

## **CPUE data screening, selection and standardisation for stock assessment of southern rock lobster (*Jasus edwardsii*) in Victoria**

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### **Abstract**

In Victoria, southern rock lobster (*Jasus edwardsii*) (SRL) catch and effort data are managed and processed through a series of electronic systems designed to provide facilitate data entry, secure archive, verification, validation, summary and analysis. For determining total catch, nominal (as reported) fishing effort, nominal catch per unit effort (CPUE), and mean mass of SRL, the systems use all the available data. For determining 'standardised CPUE' as an input to stock assessment, the data are processed through an additional system referred to as 'CPUE data screening, selection and standardisation'. Standardisation of CPUE over the 33-year period of fishing years from 1978–79 to 2010–11 was undertaken using data from 'vessel-fishers' (concatenation of vessel and fisher) contributing data in more than any two fishing years with a minimum of 200 records and more than 15 lobster pots lifted on a particular day targeting SRLs. Statistical modelling of CPUE standardised for the main effects of fishing year, fishing month, region (grouped area grid-cells), depth category, and 'vessel-fisher' and for their second order interactions (excluding those with vessel-fisher). A comprehensive statistical model selection procedure indicated that a generalised linear model (GLM) with the gamma probability density function (pdf) (with log link) (for non-zero CPUE values) paired with the binomial pdf (with logit link) (for inclusion of zero CPUE values) best fits the available CPUE data. An alternative pdf in GLM, which equally well fits the CPUE data, is the Tweedie pdf. The Tweedie pdf can uniformly handle large proportions of zeros in the data and eliminates the need for splitting the data into zero and non-zero parts. Standardised CPUE trends for the period from 1978–79 to 2010–11 exhibits more marked depletion than unstandardised CPUE trends for Victoria as a whole, for each of the two management zones, and for each of six regions.

### **Introduction**

Catch per unit effort (CPUE) values calculated from catch and fishing effort data submitted on routine mandatory logbook returns by fishing licence holders are used as an indicator of relative abundance for stock assessment of southern rock lobster (*Jasus edwardsii*) and giant crab (*Pseudocarcinus gigas*) in Victoria. Victorian stock assessments up to and including 2011 depended on 'nominal' CPUE as the index of abundance for each year (or for part of the year) by dividing total catch by total fishing effort. As in many fisheries, several features of southern rock lobster pot fishing complicate interpretation of CPUE and potentially bias CPUE as an indicator of abundance over short and long periods:

1. targeting between southern rock lobster (SRL) and giant crab (GC) and differences in fishing practice required between the species;
2. differences among fishers in their levels of fishing skill, experience, and aspirations;
3. differences among fishing vessels in capacity to move between fishing sites, to locate fishing sites with navigational aids available, and to operate under varying conditions;
4. differences among fishing vessels in the number of pots carried (licensed) and the capacity to deploy those pots most effectively;

5. progressive adoption of new technology to increase fishing power of vessels; and
6. fluctuations and trends in market demand for SRL and GC, and economic profitability of the fishery.

Adjustment for some of these effects can be made through the process known as 'CPUE standardisation' by application of generalised linear models (GLM), generalised additive modelling (GAM), and generalised linear mixed models (GLMM) (Quinn and Deriso 1999; Quinn and Keough 2002). The practice of standardisation of rock lobster pot fishing CPUE is limited (Maunder 2001; Starr and Bentley 2005), but it is shown that CPUE standardisation improves the application of CPUE as an index of abundance for the Torres Strait rock lobster (*Panulirus ornatus*) fishery in northern Australia (Ye and Dennis 2009).

Most experience with CPUE standardisation is for populations of harvested scalefish, shark and invertebrate species for fishing methods other than pot fishing. Most published examples are for demersal otter trawl (Chatterton 1996; Goñi *et al.* 1999; Kulka *et al.* 1996; Salthaug and Godø 2001; Walker and Gason 2007; Walker *et al.* 2007). Other examples include beam trawl (Large 1992), gillnet (Punt *et al.* 2000), longline (Bradford 2001; Fonteneau and Richard 2003; Goodyear 2003; Hinton and Nakano 1996; Kimura 1981; Nakano 1997), and purse seine (CPUE associated with spotter planes) (Lo *et al.* 1992).

The approach of the present study was to fit and to test different probability density functions (pdfs) of the family of exponential dispersion models (normal, gamma, Poisson, Inverse Gaussian and Tweedie) with a log link function (McCullagh and Nelder 1983) to the CPUE data by generalised linear modelling. Models applying a log link function with normal (Kimura 1981; Large 1992), gamma (Goñi *et al.* 1999; Punt *et al.* 2000) and inverse Gaussian pdfs cannot handle zero CPUE values whereas Poisson and Tweedie pdf can handle zero CPUE values.

In many studies zero CPUE values are ignored or adjusted by the addition of a small constant (Bradford 2001; Punt *et al.* 2000). These practices are avoided in the present study because the magnitude of the added constant affects standardised CPUE trends (Shono 2008). Another approach sometimes taken to reduce the proportion of zero CPUE values is to aggregate catch over larger units of fishing effort (Punt *et al.* 2000) from say a single pot to a larger unit such as all pots set during each month. This approach can reduce the standard errors on point estimates and reduce noise if the standardised CPUE trends are inputs to stochastic fishery assessment models, but this reduces resolution of the data.

The approach of the present study is to work with the data at the resolution collected and to explore the variability in the data at that resolution rather than bulk the records of data over more than one day to avoid zero CPUE values. Although only less than 1 per cent of the records in the present study produce zero CPUE values, the approach explores the two methods of including zero CPUE values in statistical modelling.

CPUE standardisation in the present study is designed to provide a standardised CPUE value for each fishing month for the 33-year period of fishing years from 1978–79 to 2010–11 in each of several sub-regions in each of the Western Zone (WZ) and Eastern Zone (EZ) (Figure 1) established as management zones in the Victorian Rock Lobster Fishery. The temporal and spatial resolution for standardisation follows the resolution available for a progressively improved SRL stock assessment model (RockSAM) developed in a common framework for application in Victoria (Hobday and Punt 2009; Hobday *et al.* 2005; Hobday and Punt 2007), South Australia (Linnane and Crosthwaite 2009), and Tasmania (Punt *et al.* 1997). Factors included in CPUE standardisation include fishing year (November–September), fishing month, region (composite of area grid-cells), depth range, and 'vessel-fisher' (rather than vessel or fisher). Eventually, these model formulations will be extended to include environmental variables such as bottom water temperature (Su *et al.* 2008a; Su *et al.* 2008b), river flows, and indices related the Bonney Upwelling and Southern Oscillation and astronomical cycles such as moon phase and magnetic activity in response to solar emissions.

## Methods and Results

Preparation and application of appropriate CPUE data for CPUE standardisation required developing a four-step data management and processing system (data preparation, data screening, data selection, and CPUE standardisation). 'Data preparation' (Step 1) involved receiving the data from licence holders, followed by data entry, verification, validation, correction, and archive with necessary additional data management fields to enable rapid extraction, summarisation and evaluation of data. 'Data screening' (Step 2) involved rejecting records with irrational data, missing information, small number of potlifts, or catch and effort averaged over more than two days. 'Data selection' (Step 3) involved selecting vessel-fishers with sufficient participation in the fishery to contribute information on spatial and temporal variation in CPUE by establishing and applying criteria based on contributing data during a minimum number of separate fishing years and on contributing a minimum of number of data records. 'CPUE standardisation' (Step 4) involved formulation of an appropriate model and determination of the pdf to best represent the error structure in the CPUE data. The four-step data management and processing system automatically generates the tables and figures presented in the present report, which not only provided the results of CPUE standardisation, but also provided the necessary 'data evaluation' required for development the system. As part of data evaluation, the system reports various data summaries, the number (and percentage) of records with complete and missing fields, and compares trends among four categories of CPUE data: 'non-screened, non-selected and unstandardised', 'screened, non-selected and unstandardised', 'screened, selected and unstandardised', and 'screened, selected and standardised'. The system prepares 'screened, selected and standardised' CPUE data and 'unscreened and unselected' catch data for (1) annual fishery stock assessment model, (2) ad hoc regression analyses exploring effects of environmental variables on screened and 'screened and selected' CPUE, and (3) ad hoc application of depletion models (DeLury 1947; Leslie and Davis 1939) to explore seasonal depletion patterns (Figure 2).

### *Data preparation*

Commercial catch and effort data for the Victorian Rock Lobster Fishery and Victorian Giant Crab Fishery collected during June 1978–September 2011 underwent data entry, verification and stage 1 data validation checks in the Victorian State Catch and Effort System (CandE) (Figure 2). Data verification ensured correct entry of information from licence holders on signed mandatory forms, either through double entry where the differences between data entered were computer flagged or through visual inspection and then corrected. Data validation undertaken as part of computer pre-processing checked that the mandatory forms were complete and from current licence holders and registered vessels, and flagged those data values in selected fields or ratios from pairs of fields falling outside pre-set ranges. By querying the licence holders, where practical and appropriate, the data were corrected. Data archive required additional data management fields to enable rapid extraction and summarisation of data.

These data then underwent stage 2 validation in a system using the statistical and data management package SAS (version 9.1) (SAS Institute, Cary, North Carolina, USA) to produce a single SAS data file (RLCandE) in preparation for further data processing. Updating data in CandE and RLCandE are ongoing and iterative processes and the associated systems for process the data have progressively improved over many years.

In CandE and RLCandE, each record with all associated fields relates to a single haul (lift) of all the lobster pots on a particular day, where a small proportion of the pots are hauled more than once a day or after two or more days. An important feature of RLCandE is that it contains added data fields on each record allowing for data corrections and labelling of records. Most relevant to the present project are estimated corrections for missing potlifts and for catch in kilograms from number of SRLs.

The new four-step data management and processing system creates the SAS data file RLCandEWork from RLCandE with added data management fields for classifying and counting records and several other variables (Table 1). An example of a new created variable is fishing year, which begins 1 or 15

November of one calendar year and ends 16 or 30 September of the following calendar year depending on legislation. File RLCandEWork1, created from RLCandEWork, provides corrections 'vessel distinguishing mark' and 'fisher identity' and creates a variable identifying 'vessel-fisher' by concatenating 'vessel distinguishing mark' and 'fisher identity'.

### *Data screening*

SAS data file RLCandECull provides for initial data screening and deletes records with missing key fields, bogus data, irrational data, and data repeated over three or more lifts of the pots based on averaged catch and averaged effort over those lifts. RLCandECull is the initial file, used by the suite of SAS procedures for sub-setting the data for subsequent analysis.

A total of 535,556 records from Victorian SRL and GC pot fishing commercial catch and effort logbook returns extracted from RLCandE were available for the 33-year period of fishing years from 1978–79 to 2010–11. Of these records, 50,186 (9.37%) (Table 2) were rejected through 10 steps of data screening for exclusion from CPUE standardisation for several reasons:

- irrational data such as catch exceeding 550 kg for a lift of all pots from 15 fishers (selected with all records for 4 fishers rejected) (rejected as gross errors or bogus data),
- returns submitted for closed month of October,
- vessel distinguishing mark, grid cell, depth of fishing, or number of potlifts not reported (rejected as missing data),
- catch, effort and hence computed CPUE repeated for 3 or more days (rejected because CPUE values are averages which reduce variance in CPUE and hence potentially affect the error structure of the data), and
- less than 15 pots hauled (rejected because the proportion of zero CPUE values and CPUE mean and variance are much higher when less than 15 pots are hauled compared with when more pots are hauled) (Table 3).

