         | 4.1%          | 10                      | 2.8%          | 0.4              | 2.5%          | 0.6                 | 1.7%          |
| Business Services                 | 1.2         | 2.3%          | 8                       | 2.3%          | 0.4              | 2.6%          | 0.6                 | 1.6%          |
| Transport                         | 0.8         | 1.5%          | 4                       | 1.3%          | 0.3              | 1.7%          | 0.4                 | 1.2%          |
| Other Sectors                     | 7.4         | 14.5%         | 40                      | 11.2%         | 1.9              | 11.9%         | 4.6                 | 13.5%         |
| <b>Total Flow-on <sup>d</sup></b> | <b>14.4</b> | <b>28.3%</b>  | <b>102</b>              | <b>28.9%</b>  | <b>4.1</b>       | <b>26.0%</b>  | <b>7.6</b>          | <b>22.3%</b>  |
| <b>Total <sup>d</sup></b>         | <b>51.0</b> | <b>100.0%</b> | <b>354</b>              | <b>100.0%</b> | <b>15.6</b>      | <b>100.0%</b> | <b>33.9</b>         | <b>100.0%</b> |
| Total/Direct                      | 1.4         | -             | 1.4                     | -             | 1.4              | -             | 1.3                 | -             |
| Total/Tonne                       | \$26,900    | -             | 0.19                    | -             | \$8,200          | -             | \$17,900            | -             |

<sup>a</sup> Estimates of economic impact are for the Spencer Gulf and West Coast fisheries in aggregate.

<sup>b</sup> Full-time equivalent jobs. Direct employment in the fisheries was comprised of 48 full-time jobs and 197 part-time jobs, that is, 244 jobs in aggregate.

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

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

Source: EconSearch analysis.

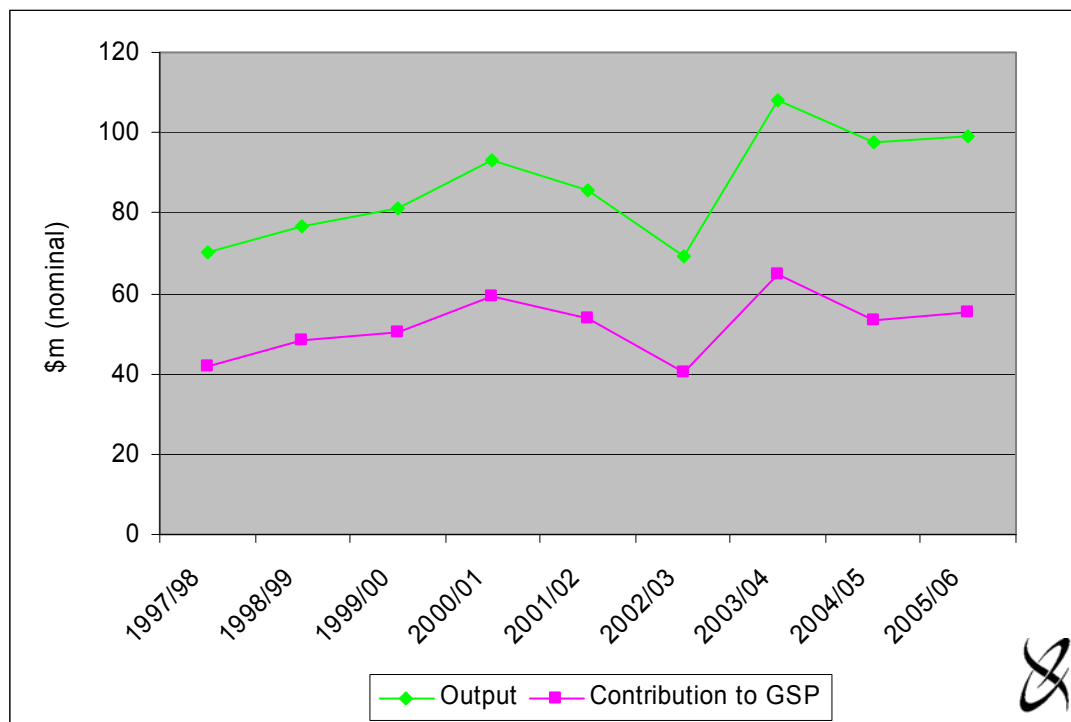
### **Contribution to GSP and GRP...**

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 2005/06, total Spencer Gulf and West Coast prawn fishing industry related contribution to GSP in South Australia was \$55.2 million (\$33.9 million in the Eyre region), \$25.1 million generated by fishing directly, \$6.8 million generated by downstream activities and \$23.3 million generated in other sectors of the state economy.

### **Total impacts over time...**

Figures 3.3 and 3.4 illustrate the total economic impact of the fisheries on the SA economy for the eight-year period, 1997/98 to 2005/06. Estimates of economic impact are expressed in nominal terms, accordingly no adjustment has been made to reflect inflation.

Figure 3.3 Total gross state product and output impact of the Spencer Gulf and West Coast prawn fishing industry in SA, 1997/98 to 2005/06 <sup>a, b</sup>



<sup>a</sup> The economic impact of the Spencer Gulf and West Coast prawn fisheries 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.

<sup>b</sup> Estimates of economic impact are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: EconSearch (2005a) and EconSearch analysis.

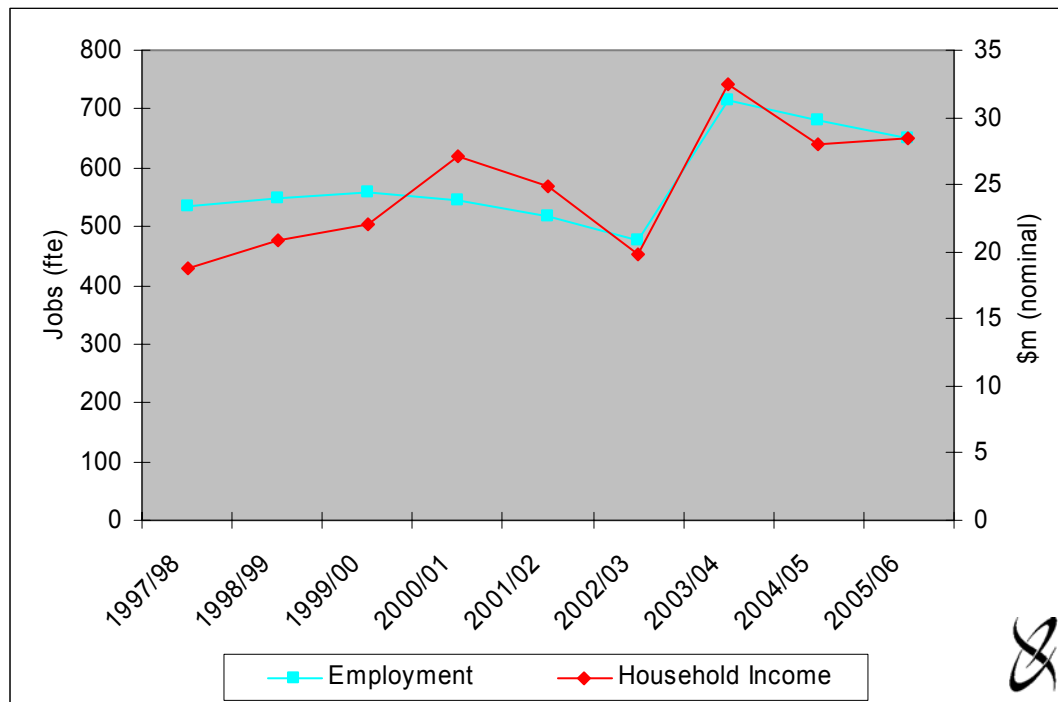
Estimates of economic impact for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on a second survey of licence holders conducted in September 2001. Estimates for 2004/05 and 2005/06 are based on the most recent survey of licence holders conducted in November 2005.

The economic impact of the Spencer Gulf and West Cost prawn fisheries 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 2005/06 are based on different survey samples and techniques, some of the variability between years, is therefore, attributable to sampling variability.

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

Figure 3.4 Total employment and household income impact of the Spencer Gulf and West Coast prawn fishing industry in SA, 1997/98 to 2005/06 <sup>a, b</sup>



<sup>a</sup> The economic impact of the Spencer Gulf and West Coast prawn fisheries 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.

<sup>b</sup> Estimates of economic impact are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: EconSearch (2005a) and EconSearch analysis.

### 3.6 Economic Rent

Economic rent<sup>9</sup> 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 Spencer Gulf and West Coast prawn fisheries and the good produced is the landed prawns.

<sup>9</sup> Economic rent is comprised of three types of rent: entrepreneurial rent, quasi-rent and resource rent. As in any business some operators are more skilful than others and will therefore earn more profit. These profits, which are one component of economic rent, are *entrepreneurial rents*. In the short-term fishers may earn large surpluses over costs, which may provide prima facie evidence of substantial resource rents. However, there are some circumstances where such surpluses can occur but they are not true rents. These are referred to as *quasi-rents*. One example is where a fishery is developing or recovering and there may be under-investment in the fishery. Another example is where there is a short-term but unsustainable increase in price due to, for example, exchange rate fluctuations. However, some profits will be obtained because the natural resource being used (i.e. the fishery) has a value. These profits are described as *resource rents* and are also a component of economic rent.

The unit costs or long term costs all need to be covered if the licence holder is to remain in the fishery. These long-term costs include direct operating costs such as fuel, labour (including the opportunity cost of a self employed fisher's own labour), bait, overheads such as administration and licences and the cost of capital invested in the boat and gear (excluding licence). Capital cost includes depreciation and the opportunity cost of the capital applied to the fishery. The opportunity cost is equivalent to what the fisher's investment could have earned in the next best alternative use.

Determining the opportunity cost of capital involves an assessment of the degree of financial risk involved in the activity. For a risk-free operation, an appropriate opportunity cost of capital might be the long-term real rate of return on government bonds. The greater the risks involved, the greater is the necessary return on capital to justify the investment in that particular activity. For this analysis, the long-term (10 year) real rate of return on government (treasury) bonds of 5 per cent has been used and a risk premium of 5 per cent has been applied.

Given the relatively high-risk nature of the industry (weak property rights therefore short time horizons, exposure to exchange rate fluctuations, general price volatility, 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 Spencer Gulf and West Coast prawn fisheries in 2005/06 was estimated to be approximately \$1.1 million, a slight increase on 2004/05 when the returns were -\$2.0 million (Table 3.8).

Table 3.8 Economic rent in the Spencer Gulf and West Coast prawn fisheries, 1997/98 to 2005/06 (\$'000) <sup>a</sup>

|         | Gross Income | Less Labour | Less Cash Costs <sup>b</sup> | Less Depreciation | Less Opportunity Cost of Capital (@10%) | <b>Economic Rent</b> |
|---------|--------------|-------------|------------------------------|-------------------|---|----------------------|
| 1997/98 | 29,160       | 10,006      | 7,371                        | 2,645             | 3,741                                   | <b>5,398</b>         |
| 1998/99 | 34,572       | 11,863      | 7,112                        | 3,207             | 4,536                                   | <b>7,855</b>         |
| 1999/00 | 36,135       | 12,399      | 7,899                        | 2,847             | 4,028                                   | <b>8,962</b>         |
| 2000/01 | 45,467       | 17,272      | 7,642                        | 4,462             | 4,570                                   | <b>11,522</b>        |
| 2001/02 | 41,534       | 15,778      | 7,360                        | 4,828             | 4,946                                   | <b>8,622</b>         |
| 2002/03 | 28,219       | 10,720      | 7,254                        | 5,362             | 5,493                                   | <b>-610</b>          |
| 2003/04 | 40,389       | 15,343      | 7,548                        | 5,669             | 5,807                                   | <b>6,022</b>         |
| 2004/05 | 32,043       | 10,744      | 9,486                        | 7,267             | 6,589                                   | <b>-2,042</b>        |
| 2005/06 | 33,968       | 11,390      | 9,148                        | 6,465             | 5,862                                   | <b>1,103</b>         |

<sup>a</sup> Estimates of economic rent are for the Spencer Gulf and West Coast fisheries in aggregate.