Screened records were evaluated for completeness on the basis of the number of records with completed combinations of SRL catch mass, SRL catch number, GC catch mass, potlift number, and other units of fishing effort (Table 4) and the quantities retained for various data selection criteria (Table 5). The screened data included 667 separate fishers and 820 separate vessels engaged in the fishery across the WZ and EZ during the 33-year period and from this information 1480 'vessel-fishers' could be computed (Table 5). Vessel-fisher is expected to be a better unit for standardisation of CPUE than either 'fisher' or 'vessel' alone, because fishing power of a 'vessel-fisher' depends on both the attributes of the fisher (e.g. skill, persistence, targeting practice) and the attributes of the vessel (e.g. size, fishing and handling gear, and navigational aids). Screened records from 1480 vessel-fishers indicate (a) negligible zero CPUE values, (b) a CPUE mode at 0.25–0.49 kg/potlift, (c) long right-skew with high CPUE values for a small proportion of the potlifts (Figure 3a), and vessel-fishers take a mean annual catch of <2 t, with a negligible number taking >10 t (Figure 3b).

Participation by the vessel-fishers in the fishery measured as fishing effort (potlifts, days or years) varied markedly from a single day to 31 years of fishing (followed by 30, 25 and 24 years). Those vessel-fishers of low participation, including undetected errors in identity of fisher or vessel, provide little or no information on inter-annual, monthly or spatial trends, but do contribute to variation and noise in the CPUE data. Given the skill level of a fisher increases with experience, there is an argument for excluding any fisher or vessel-fisher from the analyses if the participation is less than a prescribed number of fishing days or years in the fishery. This has the benefit of reducing the number of vessel-fishers, without markedly reducing the number of records retained for analysis.

### *Vessel-fisher data-contribution selection*

Across the WZ and EZ combined, adopting a '>2-year data-contribution' selection-criterion (i.e. records contributed in any of more than two separate fishing years) markedly reduced the number of

vessel-fishers from 1480 to 563 (retain only 38.0%), while reducing the number of records from 485,370 to 427,154 to retain 88.0% of records (Table 4 and 5; Figure 4). Applying selection criteria with longer periods of participation was avoided because it caused proportionally higher reductions in retained records; e.g., a '>5-year data-contribution' selection-criterion reduces the number of vessel-fishers from 1480 to 245 (retain only 16.6%), while reducing the number of records from 485,370 to 314,457 to retain 64.8% of records

### *Data evaluation*

Important trends are evident spatially from summary of records for the >2-year data-contribution selection-criterion applied to vessel-fishers. Area grid-cell summaries show progressive declines from west to east across Victoria in mean annual fishing effort (Figure 5a), mean annual catch (Figure 5b), and mean annual number of records (Figure 5c). Summary of data by 20-m depth-intervals show an initial increase from the 0–19-m depth-interval to peak in the 20–39-m depth-interval and then progressively decline into deeper water across Victoria in mean annual fishing effort (Figure 6a), mean annual catch (Figure 6b), and mean annual number of records (Figure 6c).

Patterns of progressively higher CPUE with increasing depth throughout the 33-year period from 1978–79 to 2010–11 are evident for 20-m (Figure 7a), 40-m (Figure 7b), and 50-m (Figure 7c) depth-intervals. The degree of depletion over the 33-year period tends to be greatest at the middle depths. For 50-m depth-interval, for example, CPUE depletion is to 60% in the <50 m depth-interval, to 40% in the 50–99 m depth-interval, and to 50% in the ≥50 m depth-interval (Figure 7c).

Nominal fishing effort (Figure 8a) and SRL catch mass (Figure 8b) are less in the ≥40 m depth-interval than in the <40 m depth-interval. Both fishing effort and catch increased during the 1990s and then decreased during the 2000s, both inside and outside 40 m. Over the 33-year period, fishing effort outside 40 m has been about half that inside 40 m, whereas the catches have been generally similar.

Marked seasonal trends are also evident from summary of SRL targeted records for data-selection criterion of ≥2 years participation in the fishery by vessel-fishers show marked declines in CPUE from summer to autumn and from autumn to winter (Figure 9). Trends in CPUE from 1978–79 to 2010–11 are more widely spaced between the seasons for the Western Zone than the Eastern Zone. In the Eastern zone, the CPUE for autumn and winter are very similar after 1998–99.

Applying the >2-year data-contribution selection-criterion alone is inadequate because a large number fisher-vessel with few records are selected; at extreme a vessel operating for one day in each of two fishing years would be selected. Hence, in each zone separately, for a vessel to be selected, it must meet the >2-year data-contribution selection-criterion and contribute a minimum of 200 screened records. For standardisation of CPUE across WZ and EZ combined, however, the criteria are applied across the two zones combined.

Applying the >2-years data-contribution and ≥200 screened records minimum selection criteria across the two zones combined selected 472 vessel-fishers. This retained 31.9% of the 1480 vessel-fishers with screened records, and retained 77.8 of non-screened records and 85.8% of screened records (Tables 5 and 6). Applying these selection criteria to WZ selected 320 vessel-fishers and to the EZ selected 155 vessel-fishers. In WZ, this retained 21.6% of the 1480 vessel-fishers with screened records, and retained 54.8% of non-screened records, 60.5% of screened records, and 85.3% of the screened records for WZ. In EZ, this retained 10.5% of the 1480 vessel-fishers with screened records, and retained 22.3% of non-screened records, 24.6% of screened records, and 84.6% of the screened records for EZ (Tables 5 and 6).

Comparison of trends in CPUE for both mean CPUE values (average CPUE from daily lifts of the pots of all vessel-fisher) and ratio CPUE values (total catch divided by total fishing effort) for WZ and EZ (Figure 10) indicate negligible differences among trends for the three groups of data of non-screened and non-selected, screened and non-selected, and screened and selected. This demonstrates that in preparation of data for CPUE standardisation, data screening and data selection did not create a bias affecting standardisation.

### *Cpue standardisation*

Standardisation of SRL CPUE data was undertaken using screened data and selected data. Screened data exclude records with irrational or missing data, averaged catch and effort, effort not targeted at SRL or both SRL and GC, or less than 15 lobster pots deployed for a single operation. Selected data include data from vessel-fishers contributing data during >2 fishing years and contribute a total of ≥200 records. Two methods were explored for CPUE standardisation.

The first method applied the “delta-type two-step method” (Lo *et al.* 1992; Punt *et al.* 2000; Vignaux 1994; Walker and Gason 2007; Walker *et al.* 2007), which combines any one of the four pdfs (normal, gamma, Poisson, and inverse Gaussian) log linked paired with the binomial pdf logit linked. For each of these pdf, the values of CPUE > 0 were fitted to the model and, for the binomial pdf, each CPUE=0 was assigned a value of 0 and each CPUE>0 was assigned a value of 1. In this delta-X model formulation, the standardised mean for a particular variable was calculated by multiplying together the corresponding binomial proportion and the mean determined by each of the two component pdfs. The method was applied using the SAS generalised linear modelling procedure (‘Proc GENMOD’), which can be readily applied on available computers. When applying the binomial pdf to the 0 and 1 values, it was necessary to remove the vessel-fish variable from the model to enable the model to converge for each of all Victoria, the two zones, and six regions, and for region Lakes Entrance, it was necessary to remove the data for fishing year 1992–93.

The second method that can explicitly handle zero CPUE values (Candy 2003) uses the Tweedie pdf (Tweedie 1984). The Tweedie pdf is a three-parameter general pdf which belongs to a class of pdfs from ‘exponential dispersion models’(Dunn and Smyth 2005) of which normal, Poisson, gamma and inverse Gaussian pdfs are special cases (Shono 2008). Two of the parameters are mean and variance, and the third parameter  $p$ , called the index (power) parameter, determines the shape of the Tweedie pdf. The Tweedie pdf becomes a normal pdf when parameter  $p=0$ , becomes a Poisson pdf when  $p=1$ , and has continuous data with exact values of zero when  $1 < p < 2$ . It becomes a gamma pdf when  $p=2$ , has positive continuous data when  $p > 2$  (Dunn and Smyth 2005; Lennox *et al.* 2004), and becomes a Gaussian inverse pdf when  $p=3$ . Given the presence of zero CPUE values for SRL,  $p$  is expected to fall within the range from 1 to 2 between the Poisson and gamma pdfs. This method is not operational in the statistical package SAS, but is operational in the statistical package R. However, because the lack of adequate computing capacity on available computers, it was necessary to purchase a 64-bit computer with expanded memory.

The generalised linear models (GLM) adopted for CPUE standardisation tested each of four pdfs (normal, gamma, Poisson, and inverse Gaussian) log linked from the family of exponential pdfs for all CPUE values greater than zero and the binomial pdf logit linked where all CPUE values greater than zero were set to 1 and all zero CPUE values set to 0. Standardisation of CPUE was undertaken for each of WZ and EZ separately and for WZ and EZ combined.

$$E(CPUE_i) = \mu_i$$

and

$$\mu_i = g^{-1}(\eta)$$

where  $g^{-1}()$  is the inverse of the link function, and

$$\begin{aligned} \eta = & \text{intercept} + \text{fishing year} + \text{fishing month} + \text{region} + \text{depth category} + \text{vessel-fisher} \\ & + \text{fishing year} \times \text{fishing month} + \text{fishing year} \times \text{region} + \text{fishing year} \times \text{depth category} \\ & + \text{fishing month} \times \text{region} + \text{fishing month} \times \text{depth category} + \text{region} \times \text{depth category} \end{aligned}$$

All factors and interactions terms included in this model were statistically significant.

Selection of the most parsimonious model was based on following three criteria:

1. Akaike Information Criterion (AIC) calculated as  $AIC = -2\ln(L) + 2K$  where L is the likelihood and K is the number of parameters estimated by the model,
2. convergence of the model, and
3. deviance / degrees of freedom, which is the dispersion index and ideally is close to 1.

The CPUE standardised trend for each of Victoria, Western Zone, Eastern Zone, and six regions (Portland, Warrnambool, Apollo Bay, Queenscliff, San Remo and Lakes Entrance) was determined by multiplying the non-zero standardised CPUE values from the best fitting exponential pdf (normal, gamma, Poisson, or inverse Gaussian) with the standardised binomial proportion (values close to 1 for SRL) from the binomial pdf. During calculation of standardised CPUE, we used marginal weighting procedure. This procedure allocates an appropriate weighting for a coefficient of a factor level based on the number of observations available in that factor level. The AIC together with the values of the dispersion index (deviance / degrees of freedom) and model convergence indicate that the pdf for gamma with a log link fits the data best (Table 7). Hence, it is feasible to apply models based on the gamma (with log link) pdf-binomial (logit link) pdf for standardisation of SRL CPUE data.