<sup>b</sup> Excludes interest and labour costs.

Source: EconSearch analysis.

When an economic rent is generated in a fishery and there are transferable licences, the rent represents a return to the value of the licences. The aggregate value of licences for both fisheries in 2005/06 was estimated to be approximately \$179.9 million (42 licences with an average value of \$4.28 million). An annual economic rent of \$1.1 million represents a return of 0.6 per cent to the capital value of the fisheries.

## 4. Other Indicators<sup>10</sup>

### 4.1 External Factors Influencing the Economic Condition of the Fisheries

There are a number of factors in 2005/06 that have impacted on the economic performance of the Spencer Gulf and West Coast prawn fisheries. Most of these are likely to continue to affect economic outcomes in the future.

#### 4.1.1 Biological Performance Indicators

The priority of the management of the fisheries is to ensure the sustainability of prawn stocks. In order to achieve this, biological indicators have been developed with reference points used as a benchmark of performance against objectives. Reference or trigger points can be used to trigger a management response when required. The biological performance indicators for the Spencer Gulf and West Coast prawn fisheries relate to:

- catch and effort;
- catch per unit of effort (CPUE);
- exploitation;
- recruitment; and
- size.

The Spencer Gulf fishery biological performance indicators for the seasons 2002/03 to 2004/05 are summarised in Table 4.1 below.<sup>11</sup>

Table 4.1 Biological performance indicators for the Spencer Gulf prawn fishery, 2002/03 to 2004/05

| Performance Indicator          | Trigger Point   | 2002/03 | 2003/04 | 2004/05 <sup>a</sup> |
|--------------------------------|-----------------|---------|---------|----------------------|
| Catch (tonnes)                 | N/A             | 1,489   | 1,943   | 1,939                |
| Trawl Effort (hours)           | N/A             | 18,904  | 20,193  | 21,360               |
| CPUE (kg/hr)                   | N/A             | 78.8    | 96.2    | 90.8                 |
| Effort (nights)                | Greater than 85 | 71.8    | 74.5    | 80.0                 |
| Spawning Biomass               | Less than 40%   | 72.7%   | 57.5%   | -                    |
| Recruitment Index <sup>b</sup> | Less than 35    | 35.2    | 41.2    | 45.6                 |
| Size (prawns per kg)           | Greater than 40 | 27.5    | 29.8    | 29.0 <sup>c</sup>    |

<sup>a</sup> At the time of this publication data for the 2004/05 season were provisional.

<sup>b</sup> The recruitment index measures changes in the number of juvenile fish entering the fishery.

<sup>c</sup> Does not include the June fishing period.

Source: Cameron Dixon (SARDI Aquatic Sciences, pers. comm.).

<sup>10</sup> As a part of the 2005 survey, licence holders were asked to provide some general comments on the economic performance of the fishery. These comments were reported in the Economic Indicators report for 2004/05 (EconSearch 2006a)

<sup>11</sup> Biological performance indicators for the Spencer Gulf fishery for 2005/06 are not yet available.

Spencer Gulf catch in 2004/05 was similar to the previous season, however, effort increased by almost 15 per cent. As a result, catch per unit of effort (CPUE) reduced from 96.2 kg/hr in 2003/04 to 90.8 kg/hr in 2004/05. Indicators for effort, recruitment and prawn size were all within their reference limit for the 2004/05 season.

The West Coast fishery biological performance indicators for the seasons 2002/03 to 2004/05 are summarised in Table 4.2 below.<sup>12</sup>

Table 4.2 Biological performance indicators for the West Coast prawn fishery, 2002/03 to 2004/05

| Performance Indicator             | Trigger Point    | 2002/03 | 2003/04     | 2004/05 <sup>a</sup> |
|-----------------------------------|------------------|---------|-------------|----------------------|
| Catch (tonnes)                    | N/A              | 29.2    | 14.5        | 20.7                 |
| Trawl Effort (hours)              | N/A              | 717     | 368         | 423                  |
| CPUE (kg/hr)                      | N/A              | 40.7    | 39.4        | 48.9                 |
| Effort (nights)                   | Greater than 120 | 33      | 18          | 19                   |
| Spawning Biomass <sup>b</sup>     | Less than 40%    | N/A     | N/A         | N/A                  |
| Recruitment Index <sup>c</sup>    | Less than 35     | N/A     | N/A         | N/A                  |
| Size (prawns per kg) <sup>d</sup> | Greater than 40  | -       | 33.8 - 46.2 | -                    |

<sup>a</sup> At the time of this publication data for the 2004/05 season were provisional.

<sup>b</sup> Spawning biomass data were not analysed for the 2002/03 to 2004/05 seasons.

<sup>c</sup> The recruitment index measures the change in the number of juvenile fish entering the fishery. Recruitment index data were not available for the 2002/03 to 2004/05 seasons.

<sup>d</sup> Prawn size data were not analysed for the 2002/03 and 2004/05 seasons.

Source: SARDI Aquatic Sciences

West Coast catch has been extremely low in the last three seasons compared with previous years, although it did increase slightly in the 2004/05 season compared to 2003/04. Despite the increase in effort between 2003/04 and 2004/05 CPUE also increased over this period. The performance indicator for size was triggered in the 2003/04 season when the number of prawns per kilogram exceeded the reference point.

#### 4.1.2 Exchange Rates

A significant proportion of the South Australian prawn catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fisheries. 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 prawn exports. The Australian dollar remained relatively stable throughout 2005/06, ranging between US72 cents and US76 cents. This average rate is slightly lower than 2004/05 when the value of the dollar ranged from US70 cents to US79 cents. There has been incremental growth in the value of the AUD since 2000/01 when the dollar fell to around US50 cents.

<sup>12</sup> Biological performance indicators for the West Coast fishery for 2005/06 are not yet available.

The average exchange rate in 2005/06 was US74.63 cents compared to US75.45 cents in 2004/05, a decrease of 1 per cent. Other things held equal, a fall in the value of the currency would have the effect of increasing the price of prawns received by Australian exporters between 2004/05 and 2005/06.

The most significant export destination for South Australian prawn exports in 2005/06 was Japan, thus it may be useful to consider the value of the Australian dollar against the Japanese yen. The average rate of exchange in 2004/05 was 80.6JPY and 85.9JPY in 2005/06, an increase of 7 per cent.

The appreciation of the Australian dollar against the Japanese yen, would have contributed to the fall in the average beach price of GSV prawns of 7 per cent between 2004/05 and 2005/06. The Australian dollar's appreciation also means that imported prawns are cheaper for Australian consumers, putting further downward pressure on the price of Spencer Gulf and West Coast prawns in the domestic market.

### 4.1.3 Prawn Imports into Australia

There was concern among those licence holders involved in the 2005 survey regarding the quantity of prawns that are imported from overseas. Licence holders felt that the increasing quantity of imported prawns had a negative impact on the price of local product. Figures 4.1 and 4.2 provide an overview of the quantity and value of total prawn imports into Australia by country of origin, for the period 2000/01 to 2005/06.

The total quantity of prawns imported into Australia increased by 92 per cent between 2000/01 and 2004/05 from approximately 15,600 tonnes to almost 30,000 tonnes, but decreased to 23,000 tonnes in 2005/06. The value (Australian Customs Value)<sup>13</sup> of these imports increased by only 10 per cent between 2000/01 to 2004/05 from \$234 million to \$258 million, before decreasing to \$201 million in 2005/06. Over the five-year period the average nominal price of prawn imports fell by approximately 42 per cent, from \$15.00 per kg in 2000/01 to \$8.69 per kg in 2005/06.

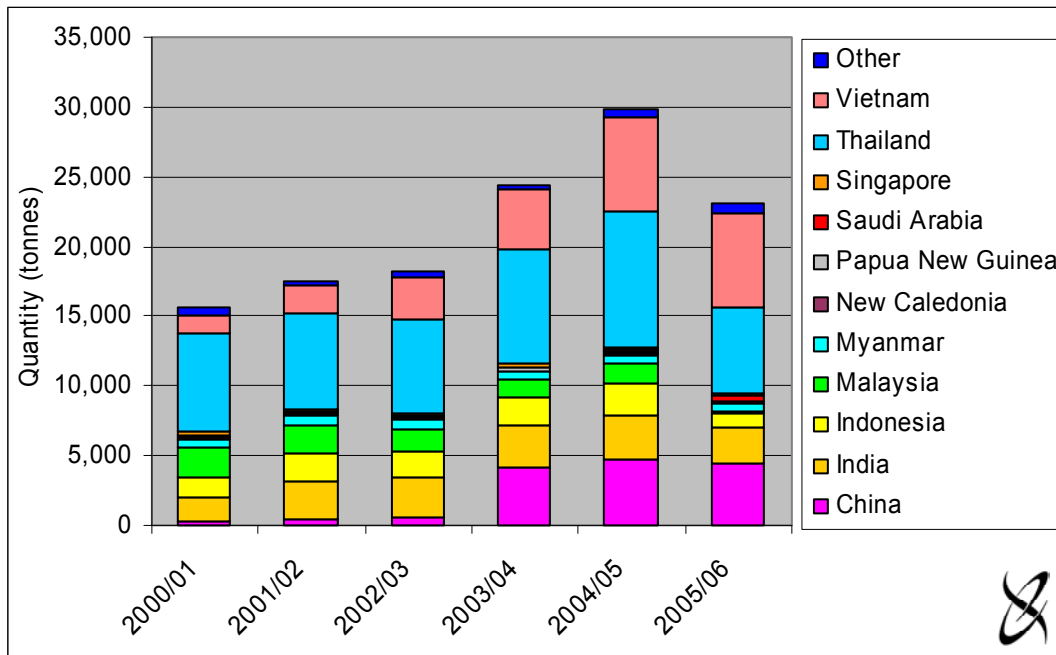
Over the period 2000/01 to 2005/06, the most significant countries of import origin were Thailand, Vietnam and India, accounting on average for 36, 18 and 12 per cent, respectively, of the total quantity of prawn imports into Australia. In 2005/06, the most significant import countries of origin by volume and value were Vietnam (30 per cent of volume, 36 per cent value), Thailand (26 per cent of volume, 23 per cent of value), China (19 per cent of volume, 15 per cent of value) and India (11 per cent of volume, 13 per cent of value) (Figures 4.1 and 4.2).

Figure 4.3 highlights the trends in prices received for prawns caught in the two South Australian prawn fisheries and for prawns imported into Australia from overseas. In order to enable comparison between years, nominal prices have been adjusted using the consumer price index (ABS 2006) to calculate real prices. Over the 6 years included in the analysis, 2000/01 to 2005/06, the real price of imported prawns decreased by 51 per cent. The real price received for prawns caught in South Australia also decreased, by 17 per cent in the Gulf St Vincent fishery and by 14 per cent in the Spencer Gulf and West Coast fisheries.

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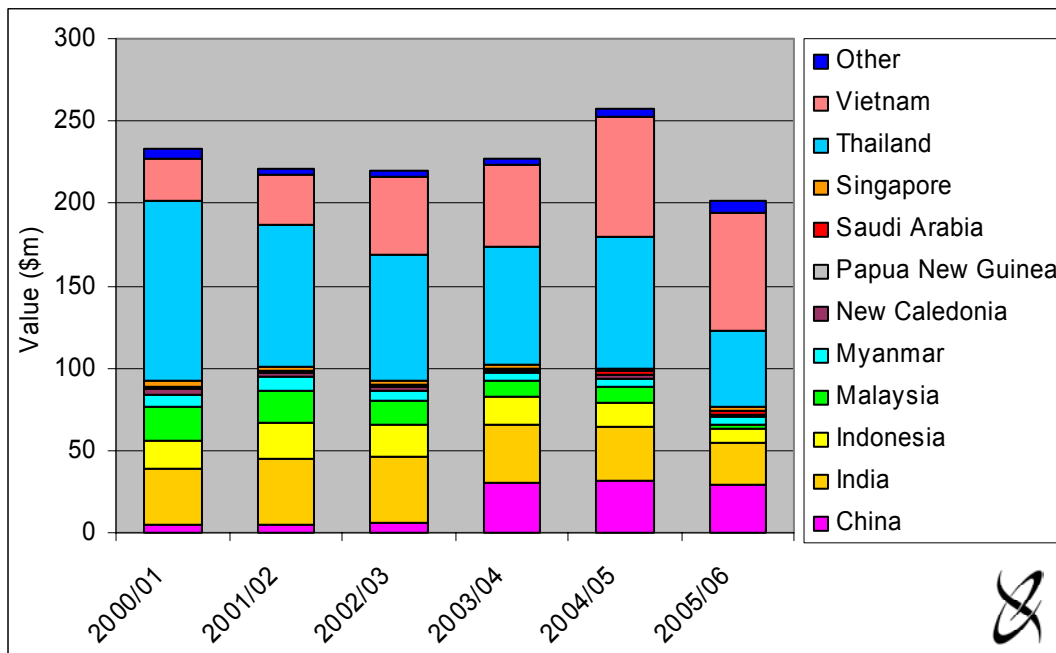
<sup>13</sup> The Australian Customs Value is the value placed on goods imported into Australia based on information advised by the importer. The Customs value is generally an estimate of the transaction value of the goods imported.

Figure 4.1 Prawn imports into Australia, quantity (t) by country of origin, 2000/01 to 2005/06



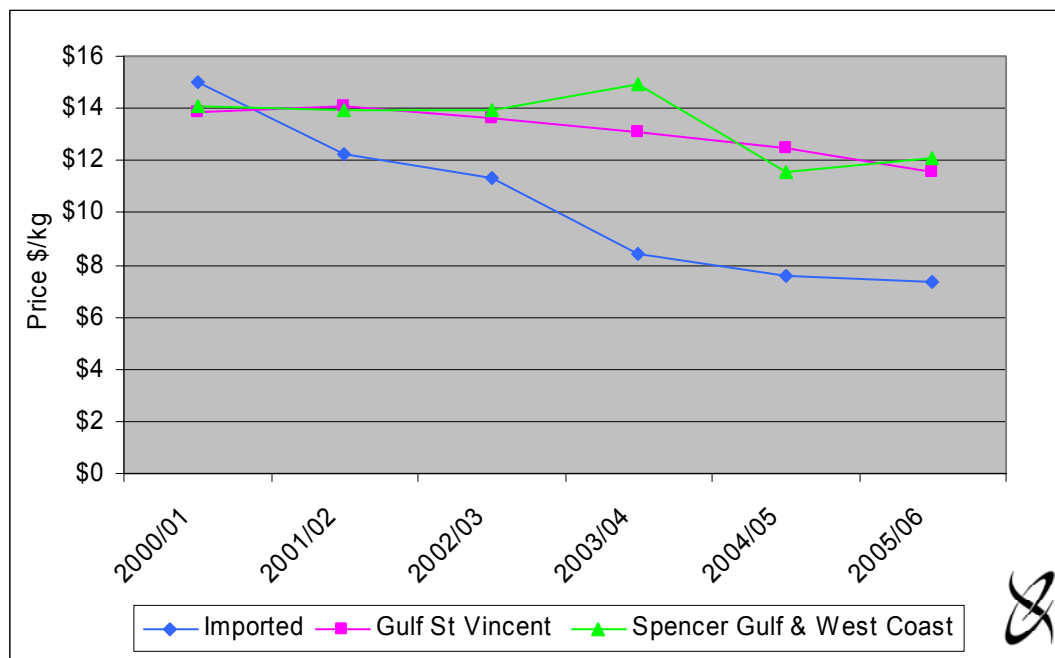
Source: Australian Bureau of Statistics (by request).

Figure 4.2 Prawn imports into Australia, value (\$m) by country of origin, 2000/01 to 2005/06



Source: Australian Bureau of Statistics (by request).

Figure 4.3 Real prices for imported and South Australian prawns, 2000/01 to 2005/06



Source: ABS (by request) and SARDI Aquatic Sciences.

## 4.2 Prawn Exports from South Australia

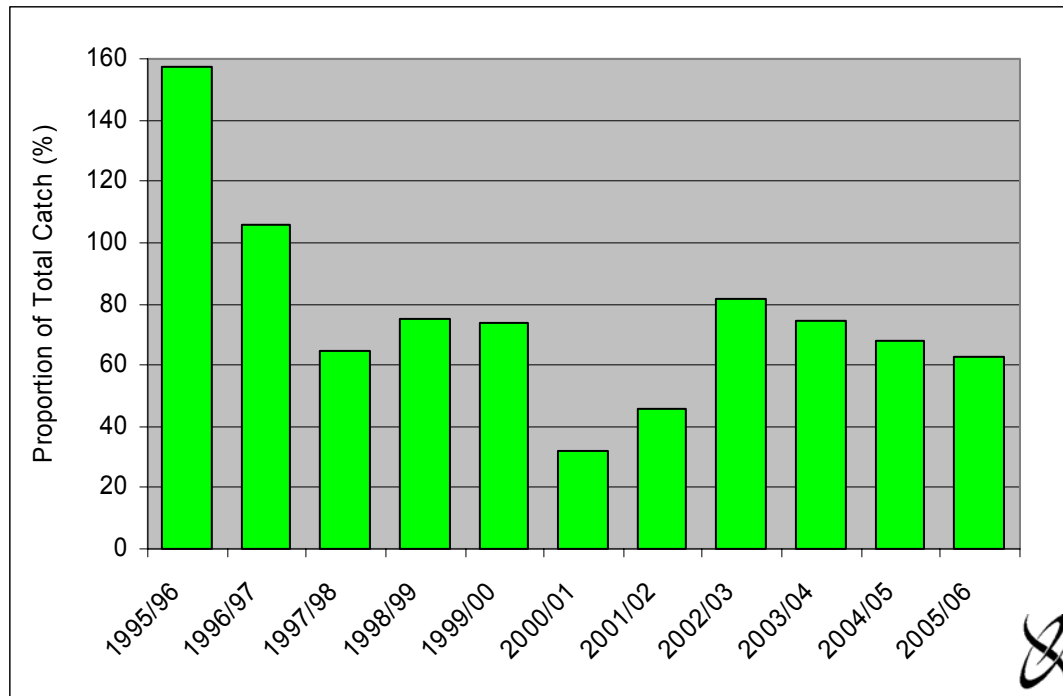
Figures 4.4 to 4.8 and the associated data in Appendix Tables 2.1 to 2.4 provide an historical breakdown of total prawn exports from South Australia<sup>14</sup>, by category and country of destination, for the period 1995/96 to 2005/06. Over this period the total quantity of prawns exported from SA decreased by 64 per cent, from 3,580 tonnes in 1995/96 to 1,287 tonnes in 2005/06 (Figures 4.5 and 4.7). The total value of these prawn exports decreased by 63 per cent in nominal terms (Figures 4.6 and 4.8). As a proportion of total prawn catch in South Australia, prawn exports from South Australia decreased from 158 per cent in 1995/96 to 63 per cent in 2005/06 (Figure 4.4).

Whole prawns (fresh, frozen, steamed or boiled) was the most important category of export in all years of the analysis, accounting for, on average, 88 per cent of total exports by quantity and 87 per cent of total exports by value over the period of analysis (Figures 4.5 and 4.6). For a full breakdown of exports by category refer to Appendix Tables 2.1 and 2.2.

<sup>14</sup> That is, exports from the Gulf St Vincent, Spencer Gulf and West Coast prawn fisheries in aggregate. These data include product that has been shipped from interstate (for processing) and then exported from South Australia. Therefore, in addition to Western King prawns caught in SA fisheries, these data could include other prawn species caught in other Australian fisheries. The data do not include product that is shipped interstate from SA and then exported from other ports.

Over the nine-year period 1995/96 to 2005/06 the most significant export destinations were Japan, Spain, Greece and China, accounting on average for 60, 10, 10 and 7 per cent, respectively, of the total quantity of prawn exports from South Australia (Figure 4.7). In 2005/06 the most significant export destinations by volume and value were Japan (54 per cent of volume, 58 per cent of value), Spain (22 per cent of volume, 20 per cent of value) and Greece (19 per cent of volume, 18 per cent of value). For a full breakdown of exports by country of destination refer to Appendix Tables 2.3 and 2.4.

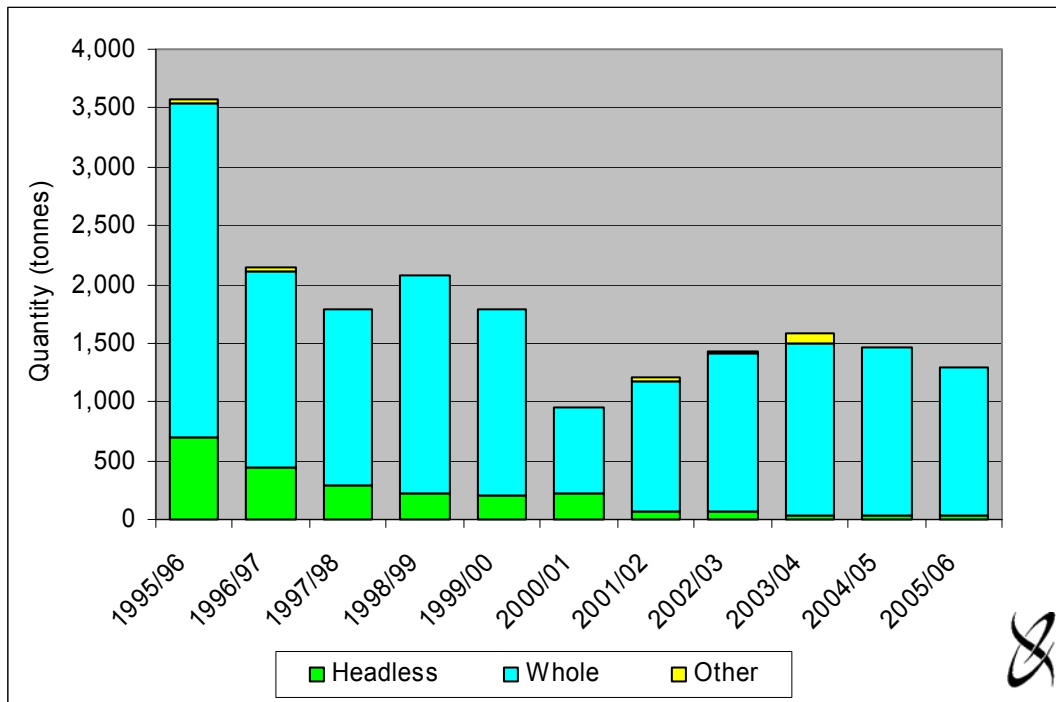
Figure 4.4 Prawn exports from South Australia as a proportion of total South Australian catch <sup>a</sup>, 1995/96 to 2005/06



<sup>a</sup> Exports from the Gulf St Vincent, Spencer Gulf and West Coast prawn fisheries in aggregate. These data could include product that has been shipped from interstate (for processing) and then exported from South Australia. Therefore, in addition to Western King prawns caught in SA fisheries, these data could include other prawn species caught in other Australian fisheries. The data do not include product that is shipped interstate from SA and then exported from other ports.