Applying similar procedure for the Tweedie pdf, except it is not necessary to multiply two trends as for the delta-X model formulation; because the Tweedie pdf incorporates the zero CPUE values directly. Hence, the Tweedie pdf was adopted for standardisation of SRL CPUE data for the purpose of stock assessment. The Tweedie standardised CPUE trend shows a greater depletion than the unstandardised CPUE trend for both WZ and EZ (Figure 10), and for each of the six regions (Figure 11). Apart from Apollo Bay Region and Lakes Entrance Region, standardised CPUE begins the time series above unstandardised CPUE, but ends the time series below unstandardised CPUE. In Apollo Bay Region, higher unstandardised CPUE at the start of the time series is probably associated with greater restriction on the deployment of fewer pots resulting in much higher CPUE compared with Portland Region and Warrnambool Region, which were included with Apollo Bay Region in CPUE standardisation for WZ. In Lakes Entrance Region, the much higher unstandardised CPUE than standardised CPUE is associated with the seasonal nature of the fishery in that region; most of the catch and effort occur during the summer season resulting in higher CPUE (see Figure 9 for overall patterns in EZ).

As inputs to stock assessment, total catch mass and catch number (non-screened and non-selected), unstandardised CPUE (i.e. nominal CPUE), and Tweedie standardised CPUE for the 33-year period from 1978–79 to 2010–11 are presented at the spatial resolutions of zone and region and temporal resolution of fishing year and month (Tables 8–15).

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Table 1. Data selection variables adopted for counting records and accumulating values

SRL, southern rock lobster; GC, giant crab; C, count; P, present; A, absent; C, corrected; U, uncorrected; PL, potlifts; ST, soak time; SP, soak pots.

Categorical variables	Continuous catch & effort variables	Count	Present or Absent	Corrected or Uncorrected	Species or Pot	Variable
All records	Total number of records	C	P	C, U	SRL, GCh, Pot	Kg, No, PL
	Total number of records with Pots	C	P	U	All	Al
PersonNo	Total number of records with corrected Pots, corrected SRL Kg, & corrected SRL No.	C	P	U	Pot	PL
Reg	Total number of records with corrected SRL Kg & corrected SRL No.	C	P	C	PRL	Cm
RegPerson	Total number of records with corrected SRL Kg	C	P	C	SRL	Cm
	Total number of records with corrected SRL No.	C	P	C	SRL	Kg
Zone_q	Total number of records with corrected Pots, corrected SRL Kg (zero), & corrected SRL No (zero)	C	A	C	SRL	No
Area_q	Total number of records with uncorrected Pots, uncorrected SRL Kg, & uncorrected SRL No.	C	P	U	SRL	Cm
Depth category	Total number of records with uncorrected Pots, uncorrected SRL Kg	C	P	U	SRL	Kg
Target	Total number of records with uncorrected Pots, uncorrected SRL No.	C	P	U	SRL	No
FsYr	Total number of records with uncorrected Pots, uncorrected GC Kg & SRL No.	C	P	U	GCh	Cm
FsMn	Total number of records with uncorrected Pots, uncorrected GC Kg	C	P	U	GCh	Kg
	Total number of records with uncorrected Pots, uncorrected GC No.	C	P	U	GCh	No

**Table 2. Number of records sequentially rejected through initial data screening steps for the 33-year period of fishing years from 1978-79 to 2010-11**

Fishing year, period from 1 or 15 November to 16 or 30 September (depending on legislation); SRL, southern rock lobster; GC, giant crab; CPUE, catch mass per unit effort data; area, 10 grid-cell minutes of longitude; all records specify Fisher, Year, Month, Day, Target species, and Zone.

Screening criterion	Step	Records included		Records excluded	
		Number	Per cent	Number	Per cent
All records		535556	100.00		
without records from 15 fishers (selected records for 11 & all records for 4) rejected because of irrational data or missing key data fields	1	534220	99.75	1336	0.25
& without records for October	2	533731	99.66	489	0.09
& without records with missing vessel distinguishing mark	3	533244	99.57	487	0.09
& without records with missing information on area grid cell	4	527311	98.46	5933	1.11
& without records with missing information on depth	5	521877	97.45	5434	1.01
& without records with missing information on catch mass (i.e. catch alternatively reported only as catch number)	6	508378	94.93	13499	2.52
& without records not targeting SRL or not targeting both SRL & GC	7	503713	94.05	4665	0.87
& without records with missing information on number of pots	8	503650	94.04	63	0.01
& without records where no. of pots set is <15 because of high cpue mean, variation and proportion of zeros (see Table 3)	9	494207	92.28	9443	1.76
& without records from 11 fishers (selected records for 9 & all records for 2) rejected because CPUE is averaged over 3 or more days	10	485370	90.63	8837	1.65
Total records excluded by the screening process				50186	9.37

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 3. CPUE by pot number range from 1978–79 to 2010–11**

CPUE, catch mass per unit effort data partially screened (Table 2 Step 9), Sd, standard deviation.

Pots set no. range	Number of records			% zero CPUE	CPUE (kg/potlift)			
	Non-zero CPUE	Zero CPUE	Total		Mean	Sd	Minimum	Maximum
1–4	421	436	857	50.9	1.18	2.40	0.00	34.00
5–9	1797	517	2314	22.3	0.80	1.32	0.00	19.98
10–14	5507	765	6272	12.2	0.72	0.90	0.00	10.80
15–19	13957	839	14796	5.7	0.51	0.54	0.00	12.33
20–24	26800	781	27581	2.8	0.59	0.56	0.00	7.88
25–29	21436	350	21786	1.6	0.52	0.48	0.00	9.79
30–34	33273	483	33756	1.4	0.55	0.54	0.00	9.38
35–39	21035	285	21320	1.3	0.50	0.51	0.00	9.47
40–44	35558	354	35912	1.0	0.54	0.50	0.00	10.16
45–49	43662	368	44030	0.8	0.59	0.51	0.00	10.18
50–99	275029	1788	276817	0.6	0.56	0.44	0.00	9.50
100–149	16645	518	17163	3.0	0.53	0.40	0.00	5.36
≥150	1037	9	1046	0.9	0.49	0.37	0.00	2.54
Total	496157	7493	503650	1.5	0.56	0.50	0.00	34.00

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 4. Number of screened and selected records by zone with and without records corrected for missing catch and effort data fields from 1978–79 to 2010–11

Fishing year, period from 1 or 15 November to 15 or 30 September (depending on legislation); SRL, southern rock lobster; GC, giant crab; all records specify Vessel, Fisherman, Year, Month, Day, Target species, and Zone.

Selected data set	Number of included records corrected or uncorrected for missing potlifts, SRL mass or SRL number												
	Corrected records included						Corrected records excluded						
	Records	SRL zero catch	Pots	Pots SRL Kg	Pots SRL No	Pots GC Kg	Records	SRL zero catch	Pots	Pots SRL Kg	Pots SRL No	Pots GC Kg	
<b>Quantities expressed in numbers</b>													
<b>Zones combined</b>													
All screened records before selection	485370	5532	484460	470120	479200	3392	470250	479200	470250	470250	3392	11995	3526
& >2 fishing years of data contributed	427154	4473	426343	415013	422086	3188	415111	422086	415111	415111	3188	10470	3313
& 200 records or more	416455	4284	415659	405118	411588	3104	405215	411588	405215	405215	3104	9904	3225
& >5 fishing years of data contributed	314457	3054	313915	305889	310992	2699	305952	310992	305952	305952	2699	6639	2814
<b>Western Zone</b>													
All screened records before selection	344302	2957	343748	334247	340959	3364	334285	340959	334285	334285	3364	11597	3497
& >2 fishing years of data contributed	301390	2399	300919	293301	298649	3170	293330	298649	293330	293330	3170	10170	3294
& 200 records or more	293637	2288	293195	286144	291033	3086	286173	291033	286173	286173	3086	9621	3206
& >5 fishing years of data contributed	220434	1541	220155	215149	218690	2696	215168	218690	215168	215168	2696	6388	2810
<b>Eastern Zone</b>													
All screened records before selection	141068	2575	140712	135873	138241	28	135965	138241	135965	135965	28	398	29
& >2 fishing years of data contributed	123378	2033	123050	119623	121103	3	119692	121103	119692	119692	3	251	4
& 200 records or more	119350	1943	119031	115978	117174	3	116046	117174	116046	116046	3	243	4
& >5 fishing years of data contributed	91904	1479	91675	89249	90250	3	89293	90250	89293	89293	3	150	4
<b>Quantities expressed as per cent</b>													
<b>Zones combined</b>													
All screened records before selection	100.0	1.1	99.8	96.9	98.7	0.7	96.9	98.7	96.9	96.9	0.7	2.5	0.7
& >2 fishing years of data contributed	88.0	0.9	87.8	85.5	87.0	0.7	85.5	87.0	85.5	85.5	0.7	2.2	0.7
& 200 records or more	85.8	0.9	85.6	83.5	84.8	0.6	83.5	84.8	83.5	83.5	0.6	2.0	0.7
& >5 fishing years of data contributed	64.8	0.6	64.7	63.0	64.1	0.6	63.0	64.1	63.0	63.0	0.6	1.4	0.6
<b>Western Zone</b>													
All screened records before selection	70.9	0.6	70.8	68.9	70.2	0.7	68.9	70.2	68.9	68.9	0.7	2.4	0.7
& >2 fishing years of data contributed	62.1	0.5	62.0	60.4	61.5	0.7	60.4	61.5	60.4	60.4	0.7	2.1	0.7
& 200 records or more	60.5	0.5	60.4	59.0	60.0	0.6	59.0	60.0	59.0	59.0	0.6	2.0	0.7
& >5 fishing years of data contributed	45.4	0.3	45.4	44.3	45.1	0.6	44.3	45.1	44.3	44.3	0.6	1.4	0.6
<b>Eastern Zone</b>													
All screened records before selection	29.1	0.5	29.0	28.0	28.5	0.0	28.0	28.5	28.0	28.0	0.0	0.1	0.0
& >2 fishing years of data contributed	25.4	0.4	25.4	24.6	25.0	0.0	24.7	25.0	24.7	24.7	0.0	0.1	0.0
& 200 records or more	24.6	0.4	24.5	23.9	24.1	0.0	23.9	24.1	23.9	23.9	0.0	0.1	0.0
& >5 fishing years of data contributed	18.9	0.3	18.9	18.4	18.6	0.0	18.4	18.6	18.4	18.4	0.0	0.0	0.0

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 5. Quantities for screened and selected records for each zone with and without records corrected for missing catch and effort data fields from 1978-79 to 2010-11

Fishing year, period from 1 or 15 November to 15 or 30 September (depending on legislation); SRL, southern rock lobster; CC, giant crab; CPUE, screened catch mass per unit effort data; corrected, missing data corrected.

Selected data set	Quantities summed over all records corrected and uncorrected for missing potlifts, SRL mass or SRL number											
	Fishers	Vessels	Vessel-fisher	SRL mass (tonne)	SRL number ('000)	GC mass (tonne)	Potlifts ('000)	Soak time ('000)	Soakpots ('000)	Mean SRL mass (kg)	SRL CPUE (kg/potlift)	SRL CPUE (no/potlift)
<b>Quantities expressed in numbers</b>												
<b>Zones combined</b>												
All screened records before selection	667	820	1480	14585	15212	217	26237	568	22686	0.96	0.56	0.58
& >2 fishing years of data contributed			563	12993	13583	187	23278	499	19617	0.96	0.56	0.58
& 200 records or more			472	12572	13178	174	22760	487	19109	0.95	0.55	0.58
& >5 fishing years of data contributed			245	9566	10057	122	17276	366	14177	0.95	0.55	0.58
<b>Western Zone</b>												
All screened records before selection			1071	12299	13143	213	20808	401	17645	0.94	0.59	0.63
& >2 fishing years of data contributed			384	10947	11731	185	18401	350	15129	0.93	0.59	0.64
& 200 records or more			320	10614	11394	172	17984	341	14700	0.93	0.59	0.63
& >5 fishing years of data contributed			163	8087	8706	123	13585	255	10667	0.93	0.60	0.64
<b>Eastern Zone</b>												
All screened records before selection			559	2286	2069	4	5429	166	5041	1.10	0.42	0.38
& >2 fishing years of data contributed			196	1980	1791	2	4773	146	4399	1.11	0.41	0.38
& 200 records or more			155	1865	1693	2	4630	141	4275	1.10	0.40	0.37
& >5 fishing years of data contributed			91	1453	1325	1	3620	109	3454	1.10	0.40	0.37
<b>Quantities expressed as per cent</b>												
<b>Zones combined</b>												
All screened records before selection	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
& >2 fishing years of data contributed			38.0	89.1	89.3	86.4	88.7	87.9	86.5			
& 200 records or more			31.9	86.2	86.6	80.3	86.7	85.7	84.2			
& >5 fishing years of data contributed			16.6	65.6	66.1	56.2	65.8	64.4	62.5			
<b>Western Zone</b>												
All screened records before selection			72.4	84.3	86.4	98.3	79.3	70.7	77.8			
& >2 fishing years of data contributed			25.9	75.1	77.1	85.2	70.1	61.7	66.7			
& 200 records or more			21.6	72.8	74.9	79.2	68.5	60.1	64.8			
& >5 fishing years of data contributed			11.0	55.4	57.2	56.7	51.8	44.9	47.0			
<b>Eastern Zone</b>												
All screened records before selection			37.8	15.7	13.6	1.7	20.7	29.3	22.2			
& >2 fishing years of data contributed			13.2	13.6	11.8	1.0	18.2	25.7	19.4			
& 200 records or more			10.5	12.8	11.1	1.0	17.6	24.9	18.8			
& >5 fishing years of data contributed			6.1	10.0	8.7	0.6	13.8	19.1	15.2			

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 6. Number and per cent of records unscreened, screened and selected by zone from 1978–79 to 2010–11**

Fishing year, period from 1 or 15 November to 15 or 30 September (depending on legislation); all records specify Vessel, Fisher, Year, Month, Day, Target species, and Zone.

Selected data set	Number of records	Per cent of records		
		Non-screened	Screened	Selected
<b>Non-screened and non-selected records</b>				
<i>Zones combined</i>				
All records	535556	100.0		
& without records not targeting SRL or not targeting both SRL & GC	530770	99.1		
<i>Western Zone</i>				
All records	375299	70.1		
& without records not targeting SRL or not targeting both SRL & GC	370575	69.2		
<i>Eastern Zone</i>				
All records	160257	29.9		
& without records not targeting SRL or not targeting both SRL & GC	160195	29.9		
<b>Screened and non-selected records</b>				
<i>Zones combined</i>				
All screened records before selection	485370	90.6	100.0	100.0
& >2 fishing years of data contributed by each vessel-fisher	427154	79.8	88.0	88.0
& 200 records or more	416455	77.8	85.8	85.8
& >5 fishing years of data contributed by each vessel-fisher	314457	58.7	64.8	64.8
<i>Western Zone</i>				
All screened records before selection	344302	64.3	70.9	100.0
& >2 fishing years of data contributed by each vessel-fisher	301390	56.3	62.1	87.5
& 200 records or more	293637	54.8	60.5	85.3
& >5 fishing years of data contributed by each vessel-fisher	220434	41.2	45.4	64.0
<i>Eastern Zone</i>				
All screened records before selection	141068	26.3	29.1	100.0
& >2 fishing years of data contributed by each vessel-fisher	123378	23.0	25.4	87.5
& 200 records or more	119350	22.3	24.6	84.6
& >5 fishing years of data contributed by each vessel-fisher	91904	17.2	18.9	65.1

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 7. Summary of statistical quantities for evaluation of model fits to CPUE data**

CPUE, screened and selected catch mass per unit effort data for vessel-fishers contributing data during the period from 1978–79 to 2009–11 in >2 fishing years and  $\geq 200$  records; pdf, probability density function; Df, degrees of freedom; AIC, Akaike Information Criterion;  $AIC = -2\ln(L) + 2K$  where L is likelihood and K is the number of parameters estimated by a model (lowest AIC value indicates the most parsimonious model structure).

Statistical item	Model variable or pdf	Link	Victoria	Zone	
				Western	Eastern
No. of observations	Non-zero		412171	291349	117407
	Zero		4284	2288	1943
	Total		416455	293637	119350
	Non-zero proportion		0.990	0.992	0.984
No. of parameters	Fishing year		33	33	33
	Fishing month		10	10	10
	Region		6	3	3
	Depth class		2	2	2
	Vessel-fisher		472	320	155
	Total (K)		523	368	203
Model convergence	Normal	Log	Yes	Yes	Yes
	Gamma	Log	Yes	Yes	Yes
	Poisson	Log	Yes	Yes	Yes
	Inverse gaussian	Log	No	No	No
	Binomial	Logit	Yes	Yes	Yes
Deviance/Df	Normal	Log	0.1050	0.1105	0.0861
	Gamma	Log	0.2914	0.2580	0.3612
	Poisson	Log	0.1391	0.1373	0.1370
	Inverse gaussian	Log	3.4084	2.5831	5.2899
	Binomial	Logit	0.1094	0.0853	0.1564
Log likelihood {ln(L)}	Normal	Log	-119886	-92188	-22345
	Gamma	Log	19078	-2080	26648
	Poisson	Log	-331747	-243099	-85560
	Inverse gaussian	Log	-298514	-221743	-59247
	Binomial	Logit	-22770	-12518	-22345
AIC	Normal	Log	240817	185112	45095
	Gamma	Log	-37110	4895	-52890
	Poisson	Log	664541	486934	171525
	Inverse gaussian	Log	598075	444221	118899
	Binomial	Logit	45947	25772	44785

Data source: Fisheries Victoria CandE Database (16 November 2011)



Table 8.1.1. Monthly catch mass during fishing years from 1978–79 to 2010–11 for each zone

Data: non-screened and non-selected.

Fishing year	Catch (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Western Zone</b>										
1978–79	55357	90916	93799	68268	71876	37376	14367	6581	7129	39837
1979–80	65296	62934	84152	76129	57654	35773	11961	5851	10466	42518
1980–81	80368	102149	108194	94778	64157	35320	13684	4356	8107	37752
1981–82	71355	87133	101813	77049	65888	31988	8866	6167	9442	38950
1982–83	65866	90728	71180	74583	54778	38157	15064	2836	8907	38395
1983–84	54566	86529	84355	75078	45951	23465	14655	3187	5871	26885
1984–85	47145	58803	85601	77878	56267	30786	13290	3839	5406	26801
1985–86	57324	55968	57646	52618	48857	19887	11365	3389	5566	32369
1986–87	50207	56936	58576	53864	52719	34686	9378	4555	7699	22573
1987–88	23385	67893	72751	57370	55822	29895	13390	4071	6635	14101
1988–89	20468	55443	55604	49560	48499	28903	13828	5672	9688	16101
1989–90	25320	57966	67680	51277	57866	27705	12017	5360	9334	16906
1990–91	18704	50347	60243	51283	48212	30924	20071	6252	15625	14916
1991–92	27545	61815	72252	68150	65502	45091	29533	9755	11582	17230
1992–93	22170	60379	87452	54081	63935	47661	25986	7903	16398	21908
1993–94	36394	69238	64830	79244	85570	40296	21003	13335	16364	21954
1994–95	29973	82152	87992	68865	55013	31909	29948	12870	13973	22351
1995–96	28762	67502	83364	74345	64841	29770	29345	9519	14928	20256
1996–97	25148	73109	71089	68861	51968	37666	24385	11137	16316	22345
1997–98	32690	88903	94329	61631	61816	39963	26440	12505	16161	31670
1998–99	37517	83606	89420	76631	75692	57154	30968	10858	18694	35243
1999–00	42608	78172	81922	88492	70384	54437	27310	9958	24060	43481
2000–01	52128	85556	107030	89465	59935	40095	34048	9297	22054	25300
2001–02	33271	72801	90456	65633	53122	46710	29668	3981	11349	31139
2002–03	38711	76731	89159	66797	42720	39710	34774	5633	11133	24324
2003–04	44575	70125	74295	76276	62250	46536	30672	6645	13072	36147
2004–05	35420	68871	74912	56666	49855	43646	26439	10091	8985	33180
2005–06	30390	54746	82016	66676	47810	17951	12546	4342	9806	31420
2006–07	26077	57147	57570	61480	46010	36130	14855	0	0	36656
2007–08	32070	51362	57695	45915	44021	26153	14780	0	0	16641
2008–09	17412	44298	50321	38924	31846	17629	13052	3830	4707	13090
2009–10	19004	40016	42332	36451	30546	19482	17197	7136	9356	17339
2010–11	19858	36751	52458	31762	30057	23200	10396	3810	14327	30643
<b>Eastern Zone</b>										
1978–79	25055	21399	27085	14643	12643	7897	3750	880	3322	22398
1979–80	16183	20163	19447	19286	9177	7650	3326	374	3760	16187
1980–81	23468	22635	24815	19547	11263	6585	3957	789	3685	16678
1981–82	16799	25139	23405	21184	13667	5966	1985	933	4203	17608
1982–83	23829	25755	19997	20367	14118	7638	3676	1840	5419	20534
1983–84	17976	24439	23825	21580	13296	8419	3867	1062	3856	18143
1984–85	20547	22173	20114	15013	12915	6854	2151	565	2024	10569
1985–86	19868	19501	17025	11172	7725	4307	2395	554	1887	10243
1986–87	12966	14426	12384	11190	8212	3361	1104	839	2859	10399
1987–88	7933	16607	16305	9618	8184	3145	1270	668	2361	3893
1988–89	6542	13469	13404	8053	6572	4165	900	558	3636	6282
1989–90	9385	16618	15971	11784	10550	5197	1612	633	3681	7963
1990–91	7394	14183	14237	10356	7030	3423	1790	704	5062	7350
1991–92	6928	11938	9491	10462	8278	4115	1863	984	3713	6791
1992–93	5056	11575	13750	8301	8647	5882	2395	1151	5839	6791
1993–94	9023	14763	14196	12159	9986	3705	1663	1759	4724	6741
1994–95	5717	14861	13721	10671	6932	5541	3300	1221	4486	5555
1995–96	3876	8920	10548	9465	7664	3348	1912	1644	4616	4733
1996–97	3137	9833	9711	9494	7015	3958	2854	2440	4898	6453
1997–98	7871	13424	11052	7543	6734	3915	2498	1737	4734	6806
1998–99	4457	11714	11905	9298	5782	4883	2558	1785	5550	9337
1999–00	6572	12023	12012	12536	7494	4903	1627	1887	5279	10298
2000–01	9617	14599	11700	8272	4772	3575	2425	1884	7223	8582
2001–02	4766	10377	10663	5487	5273	3163	1271	453	4170	7831
2002–03	4830	9941	8570	6769	3979	4597	2111	500	3855	7270
2003–04	4477	11109	8572	6132	5450	2492	2305	886	3160	10958
2004–05	5487	9072	10338	5220	5464	3507	1957	1409	2724	9590
2005–06	4035	10292	10267	7140	5383	970	1091	1077	3004	9019
2006–07	3897	9448	8305	8323	6192	3163	1940	1017	3216	8351
2007–08	4617	9683	6833	5149	5055	2315	1359	566	4237	6154
2008–09	2257	7013	7513	3882	5247	2852	1772	982	3288	4667
2009–10	3368	8116	7850	5930	4304	2435	2061	1601	6338	13181
2010–11	5085	11581	12017	5781	3580	3310	3024	1055	5870	13999