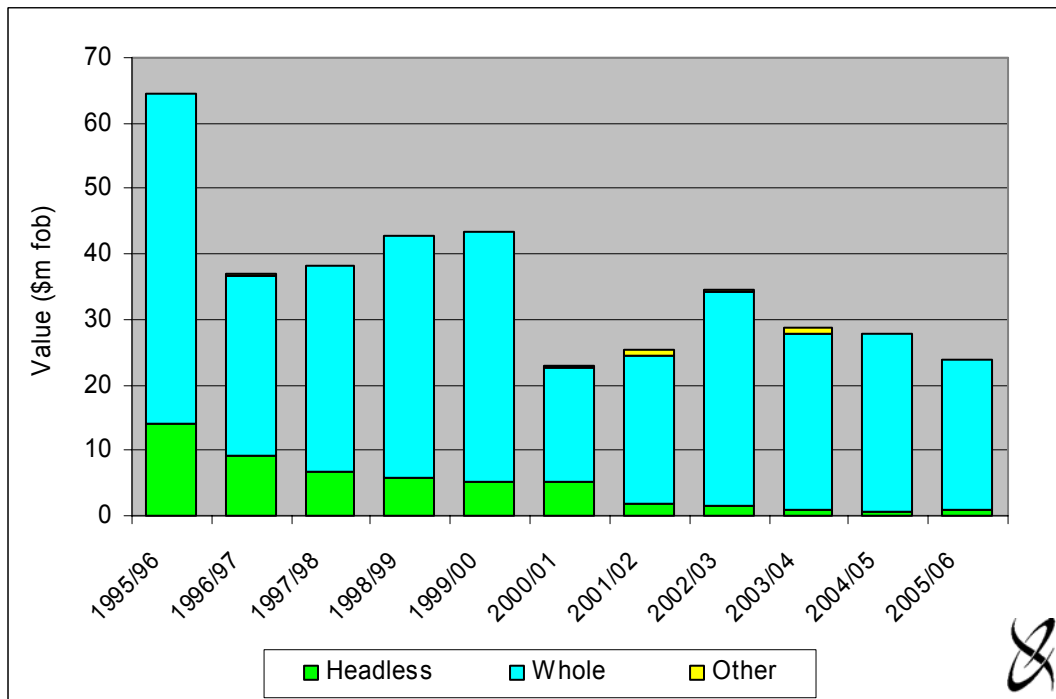
Source: Appendix Table 2.1 and Table 3.1.

Figure 4.5 Prawn exports from South Australia, quantity (t) by category, 1995/96 to 2005/06



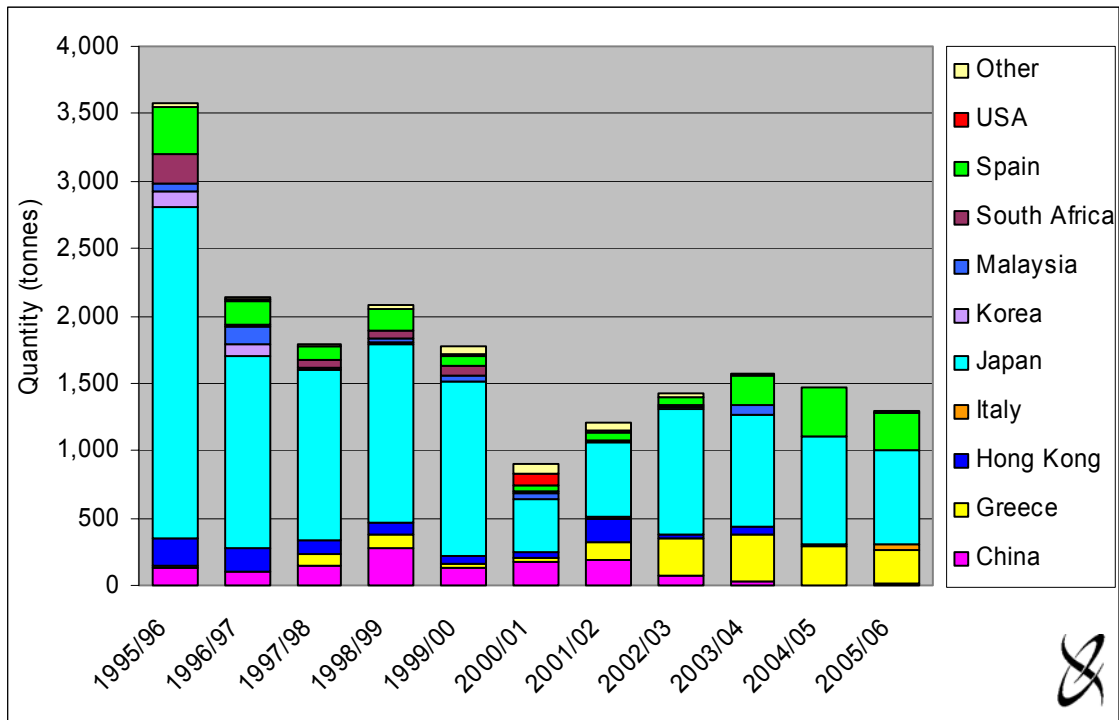
Source: Appendix Table 2.1.

Figure 4.6 Prawn exports from South Australia, value (\$m fob) by category, 1995/96 to 2005/06



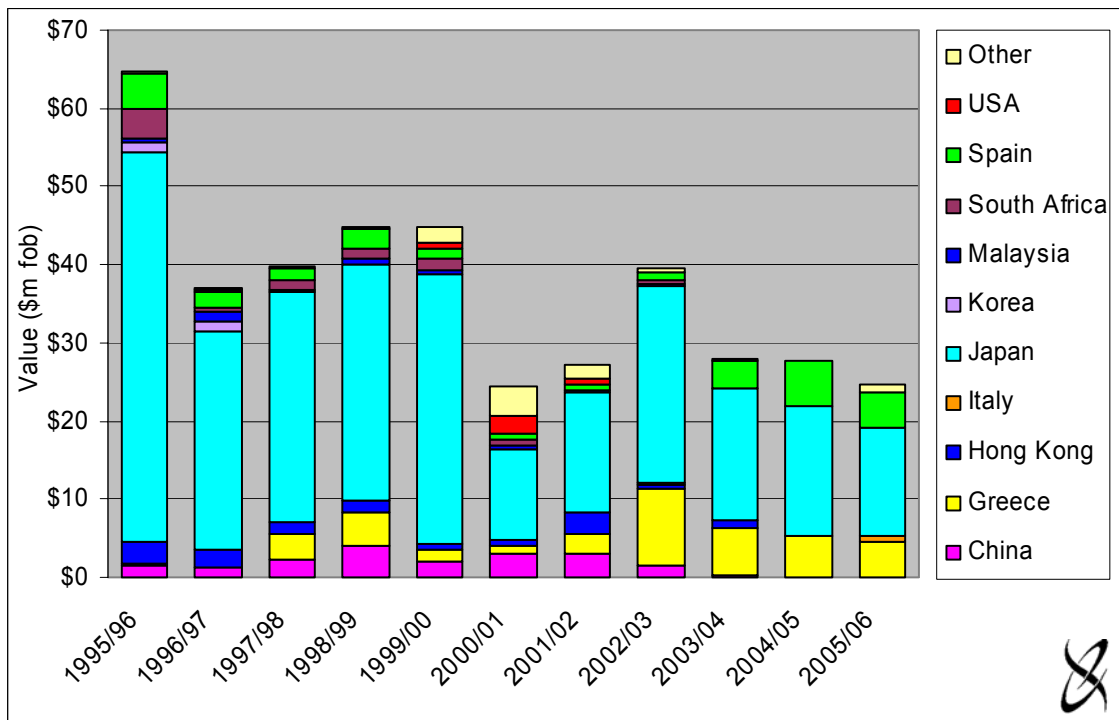
Source: Appendix Table 2.2.

Figure 4.7 Prawn exports from South Australia, quantity (t) by country of destination, 1995/96 to 2005/06



Source: Appendix Table 2.3.

Figure 4.8 Prawn exports from South Australia, value (\$m fob) by country of destination, 1995/96 to 2005/06



Source: Appendix Table 2.4.

### 4.3 Market Prices for Prawns in Domestic Markets

This section of the report provides some indication of the seasonality of prices for western king prawns in the local and other domestic markets.

#### Average monthly beach prices for western king prawns in SA

An outline of the seasonality of western king prawn prices in SA (by month) for the period 1997/98 to 2005/06 is provided in Table 4.3 and Figure 4.9. Beach prices in SA tend to peak in November and December with strong demand in the Christmas/New Year period and trough in February to May, corresponding with a period of peak supply.

Table 4.3 Average monthly beach prices for western king prawns, South Australia<sup>a</sup>, 1997/98 to 2005/06<sup>b, c</sup>

| Month                                    | Average Monthly Price (\$/kg) |         |         |         |         |         |         |         |         |
|--|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|  | 1997/98                       | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 |
| July                                     | \$11.34                       | \$13.41 | \$15.05 | \$17.82 | \$14.69 |         |         |         | \$13.70 |
| August                                   | \$11.01                       | \$12.72 | \$14.47 | \$18.18 | \$14.80 |         | \$16.82 | \$13.80 | \$14.66 |
| September                                | \$13.42                       |         |         | \$18.06 | \$15.30 |         |         |         | \$17.53 |
| October                                  |                               |         |         |         |         |         | \$16.75 | \$16.11 |         |
| November                                 | \$14.56                       | \$15.80 | \$19.95 | \$20.00 | \$18.28 | \$19.42 |         | \$21.07 | \$19.91 |
| December                                 | \$14.96                       | \$16.23 | \$20.88 | \$20.36 | \$19.42 | \$19.07 | \$22.77 | \$22.91 | \$18.43 |
| January                                  |                               |         |         |         |         |         |         | \$20.41 |         |
| February                                 | \$15.96                       | \$14.10 | \$18.61 | \$20.51 | \$15.00 |         | \$14.18 | \$14.05 |         |
| March                                    | \$12.94                       | \$14.27 | \$17.68 | \$17.77 | \$17.69 | \$18.69 | \$14.46 | \$13.04 | \$13.99 |
| April                                    | \$12.32                       | \$14.30 | \$16.85 | \$16.83 | \$17.76 | \$17.66 | \$18.54 | \$14.64 | \$16.06 |
| May                                      | \$11.49                       | \$12.55 | \$17.66 | \$16.26 | \$17.74 | \$18.45 | \$18.26 | \$15.03 | \$16.96 |
| June                                     | \$12.34                       | \$14.16 | \$18.57 | \$16.64 | \$16.03 | \$18.00 | \$10.61 | \$17.24 | \$14.28 |
| Weighted Average Price SGWC <sup>d</sup> | \$11.70                       | \$14.26 | \$17.92 | \$17.67 | \$17.99 | \$18.71 | \$20.63 | \$14.90 | \$17.97 |
| Weighted Average Price GSV <sup>e</sup>  | \$15.31                       | \$15.01 | \$19.09 | \$17.38 | \$18.23 | \$18.28 | \$18.12 | \$17.66 | \$16.43 |

<sup>a</sup> For all prawn fisheries in South Australia.