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 8.2.1 Monthly catch mass during fishing years from 1978–79 to 2010–11 for each region

Data: non-screened and non-selected.

Fishing year	Catch (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Portland Region</b>										
1978–79	24433	40528	48360	30005	38234	19674	5207	1869	4774	22554
1979–80	27325	25935	37873	34052	31220	16787	2704	2564	5844	32054
1980–81	46975	60280	63826	62319	37536	18064	4776	2602	5527	22691
1981–82	33618	41315	53681	41455	39605	17550	3552	1861	6567	25295
1982–83	28540	35218	42176	45863	37316	23780	7300	682	6140	27251
1983–84	25695	39512	43174	36111	23377	10779	2608	362	3664	14937
1984–85	23938	29193	35913	32992	27192	15419	3440	558	2890	15296
1985–86	27751	26934	28986	23600	24054	12423	4198	945	3500	18605
1986–87	32389	34997	31821	25100	23041	15253	2392	755	4062	10609
1987–88	14254	41695	36802	28582	28626	15564	4165	1889	3353	7491
1988–89	11703	31631	29019	25394	27646	14107	5799	1487	5393	9338
1989–90	14820	32396	38732	29756	34297	18021	6882	2259	6112	9799
1990–91	10616	27079	32910	30352	31963	19396	10441	2470	9345	10242
1991–92	17254	39474	43708	42007	38750	26743	16610	4480	7156	10124
1992–93	11935	35096	45655	29815	30672	25443	14156	3463	7653	10811
1993–94	20493	38852	35808	38240	39777	21332	11367	6214	9361	13106
1994–95	15873	47418	47136	38833	32585	19027	17340	6130	9765	14848
1995–96	19855	44618	47794	44907	43157	20645	16622	4258	8665	11885
1996–97	17211	43789	39877	36456	27932	20714	14366	6255	8728	14334
1997–98	17856	51617	58372	37582	34649	23853	13966	5936	9156	18197
1998–99	21259	44065	43976	31651	32803	30000	16689	5470	10988	19062
1999–00	24972	41750	47015	47657	38333	27768	17850	5563	12694	21601
2000–01	26775	48595	54449	45160	33957	22632	16085	4390	11686	14532
2001–02	16031	39017	47535	33092	23114	28170	17698	2674	7114	16819
2002–03	21537	39785	48800	35693	23301	23265	23176	4317	6895	11942
2003–04	29766	40117	41628	43117	35867	26413	18488	3013	7497	20858
2004–05	20276	39198	39509	29593	27857	25968	17242	3142	5284	21036
2005–06	18277	33423	44773	36937	27017	9503	6998	1980	6193	16261
2006–07	14926	31615	31949	31978	25073	19145	10946	0	0	21493
2007–08	17194	26431	32201	23107	22521	13704	8229	0	0	9548
2008–09	8164	20547	23438	15963	14112	8769	6343	1543	3038	8695
2009–10	11031	19649	18278	15795	14635	10413	9732	4564	6252	10115
2010–11	11000	21682	26461	17303	19976	14958	6476	2147	9027	18460
<b>Warrnambool Region</b>										
1978–79	8104	22165	25839	21375	21303	13049	6593	3415	2103	11602
1979–80	11991	16613	26181	22332	19228	10772	5131	2607	3619	6892
1980–81	15185	21081	19695	16369	14903	9807	5578	1174	1722	6309
1981–82	10046	16415	22728	18670	18287	10528	3716	2983	2033	6094
1982–83	10564	18176	12905	16359	10668	8362	4668	1255	1789	6690
1983–84	10005	21575	26259	23565	14651	8337	7648	2370	1057	6962
1984–85	9336	11312	27096	22678	17909	10043	5467	1313	1826	6687
1985–86	10476	10283	13952	17371	13820	5005	4152	1773	1324	6564
1986–87	6570	8007	13709	14513	13661	10126	4422	2718	3054	8274
1987–88	4379	11467	21930	16551	15535	8938	5147	1026	2183	3044
1988–89	2949	11417	11431	11996	10148	7288	4288	2115	2559	3494
1989–90	3326	9418	13232	9896	12036	5403	3212	1475	1784	3124
1990–91	2698	10403	14479	8969	8625	7445	5662	2515	4447	2932
1991–92	3921	10709	18700	13469	15811	11717	8486	3881	3122	3566
1992–93	3739	10154	23889	15113	20092	11484	7822	3275	6100	6239
1993–94	3497	9801	14095	19555	24638	10836	5295	3659	3980	4488
1994–95	4133	13782	21853	13924	8864	6431	7315	4192	2557	4421
1995–96	3593	8827	21064	15096	10796	5143	7550	2996	3955	3568
1996–97	3543	13998	17090	16894	12827	7158	4714	3099	4538	3479
1997–98	5400	11397	15801	11149	11343	9349	7297	4229	4688	7438
1998–99	8261	23501	29368	28450	26652	17398	9830	3924	4694	8049
1999–00	7645	18036	21438	22715	19748	14563	5754	2746	6295	10102
2000–01	10702	16690	29745	27621	15918	10020	10520	2686	6500	5194
2001–02	6015	14906	23313	20375	18990	9906	6040	1018	1876	7166
2002–03	7915	18776	22740	18436	11462	8710	4453	761	2682	5541
2003–04	5729	10220	16028	18234	14967	11498	7533	2501	3840	9294
2004–05	6073	13443	21616	17938	14019	13332	6106	5447	3024	8221
2005–06	6489	11966	26435	21826	15382	6177	4098	1782	2581	7863
2006–07	5700	12510	14690	18362	13408	10515	1873	0	0	9307
2007–08	7820	13691	16473	14167	12355	8072	3946	0	0	3610
2008–09	4892	13799	16570	16482	10314	4845	3278	1414	991	2509
2009–10	3081	11171	15517	12977	10537	5970	4859	1669	1962	3903
2010–11	3314	7707	16817	9529	5078	5138	1877	738	2773	6483

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 8.2.2 Monthly catch mass during fishing years from 1978–79 to 2010–11 for each region

Data: non-screened and non-selected.

Fishing year	Catch (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Apollo Bay Region</b>										
1978–79	22820	28224	19599	16888	12339	4653	2566	1297	252	5681
1979–80	25980	20386	20098	19745	7207	8213	4126	680	1004	3572
1980–81	18208	20788	24673	16090	11718	7449	3330	580	858	8751
1981–82	27691	29403	25404	16924	7996	3910	1598	1323	842	7561
1982–83	26762	37334	16099	12361	6794	6016	3096	899	978	4453
1983–84	18866	25443	14922	15403	7924	4349	4399	455	1150	4985
1984–85	13871	18298	22591	22208	11166	5324	4383	1968	690	4818
1985–86	19097	18750	14708	11647	10982	2458	3014	671	742	7200
1986–87	11248	13932	13046	14252	16017	9307	2564	1083	584	3690
1987–88	4752	14731	14018	12237	11660	5393	4079	1156	1099	3565
1988–89	5816	12395	15154	12169	10705	7508	3741	2070	1735	3269
1989–90	7174	16152	15716	11625	11533	4281	1924	1626	1438	3984
1990–91	5390	12865	12855	11962	7625	4084	3968	1266	1832	1742
1991–92	6370	11632	9844	12674	10941	6631	4438	1393	1305	3540
1992–93	6496	15129	17908	9153	13170	10734	4008	1165	2645	4858
1993–94	12404	20586	14927	21449	21155	8128	4340	3463	3023	4361
1994–95	9966	20952	19003	16107	13564	6451	5293	2549	1651	3082
1995–96	5314	14057	14506	14342	10888	3981	5173	2266	2309	4802
1996–97	4395	15321	14122	15511	11208	9794	5305	1783	3050	4533
1997–98	9433	25889	20156	12900	15824	6761	5177	2341	2317	6035
1998–99	7997	16040	16075	16529	16237	9756	4448	1465	3012	8132
1999–00	9991	18386	13470	18121	12302	12106	3706	1650	5070	11779
2000–01	14651	20271	22836	16684	10060	7442	7443	2221	3868	5574
2001–02	11225	18879	19607	12167	11018	8634	5930	289	2359	7154
2002–03	9259	18170	17618	12668	7957	7736	7145	555	1557	6842
2003–04	9079	19789	16640	14925	11416	8624	4651	1131	1735	5996
2004–05	9072	16229	13787	9135	7979	4346	3091	1502	677	3923
2005–06	5625	9357	10808	7914	5411	2271	1449	581	1032	7297
2006–07	5451	13022	10931	11140	7529	6470	2036	0	0	5856
2007–08	7057	11240	9021	8642	9145	4376	2605	0	0	3484
2008–09	4356	9952	10313	6479	7420	4014	3430	873	678	1886
2009–10	4892	9197	8537	7679	5374	3099	2607	903	1143	3321
2010–11	5544	7363	9180	4930	5003	3103	2044	925	2527	5700
<b>Queenscliff Region</b>										
1978–79	10070	9058	13559	5572	4315	3121	1370	62	2141	15686
1979–80	9074	9574	9935	10301	3589	2629	1607	198	2046	12278
1980–81	13743	9867	12020	8403	5237	2230	1066	27	1717	12957
1981–82	8766	8765	10909	9174	6288	2484	952	128	1577	11158
1982–83	12306	11485	9672	8691	7749	2699	1476	302	2600	13416
1983–84	10197	12325	15631	15564	8452	4484	1550	554	2212	12676
1984–85	8948	9915	10482	7206	7001	2379	709	165	390	7077
1985–86	8785	8847	7714	6894	3005	1447	437	250	484	7696
1986–87	5810	6072	6594	5698	3806	1809	325	398	1435	7410
1987–88	3898	7254	9680	6510	5653	2054	389	81	1325	2768
1988–89	2822	7050	6577	4407	3406	1780	406	353	2687	5017
1989–90	4024	10125	10928	8283	7226	3684	1246	195	2352	6268
1990–91	4742	8976	9683	6961	4024	1685	372	99	3460	5060
1991–92	4053	7524	6645	8252	5955	2481	666	593	2806	4819
1992–93	3407	6293	7420	4248	3808	2725	1080	316	3298	4014
1993–94	5786	7873	6417	5532	4874	1446	937	339	2558	4648
1994–95	2669	6603	5419	4737	2694	1528	1239	303	2034	3714
1995–96	2175	4493	5351	6231	4840	1859	863	424	3008	3479
1996–97	1499	4216	4339	5083	2465	1553	750	457	2246	4532
1997–98	3156	4667	5768	3766	2756	899	381	364	2546	4125
1998–99	2268	5358	4653	4468	3092	2505	849	564	3275	6095
1999–00	3708	6924	7735	7921	4298	2293	399	480	2940	7668
2000–01	6042	8616	6517	4754	2546	1543	1018	539	4759	6679
2001–02	3539	6635	6644	3524	2540	1901	376	242	2728	5214
2002–03	2887	5987	5490	4438	2588	3070	1424	261	2650	5473
2003–04	3129	8037	6105	4814	2823	1491	1477	469	2003	8214
2004–05	4139	6998	8338	3618	2936	2210	1118	420	2020	5456
2005–06	2245	6182	5129	3999	1593	375	557	241	1375	5833
2006–07	2186	4683	5048	4912	3007	1743	1421	190	1826	5506
2007–08	2891	5631	3610	2220	2448	1020	597	180	1594	3385
2008–09	1500	3951	4580	1629	2795	1179	365	145	2260	2793
2009–10	2079	4129	4040	2497	1787	1230	993	342	4061	10371
2010–11	3291	6366	5260	2825	1682	1214	1491	642	3178	8995