<sup>b</sup> Nominal prices.

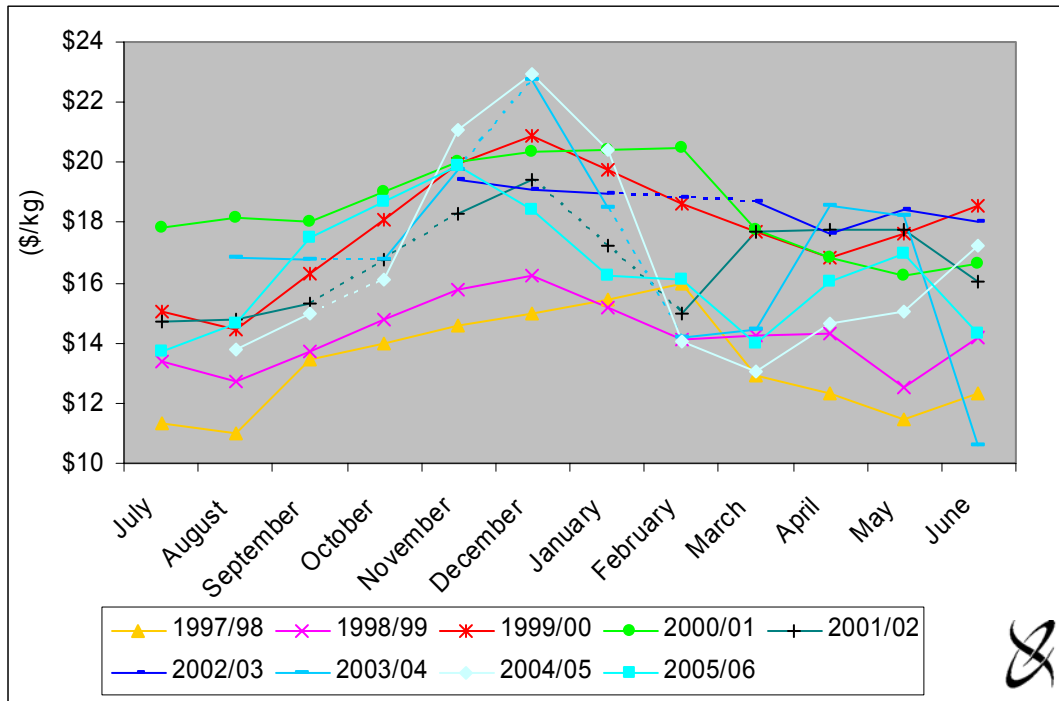
<sup>c</sup> Blank cells correspond with months in which no returns were received from processors.

<sup>d</sup> Spencer Gulf and West Coast prawn fisheries.

<sup>e</sup> Gulf St Vincent prawn fishery.

Source: SARDI Aquatic Sciences.

Figure 4.9 Average monthly beach prices for western king prawns, South Australia, 1997/98 to 2005/06 <sup>a</sup>



NB: Data within the broken lines correspond with months in which no returns were received from processors. These values have been imputed (for graphical purposes) on the basis of a simple average of the previous and subsequent months' returns.

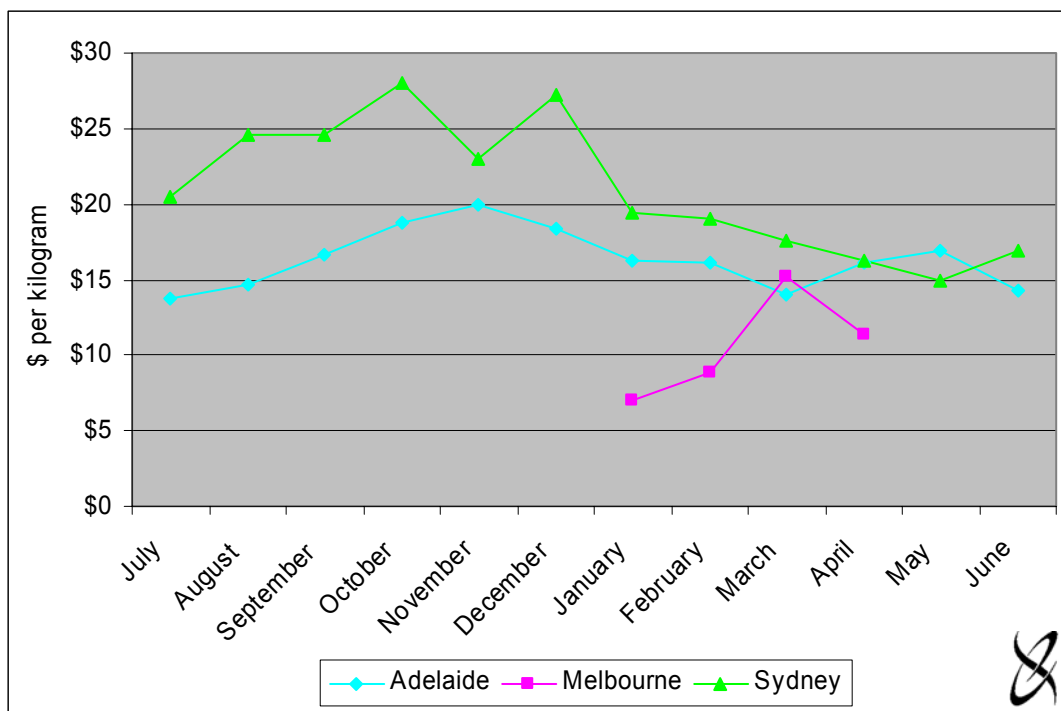
<sup>a</sup> Nominal prices.

Source: SARDI Aquatic Sciences.

### Average monthly price for western king prawns in other domestic markets

The average price of western king prawns sold in the Sydney and Melbourne fish markets are illustrated on a monthly basis (for 2005/06) in Figure 4.10. Fluctuations in price are similar to those experienced in South Australia with prices peaking in November/December and reaching a low point between February and April.

Figure 4.10 Prices for western king prawns; Sydney Fish Markets, Melbourne Fish Markets and South Australian beach prices, 2005/06



<sup>a</sup> All prices reported from Sydney and Melbourne Fish Markets are wholesale, that is, before commission is taken into account. Currently, Sydney Fish Markets charges 9 per cent commission plus an environmental levy of 0.025 per cent. Melbourne Fish Market charges 11 per cent commission. Sydney and Melbourne market prices are for product from all sources.

N.B. Data with broken lines correspond with months in which no fish were sold or prices were unavailable. These values have been imputed (for graphical purposes) on the basis of a simple average of the previous and subsequent months prices.

Source: SARDI Aquatic Sciences, Tim Rieniets (Melbourne Wholesale Fish Markets, pers. comm.) and Samantha Dawes (DPI – NSW Fisheries, pers. comm.)

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## Appendix 1 Economic Impact of the Spencer Gulf and West Coast Prawn Fisheries, 2004/05<sup>15</sup>

Appendix Table 1.1 Economic impact of the Spencer Gulf and West Coast prawn fisheries in South Australia, 2004/05<sup>a</sup>

| Sector                           | Output      |               | Employment <sup>a</sup> |               | Household Income |               | Contribution to GDP |               |
|----------------------------------|-------------|---------------|-------------------------|---------------|------------------|---------------|---------------------|---------------|
|                                  | (\$m)       | %             | (fte jobs)              | %             | (\$m)            | %             | (\$m)               | %             |
| Direct effects                   |             |               |                         |               |                  |               |                     |               |
| Fishing                          | 32.0        | 32.8%         | 217                     | 32.0%         | 10.0             | 35.7%         | 22.9                | 43.0%         |
| Processing                       | 0.7         | 0.7%          | 2                       | 0.3%          | 0.1              | 0.4%          | 0.2                 | 0.3%          |
| Transport                        | 0.7         | 0.8%          | 4                       | 0.5%          | 0.2              | 0.9%          | 0.4                 | 0.7%          |
| Retail                           | 3.5         | 3.6%          | 55                      | 8.1%          | 1.5              | 5.2%          | 1.8                 | 3.3%          |
| Food services                    | 9.8         | 10.0%         | 88                      | 13.0%         | 2.5              | 8.9%          | 3.8                 | 7.2%          |
| Capital expenditure <sup>b</sup> | 2.2         | 2.2%          | 24                      | 3.5%          | 0.7              | 2.5%          | 0.9                 | 1.7%          |
| <b>Total Direct<sup>c</sup></b>  | <b>48.9</b> | <b>47.8%</b>  | <b>391</b>              | <b>54.0%</b>  | <b>15.0</b>      | <b>51.1%</b>  | <b>29.9</b>         | <b>54.5%</b>  |
| Flow-on effects                  |             |               |                         |               |                  |               |                     |               |
| Trade                            | 7.4         | 7.6%          | 89                      | 13.0%         | 2.8              | 9.9%          | 3.5                 | 6.5%          |
| Manufacturing                    | 11.2        | 11.4%         | 38                      | 5.6%          | 1.6              | 5.8%          | 2.6                 | 4.9%          |
| Business Services                | 6.0         | 6.1%          | 38                      | 5.6%          | 2.2              | 7.8%          | 2.9                 | 5.4%          |
| Transport                        | 2.4         | 2.5%          | 12                      | 1.8%          | 0.8              | 2.8%          | 1.2                 | 2.2%          |
| Other Sectors                    | 21.9        | 22.4%         | 112                     | 16.4%         | 5.6              | 20.0%         | 13.2                | 24.9%         |
| <b>Total Flow-on<sup>c</sup></b> | <b>48.8</b> | <b>49.9%</b>  | <b>288</b>              | <b>42.4%</b>  | <b>13.0</b>      | <b>46.4%</b>  | <b>23.3</b>         | <b>43.8%</b>  |
| <b>Total<sup>c</sup></b>         | <b>97.8</b> | <b>100.0%</b> | <b>679</b>              | <b>100.0%</b> | <b>28.0</b>      | <b>100.0%</b> | <b>53.2</b>         | <b>100.0%</b> |
| Total/Direct                     | 2.0         | -             | 1.7                     | -             | 1.9              | -             | 1.8                 | -             |
| Total/Tonne                      | \$49,800    | -             | 0.35                    | -             | \$14,200         | -             | \$27,135            | -             |

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fisheries was comprised of 48 full-time jobs and 197 part-time jobs, that is, 244 jobs in aggregate.

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

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

Source: EconSearch analysis.

<sup>15</sup> 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. The economic impact of the Spencer Gulf and West Coast prawn fisheries 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 for the period 1999/00 to 2002/03.