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 8.2.3 Monthly catch mass during fishing years from 1978–79 to 2010–11 for each region

Data: non-screened and non-selected.

Fishing year	Catch (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug-Sep
<b>San Remo Region</b>										
1978–79	4235	6033	7924	5465	6435	3649	2380	818	1109	4453
1979–80	4683	5597	5650	6880	4771	3823	989	176	1155	3016
1980–81	4309	7669	8585	8230	5463	3713	2861	762	1968	3699
1981–82	3514	9732	10220	8730	6908	2802	1033	805	2583	6336
1982–83	5986	10088	8851	10982	6368	4939	2201	1523	2819	7118
1983–84	4731	6788	5810	5491	4826	3630	2242	508	1644	5466
1984–85	3655	7483	6917	5983	5275	3800	1442	400	1620	3492
1985–86	3797	4712	6521	3567	4630	2424	1885	304	962	2102
1986–87	3255	4371	4188	4510	3963	1552	780	441	1279	2420
1987–88	2357	4960	3357	2225	1797	1090	657	501	972	732
1988–89	1042	2359	3457	2686	1946	1446	494	206	850	1123
1989–90	1984	3630	3500	2638	2659	1146	361	426	997	1171
1990–91	626	1918	2606	1965	2404	1706	1418	606	1602	2289
1991–92	1093	1727	1567	2078	2291	1633	1198	392	907	1972
1992–93	1037	3113	3998	2855	4042	2793	1183	835	2541	2777
1993–94	2003	4709	5361	5894	4745	1906	680	1411	2152	2049
1994–95	1412	5011	5608	3838	3241	2670	1630	809	2422	1718
1995–96	1115	2903	3548	2334	2333	1044	969	1035	1550	1060
1996–97	619	2711	2952	2539	2672	1722	1893	1459	2197	1551
1997–98	1688	3605	4258	2680	3382	2655	2086	1296	2023	2591
1998–99	1215	3594	4418	2884	2037	2019	1440	1209	2254	3243
1999–00	1646	2758	3454	3529	2542	2058	897	1339	2192	2366
2000–01	1672	2745	3321	2438	1865	1490	778	1338	2464	1903
2001–02	1055	2738	2949	1794	1869	1161	801	182	1442	2290
2002–03	704	2264	1769	1804	1213	1526	686	240	1206	1795
2003–04	890	1762	1806	1086	2621	1001	827	350	1091	2435
2004–05	837	745	861	1310	1987	1058	802	984	704	4132
2005–06	1741	3059	4765	2901	3371	579	522	836	1629	3186
2006–07	1417	3910	2680	2997	2849	1411	520	826	1390	2845
2007–08	1265	2961	3192	2808	2482	1282	761	386	2642	2769
2008–09	696	2294	2706	2184	2323	1654	1407	837	1012	1875
2009–10	953	3390	3506	3357	2517	1205	1040	1259	2278	2810
2010–11	1601	4776	5883	2604	1594	1644	1533	413	2692	5005
<b>Lakes Entrance Region</b>										
1978–79	10750	6308	5602	3605	1893	1127	0	0	72	2259
1979–80	2427	4992	3863	2104	816	1198	730	0	559	893
1980–81	5416	5099	4210	2913	563	641	30	0	0	22
1981–82	4519	6641	2276	3280	471	680	0	0	42	114
1982–83	5537	4182	1474	693	0	0	0	15	0	0
1983–84	3048	5326	2384	525	18	305	75	0	0	0
1984–85	7945	4775	2715	1823	640	675	0	0	14	0
1985–86	7287	5942	2790	710	90	436	73	0	441	445
1986–87	3901	3984	1602	982	443	0	0	0	145	569
1987–88	1678	4394	3268	884	734	0	224	86	64	394
1988–89	2678	4060	3370	959	1220	940	0	0	100	142
1989–90	3377	2863	1542	863	664	367	5	12	332	524
1990–91	2027	3289	1948	1430	602	31	0	0	0	0
1991–92	1782	2687	1279	132	33	0	0	0	0	0
1992–93	612	2169	2333	1197	797	364	132	0	0	0
1993–94	1234	2180	2418	734	367	352	47	8	14	44
1994–95	1637	3247	2695	2096	997	1343	431	110	30	123
1995–96	585	1524	1649	900	491	445	80	185	58	195
1996–97	1019	2907	2419	1872	1878	682	211	524	455	369
1997–98	3026	5153	1026	1097	596	361	31	78	164	90
1998–99	973	2762	2834	1945	653	360	269	12	21	0
1999–00	1219	2341	824	1086	654	552	332	69	147	264
2000–01	1904	3239	1862	1080	361	542	630	7	0	0
2001–02	172	1005	1071	169	864	101	94	30	0	327
2002–03	1239	1690	1311	527	179	1	0	0	0	2
2003–04	459	1311	661	233	6	0	0	67	67	309
2004–05	511	1329	1139	292	541	239	37	5	0	2
2005–06	49	1051	373	240	418	16	12	0	0	0
2006–07	294	855	577	414	336	9	0	0	0	0
2007–08	462	1091	30	121	126	13	0	0	0	0
2008–09	61	768	227	69	129	19	0	0	16	0
2009–10	336	598	304	76	0	0	28	0	0	0
2010–11	193	439	875	352	304	452	0	0	0	0

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 9.1.1. Monthly catch numbers during fishing years from 1978–79 to 2010–11 by zone

Data: non-screened and non-selected.

Fishing year	Catch (number) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Western Zone</b>										
1978–79	64678	92733	94402	66547	70736	34549	12951	5653	6515	36171
1979–80	73575	62992	78984	71451	53892	33819	12075	5662	9616	41595
1980–81	91275	103349	106090	94489	61668	32845	11911	3744	7465	35633
1981–82	80606	90249	99606	73132	65833	31059	9360	5568	8590	35093
1982–83	73053	89766	69386	73841	53689	35624	13882	2700	8560	34530
1983–84	60090	85971	81181	71615	45321	22733	13723	2876	5722	24512
1984–85	52792	59756	81889	71481	53202	29553	12601	3506	4933	24248
1985–86	66197	58576	57777	49388	46947	18476	9998	3087	5199	30237
1986–87	56426	60152	58512	52973	50126	32540	8917	4518	7577	21339
1987–88	25559	71856	73451	57150	55436	28905	12137	3999	6114	14243
1988–89	22335	60798	56186	50766	50507	36048	13524	5569	10073	16690
1989–90	29674	64910	72911	54116	60973	28742	11967	4859	9298	17181
1990–91	21985	55034	63640	53639	51064	31530	20789	6344	16459	16305
1991–92	33055	69995	78279	72633	69591	46528	29353	9662	12186	17987
1992–93	26685	66188	93464	57461	67201	49250	25452	7867	17012	22591
1993–94	42145	75414	67448	79618	83273	38667	20275	12494	15845	21284
1994–95	34226	87951	91193	68963	53383	32005	29395	11543	13496	21960
1995–96	34590	73872	86476	77732	67502	30987	28791	8631	14056	19326
1996–97	30074	80091	73741	70105	51589	36998	22743	10413	15658	22453
1997–98	38463	95737	100910	65065	63251	41221	26633	12164	16040	32959
1998–99	45558	94894	96584	83099	81874	62475	32452	11602	20507	38610
1999–00	52889	91115	93682	99918	78188	60256	30385	11275	26494	48287
2000–01	63042	99995	122087	101717	68565	44611	36537	9848	23835	27672
2001–02	41633	87013	103986	77680	61302	54858	32671	4180	12392	34507
2002–03	48861	90599	101161	76395	49690	44965	38370	5975	12333	26214
2003–04	46929	85737	83892	87395	69970	50880	32132	6520	13338	38219
2004–05	44047	79920	83208	62429	54511	44772	27711	9647	9573	35271
2005–06	39286	65144	92533	75294	51952	18828	12844	4195	10583	34774
2006–07	33966	69546	66556	71507	52520	39847	16478	0	0	41121
2007–08	41716	62768	68229	53623	49359	28395	15586	0	0	18318
2008–09	22706	52712	57896	44249	34641	19138	13158	3604	5062	14495
2009–10	24457	47539	49184	41431	34886	21720	18848	7479	10985	20042
2010–11	26220	45416	62481	38595	36300	27481	11934	4457	16782	36431
<b>Eastern Zone</b>										
1978–79	22546	19019	23011	12759	11139	6744	2849	600	2902	21232
1979–80	15698	18317	17827	18391	9265	6233	2702	276	3524	16203
1980–81	22943	20316	22757	17454	9901	5635	2900	433	3194	17220
1981–82	17390	22905	21476	19515	12148	5341	1769	700	3162	15758
1982–83	23424	23238	18906	19081	12731	6456	2711	1334	4650	19190
1983–84	18192	22468	22304	21245	12452	7454	3176	661	3501	16698
1984–85	19302	18644	17066	13015	10859	5352	1464	359	1284	8852
1985–86	18237	16631	14229	9319	6152	3279	1795	433	1424	9171
1986–87	11537	12532	10241	9241	6846	2910	757	501	2276	9320
1987–88	7738	14176	14116	8649	7558	2670	952	543	1926	3821
1988–89	6409	12795	12529	7750	6040	3494	772	393	3602	6310
1989–90	9726	16606	15955	12261	10721	5494	1588	499	3536	8153
1990–91	7670	13952	13529	10548	7084	3170	1687	549	5479	8065
1991–92	7221	11654	9729	10678	8064	3853	1705	823	3406	6439
1992–93	5270	11268	13240	8032	7624	4916	2036	762	4599	5591
1993–94	9062	13422	12272	10233	8175	2804	1242	1022	3507	5963
1994–95	5074	12489	11132	8452	5563	4213	2163	803	3488	4824
1995–96	3795	7729	9026	7952	6386	2687	1370	1209	3473	4094
1996–97	2869	8314	7632	7627	5386	2976	2062	1734	3839	5355
1997–98	6847	10529	9298	6402	5249	2833	1797	1098	3972	6010
1998–99	3957	9695	9912	8307	5226	4108	1998	1191	4739	8904
1999–00	6346	11848	12266	12525	6910	4081	1185	1440	4329	10196
2000–01	9927	14068	10752	7667	4245	3024	2182	1414	6208	7495
2001–02	4877	9659	10281	5544	4690	2971	978	330	3336	7024
2002–03	4895	8961	7756	6205	3735	4255	1662	328	3160	6935
2003–04	4956	10859	7679	6097	4659	2024	1820	525	2543	9664
2004–05	5898	8162	9907	4739	4630	2872	1340	767	2016	8178
2005–06	4131	9321	9002	6330	4192	763	850	676	2352	8267
2006–07	4103	8900	7491	7593	5194	2787	1528	605	2364	7057
2007–08	4833	8786	5769	4167	4034	1961	1082	338	2833	4947
2008–09	2354	5857	6313	2970	4100	2217	1144	577	2435	3746
2009–10	3192	6786	6737	4964	3541	1971	1537	1055	5741	14207
2010–11	5873	10598	11097	5983	3389	3076	2272	882	5121	13840