Appendix Table 1.2 Economic impact of the Spencer Gulf and West Coast prawn fisheries in the Eyre region, 2004/05 <sup>a</sup>

| Sector                            | Output      |               | Employment <sup>a</sup> |               | Household Income |               | Contribution to GRP |               |
|-----------------------------------|-------------|---------------|-------------------------|---------------|------------------|---------------|---------------------|---------------|
|                                   | (\$m)       | %             | (fte jobs)              | %             | (\$m)            | %             | (\$m)               | %             |
| Direct effects                    |             |               |                         |               |                  |               |                     |               |
| Fishing                           | 32.0        | 65.3%         | 217                     | 60.3%         | 10.0             | 66.9%         | 22.9                | 72.5%         |
| Processing                        | 0.2         | 0.4%          | 1                       | 0.2%          | 0.0              | 0.2%          | 0.0                 | 0.2%          |
| Transport                         | 0.4         | 0.8%          | 2                       | 0.6%          | 0.1              | 0.8%          | 0.2                 | 0.6%          |
| Retail                            | 0.2         | 0.4%          | 3                       | 0.9%          | 0.1              | 0.5%          | 0.1                 | 0.3%          |
| Food services                     | 0.5         | 1.0%          | 5                       | 1.4%          | 0.1              | 0.8%          | 0.2                 | 0.6%          |
| Capital expenditure <sup>b</sup>  | 1.4         | 2.9%          | 24                      | 6.7%          | 0.6              | 3.8%          | 0.7                 | 2.3%          |
| <b>Total Direct <sup>c</sup></b>  | <b>34.7</b> | <b>67.8%</b>  | <b>253</b>              | <b>63.5%</b>  | <b>10.9</b>      | <b>69.3%</b>  | <b>24.1</b>         | <b>74.2%</b>  |
| Flow-on effects                   |             |               |                         |               |                  |               |                     |               |
| Trade                             | 3.1         | 6.2%          | 43                      | 11.8%         | 1.1              | 7.7%          | 1.5                 | 4.6%          |
| Manufacturing                     | 2.3         | 4.6%          | 11                      | 3.1%          | 0.4              | 2.8%          | 0.6                 | 2.0%          |
| Business Services                 | 1.1         | 2.3%          | 8                       | 2.3%          | 0.4              | 2.7%          | 0.5                 | 1.7%          |
| Transport                         | 0.8         | 1.5%          | 5                       | 1.3%          | 0.3              | 1.7%          | 0.4                 | 1.2%          |
| Other Sectors                     | 7.2         | 14.6%         | 41                      | 11.3%         | 1.8              | 12.0%         | 4.4                 | 14.0%         |
| <b>Total Flow-on <sup>c</sup></b> | <b>14.4</b> | <b>29.3%</b>  | <b>107</b>              | <b>29.8%</b>  | <b>4.0</b>       | <b>26.9%</b>  | <b>7.4</b>          | <b>23.6%</b>  |
| <b>Total <sup>c</sup></b>         | <b>49.0</b> | <b>100.0%</b> | <b>360</b>              | <b>100.0%</b> | <b>14.9</b>      | <b>100.0%</b> | <b>31.6</b>         | <b>100.0%</b> |
| Total/Direct                      | 1.4         | -             | 1.4                     | -             | 1.4              | -             | 1.3                 | -             |
| Total/Tonne                       | \$25,000    | -             | 0.18                    | -             | \$7,600          | -             | \$16,100            | -             |

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fisheries was comprised of 48 full-time jobs and 197 part-time jobs, that is, 244 jobs in aggregate.

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

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

Source: EconSearch analysis.

## Appendix 2 Prawn Exports from South Australia, 1995/96 to 2005/06

Appendix Table 2.1 Prawn exports from South Australia, quantity (kg) by category, 1995/96 to 2005/06

| Category           | Year      |           |           |           |           |         |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|-----------|-----------|-----------|
|                    | 1995/96   | 1996/97   | 1997/98   | 1998/99   | 1999/00   | 2000/01 | 2001/02   | 2002/03   | 2003/04   | 2004/05   | 2005/06   |
| Headless           | 691,133   | 450,771   | 291,570   | 215,962   | 202,791   | 217,877 | 76,131    | 63,059    | 39,933    | 30,211    | 36,144    |
| Whole              | 2,856,778 | 1,649,101 | 1,488,560 | 1,863,355 | 1,567,796 | 687,420 | 1,105,396 | 1,346,174 | 1,463,315 | 1,438,900 | 1,249,734 |
| Other <sup>a</sup> | 31,841    | 32,950    | 9,850     | 0         | 0         | 0       | 26,460    | 13,000    | 72,980    | 0         | 1,465     |
|                    | 3,579,752 | 2,132,822 | 1,789,980 | 2,079,317 | 1,770,587 | 905,297 | 1,207,987 | 1,422,233 | 1,576,228 | 1,469,111 | 1,287,343 |

<sup>a</sup> Other prawns includes prawn cutlets and prawn meat etc.; excluding headless and whole.

Source: Australian Bureau of Statistics (by request)

Appendix Table 2.2 Prawn exports from South Australia, value (\$'000 fob) by category, 1995/96 to 2005/06

| Category           | Year     |          |          |          |          |          |          |          |          |          |          |
|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                    | 1995/96  | 1996/97  | 1997/98  | 1998/99  | 1999/00  | 2000/01  | 2001/02  | 2002/03  | 2003/04  | 2004/05  | 2005/06  |
| Headless           | \$14,186 | \$9,220  | \$6,591  | \$5,832  | \$5,056  | \$5,301  | \$1,794  | \$1,551  | \$1,000  | \$725    | \$871    |
| Whole              | \$50,323 | \$27,432 | \$31,600 | \$36,923 | \$38,115 | \$16,590 | \$22,736 | \$32,774 | \$26,692 | \$27,071 | \$22,930 |
| Other <sup>a</sup> | \$23     | \$174    | \$4      | \$0      | \$0      | \$0      | \$810    | \$184    | \$1,116  | \$0      | \$27     |
|                    | \$64,532 | \$36,827 | \$38,195 | \$42,754 | \$43,171 | \$21,891 | \$25,340 | \$34,509 | \$28,808 | \$27,796 | \$23,827 |

<sup>a</sup> Other prawns includes prawn cutlets and prawn meat etc.; excluding headless and whole.

Source: Australian Bureau of Statistics (by request).

Appendix Table 2.3 Prawn exports from South Australia, quantity (kg) by country of destination, 1995/96 to 2005/06

| 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          |
| China                  | 132,113          | 103,600          | 146,127          | 274,383          | 128,654          | 175,258        | 187,598          | 75,696           | 25,073           | 0                | 13,295           |
| Greece                 | 12,686           | 0                | 91,641           | 106,669          | 37,250           | 34,200         | 133,980          | 266,562          | 353,753          | 293,287          | 242,095          |
| Hong Kong              | 203,455          | 179,159          | 95,057           | 88,112           | 48,291           | 39,286         | 173,492          | 31,342           | 57,240           | 5,800            | 25               |
| Japan                  | 2,463,229        | 1,414,565        | 1,264,749        | 1,316,495        | 1,302,040        | 391,217        | 560,535          | 928,331          | 829,819          | 799,259          | 698,714          |
| Korea                  | 113,189          | 94,479           | 0                | 13,000           | 0                | 0              | 75               | 1,200            | 0                | 0                | 0                |
| Malaysia               | 52,927           | 128,185          | 15,300           | 33,745           | 38,400           | 39,440         | 12,401           | 15,401           | 76,180           | 0                | 0                |
| South Africa           | 221,942          | 19,176           | 63,496           | 65,571           | 73,662           | 19,982         | 0                | 20,548           | 0                | 0                | 400              |
| Spain                  | 353,651          | 174,856          | 100,610          | 146,563          | 68,272           | 45,880         | 48,316           | 59,152           | 219,171          | 369,084          | 279,650          |
| USA                    | 0                | 6,741            | 0                | 0                | 25,561           | 84,432         | 25,773           | 4,439            | 0                | 396              | 845              |
| Other                  | 26,560           | 12,061           | 13,000           | 34,779           | 48,457           | 75,602         | 54,567           | 19,562           | 14,992           | 1,285            | 2,070            |
| <b>Total</b>           | <b>3,579,752</b> | <b>2,132,822</b> | <b>1,789,980</b> | <b>2,079,317</b> | <b>1,770,587</b> | <b>905,297</b> | <b>1,196,737</b> | <b>1,422,233</b> | <b>1,576,228</b> | <b>1,469,111</b> | <b>1,237,094</b> |

Source: Australian Bureau of Statistics (by request).

Appendix Table 2.4 Prawn exports from South Australia, value (\$'000) by country of destination, 1995/96 to 2005/06

| 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       |
| China                  | 1,474         | 1,321         | 2,271         | 4,038         | 1,931         | 3,000         | 2,956         | 1,493         | 365           | 0             | 107           |
| Greece                 | 382           | 0             | 3,293         | 4,316         | 1,638         | 941           | 2,467         | 9,771         | 5,982         | 5,215         | 4,303         |
| Hong Kong              | 2,756         | 2,276         | 1,430         | 1,403         | 763           | 879           | 2,926         | 556           | 1,015         | 132           | 1             |
| Japan                  | 49,644        | 27,902        | 29,480        | 30,217        | 34,330        | 11,569        | 15,243        | 25,280        | 16,868        | 16,605        | 13,731        |
| Korea                  | 1,321         | 1,352         | 0             | 159           | 0             | 0             | 2             | 21            | 0             | 0             | 0             |
| Malaysia               | 474           | 1,193         | 239           | 554           | 649           | 583           | 233           | 148           | 0             | 0             | 0             |
| South Africa           | 3,880         | 327           | 1,280         | 1,366         | 1,495         | 534           | 0             | 519           | 0             | 0             | 9             |
| Spain                  | 4,418         | 2,172         | 1,630         | 2,401         | 1,312         | 795           | 789           | 980           | 3,473         | 5,806         | 4,718         |
| USA                    | 0             | 160           | 0             | 0             | 801           | 2,274         | 700           | 73            | 0             | 10            | 17            |
| Other                  | 374           | 284           | 218           | 459           | 1,873         | 3,841         | 1,956         | 444           | 336           | 39            | 959           |
| <b>Total</b>           | <b>64,723</b> | <b>36,987</b> | <b>39,841</b> | <b>44,912</b> | <b>44,791</b> | <b>24,416</b> | <b>27,273</b> | <b>39,284</b> | <b>28,039</b> | <b>27,806</b> | <b>23,845</b> |

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 – 2004/05 (tonnes)

| Year    | Abalone | GSV Prawns | SG & WC Prawns | Sth'n Zone Rock Lobster | Nth'n Zone Rock Lobster | Blue Swimmer Crabs | Inland Waters <sup>a</sup> | Pilchards | Other Marine Species | Total SA Fisheries <sup>b</sup> |
|---------|---------|------------|----------------|-------------------------|-------------------------|--------------------|----------------------------|-----------|----------------------|---------------------------------|
| 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                          |

<sup>a</sup> Excludes the River fishery for the years 2003/04 and 2004/05.

<sup>b</sup> Excludes aquaculture, south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2006b)

Appendix Table 3.2 Commercial fisheries gross value of production, South Australia, 1990/91 – 2004/05 (\$m)

| Year    | Abalone | GSV Prawns | SG & WC Prawns | Sth'n Zone Rock Lobster | Nth'n Zone Rock Lobster | Blue Swimmer Crabs | Inland Waters <sup>a</sup> | Pilchards | Other Marine Species <sup>b</sup> | Total SA Fisheries <sup>c</sup> |
|---------|---------|------------|----------------|-------------------------|-------------------------|--------------------|----------------------------|-----------|-----------------------------------|---------------------------------|
| 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                           |

<sup>a</sup> 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 2004/05. Excludes the River fishery for the years 2003/04 and 2004/05.