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 9.2.1. Monthly catch numbers during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected.

Fishing year	Catch (number) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Portland Region</b>										
1978–79	30389	42819	50054	29991	38311	18942	4779	1690	4540	20776
1979–80	33414	26376	35185	32986	30232	16742	3005	2859	5541	31953
1980–81	55099	61594	62348	62073	36064	16270	3773	2018	4852	20814
1981–82	38990	44968	52190	38836	39743	17221	3826	1736	5917	22269
1982–83	32424	35244	41411	45379	35741	21378	6685	744	5973	25512
1983–84	29192	41900	42634	35183	23546	10145	2438	378	3715	13978
1984–85	27526	30337	36633	33035	26705	14564	3065	575	2648	13734
1985–86	33279	30236	30388	23159	24926	11331	3475	742	3273	17742
1986–87	37398	37707	32017	25217	23024	15085	2218	819	4261	10619
1987–88	15264	44554	37677	30259	29171	14856	3687	1899	2964	7497
1988–89	12469	35024	30712	26895	30377	21765	6085	1544	5576	10001
1989–90	17837	37863	42539	32151	37497	19332	7146	2055	6222	10113
1990–91	12625	30404	35599	32525	34522	19950	11302	2639	9952	11188
1991–92	21261	45232	48806	45756	42236	28752	17200	4567	7868	10996
1992–93	14823	39209	51341	32723	33943	27689	14599	3496	7805	11000
1993–94	24993	43620	37831	38493	40395	21492	11063	5863	9198	13137
1994–95	19228	51681	50368	40587	33932	20218	18106	5714	9720	15546
1995–96	24422	50265	51607	49159	46553	21923	17490	4233	8895	12380
1996–97	21231	50219	43368	39099	29895	21709	14591	6425	9169	15024
1997–98	22262	58939	64799	41588	37633	26158	14928	6341	10098	19937
1998–99	26654	52616	49269	37475	38460	34993	18963	6266	12597	20989
1999–00	31828	51011	56446	56180	44409	32568	20860	6477	14697	25169
2000–01	33797	58805	64249	54037	40304	26166	18375	5002	13336	16559
2001–02	20548	47678	55980	39541	28483	34145	20223	2878	8049	19476
2002–03	27686	47819	56528	41324	27833	27087	26330	4716	7852	13465
2003–04	27875	48943	47776	50658	41316	29590	20149	3102	7889	21491
2004–05	25495	46243	44599	33505	32051	27143	18904	3210	5791	22328
2005–06	23942	40650	51959	43087	30946	10755	7656	2064	7007	19026
2006–07	20069	40384	38888	38892	30153	22549	12620	0	0	25102
2007–08	23124	33944	39933	28201	26387	16013	9412	0	0	10673
2008–09	11175	26073	28754	19055	16333	10243	7069	1570	3428	9923
2009–10	14923	24247	22270	19140	17593	12409	11435	4773	7569	11826
2010–11	15144	27798	32827	21494	24845	18263	7678	2637	10975	22065
<b>Warrnambool Region</b>										
1978–79	9518	21521	25505	20371	20777	11955	5844	2878	1763	10163
1979–80	12906	16968	25017	20114	17242	9587	4948	2216	3249	6094
1980–81	16202	21484	19331	17016	14708	9295	5208	1208	1770	6088
1981–82	10936	16825	22832	17780	17270	9944	3706	2678	1874	5699
1982–83	11966	17103	12213	15502	10471	7912	4369	1160	1627	4955
1983–84	10938	18965	24023	20856	14016	8237	7266	2108	964	6218
1984–85	10132	11389	24406	19121	15725	9753	5373	1233	1655	6035
1985–86	12208	10450	13526	14836	12234	4644	3904	1668	1299	5785
1986–87	7399	8011	12981	14060	12805	9076	4082	2630	2781	7003
1987–88	4687	11573	21112	15286	15088	8457	4570	1023	2172	3195
1988–89	3547	12363	10963	11928	10118	7198	4207	2019	2599	3468
1989–90	3930	10380	14040	10188	11812	5438	2997	1374	1651	3054
1990–91	3104	11659	15108	9022	8721	7229	5375	2422	4514	3182
1991–92	4807	12274	19112	13547	15641	11161	7894	3676	3144	3649
1992–93	4645	10756	23890	15149	19642	11066	6998	3196	6386	6441
1993–94	4306	10684	15012	19548	23264	9939	5119	3483	3759	3997
1994–95	4790	15210	22032	13539	8130	6025	6198	3519	2261	3608
1995–96	4202	9376	20768	14382	10435	4916	6358	2463	3296	3202
1996–97	4103	14753	17103	16234	11582	6740	4141	2519	3709	3181
1997–98	6646	12656	16037	10825	10958	8917	6608	3636	3809	7219
1998–99	9963	25479	31512	28683	26959	17419	9221	3896	4965	8212
1999–00	9311	20838	22982	24131	20879	15027	5871	2949	6508	10690
2000–01	12575	18157	33306	30193	17036	10620	10820	2790	6737	5409
2001–02	7791	17886	26988	24002	20553	10999	6297	1003	1986	7710
2002–03	10304	21995	25182	20686	12736	9389	4784	737	2894	5630
2003–04	7696	13114	17867	20021	16070	12023	7404	2362	3547	9914
2004–05	7918	15341	23112	19223	14132	12943	5774	5022	3055	8597
2005–06	8542	14148	29026	23444	15196	6025	3756	1587	2551	8278
2006–07	7251	14621	16268	20503	14063	10397	1790	0	0	9701
2007–08	10014	16153	18491	16132	13119	7869	3799	0	0	3970
2008–09	6353	15883	18496	18127	10780	4940	3186	1262	965	2634
2009–10	3832	13312	17569	14036	11396	6119	4750	1774	2230	4525
2010–11	4384	9285	18935	10927	5674	5562	1974	814	3056	7751

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 9.2.2. Monthly catch numbers during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected.

Fishing year	Catch (number) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Apollo Bay Region</b>										
1978–79	24771	28393	18843	16185	11648	3652	2328	1085	212	5232
1979–80	27255	19648	18782	18351	6418	7490	4122	587	826	3548
1980–81	19974	20271	24411	15400	10896	7280	2930	518	843	8731
1981–82	30680	28456	24584	16516	8820	3894	1828	1154	799	7125
1982–83	28663	37419	15762	12960	7477	6334	2828	796	960	4063
1983–84	19960	25106	14524	15576	7759	4351	4019	390	1043	4316
1984–85	15134	18030	20850	19325	10772	5236	4163	1698	630	4479
1985–86	20710	17890	13863	11393	9787	2501	2619	677	627	6710
1986–87	11629	14434	13514	13696	14297	8379	2617	1069	535	3717
1987–88	5608	15729	14662	11605	11177	5592	3880	1077	978	3551
1988–89	6319	13411	14511	11943	10012	7085	3232	2006	1898	3221
1989–90	7907	16667	16332	11777	11664	3972	1824	1430	1425	4014
1990–91	6256	12971	12933	12092	7821	4351	4112	1283	1993	1935
1991–92	6987	12489	10361	13330	11714	6615	4259	1419	1174	3342
1992–93	7217	16223	18233	9589	13616	10495	3855	1175	2821	5150
1993–94	12846	21110	14605	21577	19614	7236	4093	3148	2888	4150
1994–95	10208	21060	18793	14837	11321	5762	5091	2310	1515	2806
1995–96	5966	14231	14101	14191	10514	4148	4943	1935	1865	3744
1996–97	4740	15119	13270	14772	10112	8549	4011	1469	2780	4248
1997–98	9555	24142	20074	12652	14660	6146	5097	2187	2133	5803
1998–99	8941	16799	15803	16941	16455	10063	4268	1440	2945	9409
1999–00	11750	19267	14254	19608	12900	12661	3654	1849	5289	12428
2000–01	16670	23033	24533	17486	11225	7825	7342	2056	3762	5704
2001–02	13294	21449	21018	14137	12266	9714	6151	299	2357	7321
2002–03	10871	20785	19451	14385	9121	8489	7256	522	1587	7119
2003–04	11358	23680	18249	16716	12584	9267	4580	1056	1902	6814
2004–05	10634	18336	15497	9701	8328	4686	3033	1415	727	4346
2005–06	6802	10346	11548	8763	5810	2048	1432	544	1025	7470
2006–07	6646	14541	11400	12112	8304	6901	2068	0	0	6318
2007–08	8578	12671	9805	9290	9853	4513	2375	0	0	3675
2008–09	5178	10756	10646	7067	7528	3955	2903	772	669	1938
2009–10	5702	9980	9345	8255	5897	3192	2663	932	1186	3691
2010–11	6692	8333	10719	6174	5781	3656	2282	1006	2751	6615
<b>Queenscliff Region</b>										
1978–79	9458	8991	12740	5709	4445	2958	1302	45	2179	15864
1979–80	9283	9261	10038	11430	3735	2747	1397	164	2334	13453
1980–81	13967	9700	12164	8870	5295	2236	922	21	1985	14150
1981–82	10334	9677	11895	9483	6213	2357	1060	123	1571	11333
1982–83	13339	11509	9981	9336	7652	2599	1099	238	2771	13640
1983–84	11173	12459	15752	16039	8615	4391	1510	337	2240	12869
1984–85	8937	8949	9309	6606	6114	1954	598	108	386	6535
1985–86	9008	7900	6948	6098	2684	1214	300	221	430	7511
1986–87	5840	5979	5813	5132	3416	1563	238	305	1254	7172
1987–88	4300	7198	8744	5733	5227	1785	279	76	1219	2845
1988–89	3162	6971	6762	4467	3262	1667	383	279	2924	5370
1989–90	4791	10406	11289	9122	7851	3974	1260	195	2532	6788
1990–91	5330	9304	9748	7420	4392	1694	413	108	3982	6068
1991–92	4798	8060	7237	8726	6075	2410	652	494	2755	5096
1992–93	3842	6910	7874	4632	3979	2415	1053	235	2888	3709
1993–94	6505	7559	6063	5292	4383	1219	738	233	2227	4671
1994–95	2602	5882	4935	4125	2353	1391	942	206	1982	3651
1995–96	2332	4165	4885	5379	4185	1446	616	357	2507	3240
1996–97	1490	3850	3426	4133	2120	1290	658	451	2167	4123
1997–98	3073	3891	5351	3545	2438	773	388	269	2506	4078
1998–99	2179	4880	4315	4473	3116	2310	724	455	3306	6556
1999–00	3881	7587	8599	8846	4474	2211	364	465	2886	8417
2000–01	6813	9153	6693	4937	2620	1555	983	533	4538	6218
2001–02	3827	6618	7034	3865	2709	2083	345	202	2461	5294
2002–03	3165	5606	5353	4290	2619	3103	1173	194	2467	5793
2003–04	3744	8376	5881	5028	2857	1339	1300	323	1862	8010
2004–05	4694	6468	8467	3531	2820	1969	797	235	1590	5318
2005–06	2630	6050	4864	3853	1423	345	503	185	1208	6046
2006–07	2622	4852	4938	4835	2922	1710	1084	132	1507	5218
2007–08	3327	5535	3301	1906	2217	1003	516	145	1376	3421
2008–09	1724	3700	4164	1312	2267	1008	237	116	1859	2750
2009–10	2137	3739	3737	2205	1654	1118	900	270	4195	12186
2010–11	4234	6321	5620	3253	1902	1359	1206	579	3393	10477