<sup>b</sup> SARDI estimates for the years 1990/91 to 2002/03, revalued SARDI estimates for 2003/04 and 2004/05 using weighted average prices from Sydney and Melbourne fish markets and price data obtained from fishers.

<sup>c</sup> Excludes aquaculture, south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2006b).

Appendix Table 3.3 Cost of management in South Australian commercial fisheries, 2004/05

|                                | Licence Fees<br>(\$'000) | GVP<br>(\$'000) | Fees/<br>GVP<br>(%) | Catch<br>('000kg) | Fees/<br>Catch<br>(\$/kg) | Licence<br>Holders<br>(no.) | Fees/<br>Licence<br>(\$/licence) |
|--------------------------------|--------------------------|-----------------|---------------------|-------------------|---------------------------|-----------------------------|----------------------------------|
| Abalone                        | 2,335                    | 33,821          | 6.9%                | 902               | \$2.59                    | 35                          | \$66,715                         |
| GSV Prawns                     | 259                      | 3,761           | 6.9%                | 213               | \$1.22                    | 10                          | \$25,936                         |
| SG & WC Prawns                 | 763                      | 32,043          | 2.4%                | 1,960             | \$0.39                    | 42                          | \$18,158                         |
| Sth'n Zone Rock<br>Lobster     | 2,497                    | 54,397          | 4.6%                | 1,897             | \$1.32                    | 180                         | \$13,870                         |
| Nth'n Zone Rock<br>Lobster     | 1,076                    | 11,643          | 9.2%                | 446               | \$2.41                    | 69                          | \$15,600                         |
| Blue Crabs - Pots              | 206                      | 3,322           | 6.2%                | 584               | \$0.35                    | 8                           | \$25,695                         |
| Blue Crabs – Marine<br>Scale   | 49                       | 269             | 18.1%               | 47                | \$1.03                    | 14                          | \$3,479                          |
| Lakes and Coorong <sup>a</sup> | 243                      | 5,495           | 4.4%                | 2,198             | \$0.11                    | 37                          | \$6,562                          |
| Marine Scalefish               | 1,469                    | 20,878          | 7.0%                | 3,810             | \$0.39                    | 394                         | \$3,728                          |
| Pilchards                      | 991                      | 28,476          | 3.5%                | 56,952            | \$0.02                    | 14                          | \$70,783                         |
| Total SA                       | 9,887                    | 194,105         | 5.1%                | 69,010            | \$0.14                    | 803                         | \$12,312                         |

<sup>a</sup> Excludes the River fishery.

Source: EconSearch (2006b).

Appendix Table 3.4 Financial performance in South Australian commercial fisheries, 2004/05, (\$'000) (average per boat)

|                                     | Abalone        | GSV Prawns     | SG & WC Prawns | Sth'n Zone Rock Lob | Nth'n Zone Rock Lob | Blue Crabs Pot Sector <sup>a</sup> | Blue Crabs MS Sector <sup>a</sup> | Marine Scalefish <sup>b</sup> | Pilchards       | Lakes and Coorong |
|-------------------------------------|----------------|----------------|----------------|---------------------|---------------------|------------------------------------|-----------------------------------|-------------------------------|-----------------|-------------------|
| <b>Gross Income</b>                 | <b>1,015.7</b> | <b>370.2</b>   | <b>708.1</b>   | <b>314.2</b>        | <b>222.3</b>        | <b>4,164.7</b>                     | <b>248.6</b>                      | <b>55.0</b>                   | <b>2,422.1</b>  | <b>163.2</b>      |
| <b>Costs</b>                        |                |                |                |                     |                     |                                    |                                   |                               |                 |                   |
| Fuel                                | 14.4           | 35.9           | 62.4           | 18.2                | 45.4                | 607.8                              | 42.0                              | 6.4                           | 88.8            | 10.8              |
| R&M                                 | 35.9           | 20.7           | 53.5           | 16.6                | 17.5                | 538.0                              | 50.1                              | 5.9                           | 173.2           | 8.1               |
| Labour                              | 259.5          | 139.0          | 237.4          | 87.0                | 95.5                | 1,042.3                            | 84.9                              | 31.2                          | 861.4           | 66.6              |
| Licence fee                         | 65.1           | 27.1           | 20.8           | 15.8                | 19.4                | 205.6                              | 48.7                              | 4.3                           | 70.6            | 6.4               |
| Insurance                           | 6.6            | 18.3           | 19.2           | 6.2                 | 8.4                 | 62.1                               | 9.3                               | 1.8                           | 38.0            | 1.3               |
| Interest                            | 4.9            | 28.6           | 41.3           | 21.7                | 31.5                | 607.1                              | 8.5                               | 0.3                           | 33.4            | 4.4               |
| Admin & Other                       | 50.5           | 24.4           | 53.7           | 20.2                | 50.5                | 278.0                              | 26.1                              | 10.0                          | 80.1            | 24.3              |
| <b>Total Cash Costs</b>             | <b>436.8</b>   | <b>294.0</b>   | <b>488.3</b>   | <b>185.6</b>        | <b>268.3</b>        | <b>3,340.9</b>                     | <b>269.5</b>                      | <b>60.1</b>                   | <b>1,345.5</b>  | <b>122.0</b>      |
| <b>Cash Operating Surplus</b>       | <b>578.9</b>   | <b>76.1</b>    | <b>219.8</b>   | <b>128.6</b>        | <b>-46.0</b>        | <b>823.9</b>                       | <b>-21.0</b>                      | <b>-5.1</b>                   | <b>1,076.6</b>  | <b>41.2</b>       |
| <b>Depreciation</b>                 | <b>54.3</b>    | <b>154.4</b>   | <b>160.6</b>   | <b>48.0</b>         | <b>55.4</b>         | <b>337.0</b>                       | <b>48.3</b>                       | <b>8.9</b>                    | <b>146.2</b>    | <b>19.3</b>       |
| <b>Earnings Before Tax</b>          | <b>524.6</b>   | <b>-78.3</b>   | <b>59.2</b>    | <b>80.6</b>         | <b>-101.4</b>       | <b>486.8</b>                       | <b>-69.3</b>                      | <b>-14.0</b>                  | <b>930.4</b>    | <b>21.9</b>       |
| <b>EBIT<sup>c</sup></b>             | <b>529.5</b>   | <b>-49.7</b>   | <b>100.5</b>   | <b>102.3</b>        | <b>-69.9</b>        | <b>1,094.0</b>                     | <b>-60.8</b>                      | <b>-13.7</b>                  | <b>963.8</b>    | <b>26.3</b>       |
| <b>Capital</b>                      |                |                |                |                     |                     |                                    |                                   |                               |                 |                   |
| Fishing Gear & Equipment            | 272.2          | 1,142.6        | 1,455.9        | 351.8               | 431.1               | 3,373.7                            | 407.4                             | 88.2                          | 1,389.1         | 116.1             |
| Licence Value                       | 8,525.0        | 3,100.0        | 4,040.9        | 2,682.4             | 1,374.2             | 21,394.6                           | 1,180.5                           | 94.0                          | 9,123.9         | 139.0             |
| <b>Total Capital</b>                | <b>8,797.2</b> | <b>4,242.6</b> | <b>5,496.9</b> | <b>3,034.2</b>      | <b>1,805.2</b>      | <b>24,768.3</b>                    | <b>1,587.9</b>                    | <b>182.2</b>                  | <b>10,513.0</b> | <b>255.0</b>      |
| <b>Rate of Return to Gear/Equip</b> | <b>194.5%</b>  | <b>-4.3%</b>   | <b>6.9%</b>    | <b>29.1%</b>        | <b>-16.2%</b>       | <b>32.4%</b>                       | <b>-14.9%</b>                     | <b>-15.5%</b>                 | <b>69.4%</b>    | <b>22.7%</b>      |
| <b>Rate of Return to Capital</b>    | <b>6.0%</b>    | <b>-1.2%</b>   | <b>1.8%</b>    | <b>3.4%</b>         | <b>-3.9%</b>        | <b>4.4%</b>                        | <b>-3.8%</b>                      | <b>-7.5%</b>                  | <b>9.2%</b>     | <b>10.3%</b>      |

<sup>a</sup> Estimates of financial performance for the blue crab fishery have been presented on a whole of sector basis. The survey estimate of gross income for the blue crab – pot sector is higher than the SARDI estimate of \$3.32 million for 2004/05 presented in Appendix Table 2.2. The reason for the difference is likely to be that the SARDI estimate is based on Adelaide prices only, whereas licence holders are selling to the higher priced Sydney and Melbourne markets as well.

<sup>b</sup> Excludes the Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

<sup>c</sup> Earnings before interest and tax.

Source: EconSearch (2006b).

Appendix Table 3.5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2004/05

|                  | Abalone | GSV Prawns | SG & WC Prawns | Sth'n Zone Rock Lob | Nth'n Zone Rock Lob | Blue Crabs Pot Sector | Blue Crabs MS Sector | Marine Scalefish <sup>a</sup> | Pilchards | Lakes & Coorong |
|------------------|---------|------------|----------------|---------------------|---------------------|-----------------------|----------------------|-------------------------------|-----------|-----------------|
| Fuel             | 3%      | 12%        | 13%            | 10%                 | 17%                 | 18%                   | 16%                  | 11%                           | 7%        | 9%              |
| R&M              | 8%      | 7%         | 11%            | 9%                  | 7%                  | 16%                   | 19%                  | 10%                           | 13%       | 7%              |
| Labour           | 59%     | 47%        | 49%            | 47%                 | 36%                 | 31%                   | 32%                  | 52%                           | 64%       | 55%             |
| Licence fee      | 15%     | 9%         | 4%             | 8%                  | 7%                  | 6%                    | 18%                  | 7%                            | 5%        | 5%              |
| Insurance        | 2%      | 6%         | 4%             | 3%                  | 3%                  | 2%                    | 3%                   | 3%                            | 3%        | 1%              |
| Interest         | 1%      | 10%        | 8%             | 12%                 | 12%                 | 18%                   | 3%                   | 0%                            | 2%        | 4%              |
| Admin & Other    | 12%     | 8%         | 11%            | 11%                 | 19%                 | 8%                    | 10%                  | 17%                           | 6%        | 20%             |
| Total Cash Costs | 100%    | 100%       | 100%           | 100%                | 100%                | 100%                  | 100%                 | 100%                          | 100%      | 100%            |

<sup>a</sup> Excludes Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2006b).

Appendix Table 3.6 Economic impacts of South Australian commercial fisheries, 2004/05

|  | Abalone     | GSV Prawns  | SG & WC Prawns | Sth'n Zone Rock Lob | Nth'n Zone Rock Lob | Blue Crabs  | Marine Scalefish | Pilchards   | Lakes and Coorong | All Fisheries <sup>a</sup> |
|--|-------------|-------------|----------------|---------------------|---------------------|-------------|------------------|-------------|-------------------|----------------------------|
| <b>Output (\$m)</b>                      |             |             |                |                     |                     |             |                  |             |                   |                            |
| Direct                                   |             |             |                |                     |                     |             |                  |             |                   |                            |
| Fishing                                  | 33.8        | 3.8         | 32.0           | 54.4                | 11.6                | 4.4         | 20.9             | 28.5        | 5.5               | 194.9                      |
| Downstream <sup>b</sup>                  | 4.7         | 2.0         | 16.9           | 24.4                | 6.2                 | 3.1         | 11.1             | 0.8         | 5.1               | 74.3                       |
| All other sectors (indirect)             | 28.8        | 6.5         | 48.8           | 73.6                | 29.9                | 8.5         | 45.7             | 28.2        | 12.4              | 282.4                      |
| <b>Total</b>                             | <b>67.4</b> | <b>12.3</b> | <b>97.8</b>    | <b>152.4</b>        | <b>47.7</b>         | <b>16.0</b> | <b>77.7</b>      | <b>57.5</b> | <b>23.0</b>       | <b>551.6</b>               |
| Total/Direct                             | 1.7         | 2.1         | 2.0            | 1.9                 | 2.7                 | 2.1         | 2.4              | 2.0         | 2.2               | 2.0                        |
| Total/Tonne (\$)                         | \$74,600    | \$57,700    | \$49,800       | \$80,300            | \$107,000           | \$25,300    | \$20,300         | \$1,000     | \$10,400          | \$12,255                   |
| <b>Contribution to GSP (\$m)</b>         |             |             |                |                     |                     |             |                  |             |                   |                            |
| Direct                                   |             |             |                |                     |                     |             |                  |             |                   |                            |
| Fishing                                  | 27.8        | 2.4         | 22.9           | 39.8                | 2.7                 | 2.4         | 9.5              | 22.1        | 3.6               | 133.2                      |
| Downstream                               | 1.6         | 0.8         | 7.0            | 9.7                 | 2.5                 | 1.0         | 3.9              | 0.3         | 2.0               | 28.8                       |
| All other sectors (indirect)             | 14.0        | 3.2         | 23.3           | 35.5                | 14.3                | 4.0         | 21.7             | 13.6        | 5.9               | 135.5                      |
| <b>Total</b>                             | <b>43.4</b> | <b>6.4</b>  | <b>53.2</b>    | <b>84.9</b>         | <b>19.5</b>         | <b>7.4</b>  | <b>35.2</b>      | <b>36.0</b> | <b>11.5</b>       | <b>297.6</b>               |
| Total/Direct                             | 1.5         | 2.0         | 1.8            | 1.7                 | 3.8                 | 2.1         | 2.6              | 1.6         | 2.1               | 1.8                        |
| Total/Tonne (\$)                         | \$48,158    | \$30,254    | \$27,135       | \$44,700            | \$43,769            | \$11,740    | \$9,236          | \$632       | \$5,238           | \$6,611                    |
| <b>Employment (fte jobs)<sup>c</sup></b> |             |             |                |                     |                     |             |                  |             |                   |                            |
| Direct                                   |             |             |                |                     |                     |             |                  |             |                   |                            |
| Fishing                                  | 123         | 37          | 217            | 421                 | 185                 | 30          | 363              | 52          | 73                | 1,501                      |
| Downstream                               | 20          | 21          | 174            | 147                 | 41                  | 18          | 89               | 7           | 45                | 560                        |
| All other sectors (indirect)             | 168         | 37          | 288            | 425                 | 175                 | 50          | 263              | 166         | 74                | 1,647                      |
| <b>Total</b>                             | <b>313</b>  | <b>95</b>   | <b>679</b>     | <b>994</b>          | <b>400</b>          | <b>98</b>   | <b>715</b>       | <b>224</b>  | <b>192</b>        | <b>3,708</b>               |
| Total/Direct                             | 2.2         | 1.6         | 1.7            | 1.7                 | 1.8                 | 2.0         | 1.6              | 3.8         | 1.6               | 1.8                        |
| Total/Tonne                              | 0.35        | 0.45        | 0.35           | 0.52                | 0.90                | 0.15        | 0.19             | 0.00        | 0.09              | 0.08                       |
| <b>Household Income (\$m)</b>            |             |             |                |                     |                     |             |                  |             |                   |                            |
| Direct                                   |             |             |                |                     |                     |             |                  |             |                   |                            |
| Fishing                                  | 9.1         | 1.4         | 10.0           | 15.7                | 5.7                 | 1.1         | 9.5              | 12.1        | 2.5               | 67.0                       |
| Downstream                               | 1.1         | 0.6         | 5.0            | 6.7                 | 1.7                 | 0.7         | 2.9              | 0.2         | 1.4               | 20.3                       |
| All other sectors (indirect)             | 7.8         | 1.7         | 13.0           | 19.4                | 7.9                 | 2.2         | 12.1             | 7.3         | 3.3               | 74.9                       |
| <b>Total</b>                             | <b>18.0</b> | <b>3.7</b>  | <b>28.0</b>    | <b>41.8</b>         | <b>15.3</b>         | <b>4.1</b>  | <b>24.5</b>      | <b>19.6</b> | <b>7.2</b>        | <b>162.2</b>               |
| Total/Direct                             | 1.8         | 1.9         | 1.9            | 1.9                 | 2.1                 | 2.2         | 2.0              | 1.6         | 1.9               | 1.9                        |
| Total/Tonne (\$)                         | \$19,900    | \$17,600    | \$14,200       | \$22,000            | \$34,400            | \$6,400     | \$6,400          | \$300       | \$3,200           | \$3,605                    |

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

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

<sup>c</sup> Full time equivalent jobs. Direct employment in the fishing sector was comprised of 655 full-time and 1,399 part-time, that is, 2,054 jobs in total.

Source: EconSearch (2006b).

Appendix Table 3.7 Economic rent in South Australian commercial fisheries, 2004/05 (\$m)

|   | Abalone     | GSV Prawns  | SG & WC Prawns | Sth'n Zone<br>Rock Lob | Nth'n Zone<br>Rock Lob | Blue Crabs | Marine Scalefish | Pilchards  | Lakes and<br>Coorong | All Fisheries <sup>a</sup> |
|---|-------------|-------------|----------------|------------------------|------------------------|------------|------------------|------------|----------------------|----------------------------|
| Gross Income                            | 35.5        | 3.8         | 32.0           | 54.4                   | 11.6                   | 4.4        | 20.9             | 28.5       | 5.5                  | 196.7                      |
| Less Labour                             | 9.1         | 1.4         | 10.7           | 15.1                   | 5.0                    | 1.1        | 11.9             | 10.1       | 2.2                  | 66.6                       |
| Less Materials & Services               | 6.0         | 1.3         | 9.5            | 13.3                   | 7.4                    | 1.9        | 10.9             | 5.3        | 1.7                  | 57.2                       |
| Less Depreciation                       | 1.9         | 1.6         | 7.3            | 8.3                    | 2.9                    | 0.4        | 3.4              | 1.7        | 0.6                  | 28.1                       |
| Less Opportunity Cost of Capital (@10%) | 1.0         | 1.2         | 6.6            | 6.1                    | 2.3                    | 0.4        | 3.4              | 1.6        | 0.4                  | 22.8                       |
| <b>Economic Rent</b>                    | <b>17.6</b> | <b>-1.7</b> | <b>-2.0</b>    | <b>11.6</b>            | <b>-5.9</b>            | <b>0.7</b> | <b>-8.5</b>      | <b>9.7</b> | <b>0.5</b>           | <b>21.9</b>                |

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

Source: EconSearch (2006b).

## Appendix 4 Financial Performance, 1997/98 to 2000/01

Appendix Table 4.1 Financial performance in the SA Spencer Gulf and West Coast prawn fisheries, 1997/98 to 2000/01 (average per boat)<sup>a,b</sup>

|   | 1997/98            |              | 1998/99            |              | 1999/00            |              | 2000/01            |              |
|---|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|
|   | All Boats          | Share of TCC | All Boats          | Share of TCC | All Boats          | Share of TCC | All Boats          | Share of TCC |
| <b>Gross Income</b>                               | <b>\$701,111</b>   |              | <b>\$823,143</b>   |              | <b>\$860,357</b>   |              | <b>\$1,004,727</b> |              |
| <b>Costs</b>                                      |                    |              |                    |              |                    |              |                    |              |
| Fuel  | \$40,667           | 9%           | \$37,282           | 8%           | \$55,412           | 11%          | \$51,494           | 9%           |
| R&M   | \$58,778           | 13%          | \$58,003           | 12%          | \$58,905           | 12%          | \$45,286           | 8%           |
| Provisions  | \$9,916            | 2%           | \$9,785            | 2%           | \$9,937            | 2%           | \$6,148            | 1%           |
| Labour  | \$240,569          | 54%          | \$282,441          | 60%          | \$295,210          | 58%          | \$381,669          | 68%          |
| Licence fee                                       | \$19,785           | 4%           | \$15,534           | 3%           | \$13,867           | 3%           | \$15,093           | 3%           |
| Insurance   | \$13,988           | 3%           | \$14,172           | 3%           | \$14,528           | 3%           | \$11,138           | 2%           |
| Interest  | \$24,211           | 5%           | \$22,348           | 5%           | \$22,911           | 5%           | \$14,600           | 3%           |
| Admin and Other                                   | \$34,100           | 8%           | \$34,548           | 7%           | \$35,418           | 7%           | \$39,711           | 7%           |
| <b>Total Cash Costs</b>                           | <b>\$442,011</b>   | <b>100%</b>  | <b>\$474,113</b>   | <b>100%</b>  | <b>\$506,188</b>   | <b>100%</b>  | <b>\$565,139</b>   | <b>100%</b>  |
| <b>Cash Operating Surplus</b>                     | <b>\$259,100</b>   |              | <b>\$349,030</b>   |              | <b>\$354,169</b>   |              | <b>\$439,589</b>   |              |
| <b>Depreciation</b>                               | <b>\$63,586</b>    |              | <b>\$76,353</b>    |              | <b>\$67,793</b>    |              | <b>\$98,591</b>    |              |
| <b>Earnings Before Tax</b>                        | <b>\$195,514</b>   |              | <b>\$272,676</b>   |              | <b>\$286,376</b>   |              | <b>\$340,997</b>   |              |
| <b>Earnings Before Interest &amp; Tax</b>         | <b>\$219,724</b>   |              | <b>\$295,025</b>   |              | <b>\$309,286</b>   |              | <b>\$355,598</b>   |              |
| <b>Capital</b>                                    |                    |              |                    |              |                    |              |                    |              |
| Fishing Gear & Equipment                          | \$899,472          |              | \$1,080,070        |              | \$958,982          |              | \$1,009,955        |              |
| Licence Value                                     | \$1,727,778        |              | \$2,319,895        |              | \$2,432,040        |              | \$3,936,364        |              |
| <b>Total Capital</b>                              | <b>\$2,627,250</b> |              | <b>\$3,399,965</b> |              | <b>\$3,391,021</b> |              | <b>\$4,946,318</b> |              |
| <b>Rate of Return to Fishing Gear &amp; Equip</b> | <b>24.4%</b>       |              | <b>27.3%</b>       |              | <b>32.3%</b>       |              | <b>35.2%</b>       |              |
| <b>Rate of Return to Total Capital</b>            | <b>8.4%</b>        |              | <b>8.7%</b>        |              | <b>9.1%</b>        |              | <b>7.2%</b>        |              |

<sup>a</sup> Financial performance estimates for 1997/98 to 1999/00 were based on the October 1998 survey of licence holders. Financial performance estimates for 2000/01 are based on the February 2002 survey of licence holders.

<sup>b</sup> Estimates of financial performance are for the Spencer Gulf and West Coast fisheries in aggregate.

Source: EconSearch analysis.