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 9.2.3. Monthly catch numbers during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected.

Fishing year	Catch (number) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>San Remo Region</b>										
1978–79	3425	4645	5771	4222	4913	2670	1547	555	676	3078
1979–80	4083	4833	4392	5478	4862	2570	705	112	722	2067
1980–81	4014	6044	6757	6170	4091	2927	1955	412	1209	3031
1981–82	3229	7404	7762	6770	5460	2348	709	577	1551	4315
1982–83	5242	8307	7632	9161	5079	3865	1612	1084	1879	5550
1983–84	4259	5901	4885	4865	3825	2855	1606	324	1261	3829
1984–85	3375	5827	5735	4919	4212	2707	866	251	888	2317
1985–86	3123	3835	5344	2653	3396	1715	1455	212	589	1312
1986–87	2617	3634	3194	3398	3047	1347	519	196	936	1739
1987–88	2009	3555	2528	2160	1610	885	459	406	669	548
1988–89	900	2116	3043	2424	1640	1148	389	114	595	790
1989–90	1640	3368	3126	2365	2320	1185	324	296	789	901
1990–91	594	1855	2291	1733	2073	1447	1274	441	1497	1997
1991–92	920	1486	1571	1840	1963	1443	1053	329	651	1343
1992–93	937	2771	3631	2455	3084	2167	898	527	1711	1882
1993–94	1551	3763	4049	4308	3495	1309	466	786	1274	1254
1994–95	1037	3785	4057	2759	2467	1894	945	514	1477	1063
1995–96	917	2250	2719	1778	1680	712	682	685	915	669
1996–97	483	1971	2181	1774	1874	1146	1214	839	1285	936
1997–98	1324	2575	3074	1929	2323	1758	1387	759	1335	1860
1998–99	938	2622	3444	2434	1532	1477	1033	724	1416	2348
1999–00	1363	2226	2942	2726	1868	1443	576	912	1318	1580
2000–01	1405	2173	2543	1830	1284	976	517	874	1670	1277
2001–02	866	2113	2242	1514	1323	800	548	102	875	1460
2002–03	649	1890	1395	1489	969	1151	489	134	693	1141
2003–04	869	1360	1294	873	1799	685	520	160	638	1445
2004–05	687	570	564	1004	1358	723	515	529	426	2858
2005–06	1463	2416	3813	2314	2457	403	340	491	1144	2221
2006–07	1193	3236	2146	2387	2035	1066	444	473	857	1839
2007–08	1109	2423	2437	2186	1740	950	566	193	1457	1526
2008–09	586	1702	2013	1615	1759	1200	907	461	570	996
2009–10	777	2633	2809	2705	1887	853	622	785	1546	2021
2010–11	1496	3999	4876	2473	1324	1493	1066	303	1728	3363
<b>Lakes Entrance Region</b>										
1978–79	9663	5383	4500	2828	1781	1116	0	0	47	2290
1979–80	2332	4223	3397	1483	668	916	600	0	468	683
1980–81	4962	4572	3836	2414	523	472	23	0	0	39
1981–82	3827	5833	1819	3262	475	636	0	0	40	110
1982–83	4843	3422	1293	584	0	0	0	12	0	0
1983–84	2760	4108	1667	341	12	208	60	0	0	0
1984–85	6990	3868	2022	1490	533	691	0	0	10	0
1985–86	6106	4896	1937	568	72	350	40	0	405	348
1986–87	3080	2919	1234	711	383	0	0	0	86	409
1987–88	1429	3423	2844	756	721	0	214	61	38	428
1988–89	2347	3708	2724	859	1138	679	0	0	83	150
1989–90	3295	2832	1540	774	550	335	4	8	215	464
1990–91	1746	2793	1490	1395	619	29	0	0	0	0
1991–92	1503	2108	921	112	26	0	0	0	0	0
1992–93	491	1587	1735	945	561	334	85	0	0	0
1993–94	1006	2100	2160	633	297	276	38	3	6	38
1994–95	1435	2822	2140	1568	743	928	276	83	29	110
1995–96	546	1314	1422	795	521	529	72	167	51	185
1996–97	896	2493	2025	1720	1392	540	190	444	387	296
1997–98	2450	4063	873	928	488	302	22	69	131	72
1998–99	840	2193	2153	1400	578	321	241	12	17	0
1999–00	1102	2035	725	953	568	427	245	63	125	199
2000–01	1709	2742	1516	900	341	493	682	7	0	0
2001–02	184	928	1005	165	658	88	85	26	0	270
2002–03	1081	1465	1008	426	147	1	0	0	0	1
2003–04	343	1123	504	196	3	0	0	42	43	209
2004–05	517	1124	876	204	452	180	28	3	0	2
2005–06	38	855	325	163	312	15	7	0	0	0
2006–07	288	812	407	371	237	11	0	0	0	0
2007–08	397	828	31	75	77	8	0	0	0	0
2008–09	44	455	136	43	74	9	0	0	6	0
2009–10	278	414	191	54	0	0	15	0	0	0
2010–11	143	278	601	257	163	224	0	0	0	0

Data source: Fisheries Victoria CandE Database (16 November 2011)



Table 10.1.1. Monthly mean mass per SRL during fishing years from 1978–79 to 2010–11 by zone

Data: non-screened and non-selected; SRL, southern rock lobster.

Fishing year	Mean mass per animal (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Western Zone</b>										
1978–79	0.856	0.980	0.994	1.026	1.016	1.082	1.109	1.164	1.094	1.101
1979–80	0.887	0.999	1.065	1.065	1.070	1.058	0.991	1.033	1.088	1.022
1980–81	0.881	0.988	1.020	1.003	1.040	1.075	1.149	1.163	1.086	1.059
1981–82	0.885	0.965	1.022	1.054	1.001	1.030	0.947	1.108	1.099	1.110
1982–83	0.902	1.011	1.026	1.010	1.020	1.071	1.085	1.050	1.041	1.112
1983–84	0.908	1.006	1.039	1.048	1.014	1.032	1.068	1.108	1.026	1.097
1984–85	0.893	0.984	1.045	1.089	1.058	1.042	1.055	1.095	1.096	1.105
1985–86	0.866	0.955	0.998	1.065	1.041	1.076	1.137	1.098	1.071	1.071
1986–87	0.890	0.947	1.001	1.017	1.052	1.066	1.052	1.008	1.016	1.058
1987–88	0.915	0.945	0.990	1.004	1.007	1.034	1.103	1.018	1.085	0.990
1988–89	0.916	0.912	0.990	0.976	0.960	0.802	1.022	1.018	0.962	0.965
1989–90	0.853	0.893	0.928	0.948	0.949	0.964	1.004	1.103	1.004	0.984
1990–91	0.851	0.915	0.947	0.956	0.944	0.981	0.965	0.985	0.949	0.915
1991–92	0.833	0.883	0.923	0.938	0.941	0.969	1.006	1.010	0.950	0.958
1992–93	0.831	0.912	0.936	0.941	0.951	0.968	1.021	1.005	0.964	0.970
1993–94	0.864	0.918	0.961	0.995	1.028	1.042	1.036	1.067	1.033	1.032
1994–95	0.876	0.934	0.965	0.999	1.031	0.997	1.019	1.115	1.035	1.018
1995–96	0.832	0.914	0.964	0.956	0.961	0.961	1.019	1.103	1.062	1.048
1996–97	0.836	0.913	0.964	0.982	1.007	1.018	1.072	1.070	1.042	0.995
1997–98	0.850	0.929	0.935	0.947	0.977	0.969	0.993	1.028	1.008	0.961
1998–99	0.823	0.881	0.926	0.922	0.924	0.915	0.954	0.936	0.912	0.913
1999–00	0.806	0.858	0.874	0.886	0.900	0.903	0.899	0.883	0.908	0.900
2000–01	0.827	0.856	0.877	0.880	0.874	0.899	0.932	0.944	0.925	0.914
2001–02	0.799	0.837	0.870	0.845	0.867	0.851	0.908	0.952	0.916	0.902
2002–03	0.792	0.847	0.881	0.874	0.860	0.883	0.906	0.943	0.903	0.928
2003–04	0.950	0.818	0.886	0.873	0.890	0.915	0.955	1.019	0.980	0.946
2004–05	0.804	0.862	0.900	0.908	0.915	0.975	0.954	1.046	0.939	0.941
2005–06	0.774	0.840	0.886	0.886	0.920	0.953	0.977	1.035	0.927	0.904
2006–07	0.768	0.822	0.865	0.860	0.876	0.907	0.901	0.861	0.861	0.891
2007–08	0.769	0.818	0.846	0.856	0.892	0.921	0.948	0.870	0.870	0.908
2008–09	0.767	0.840	0.869	0.880	0.919	0.921	0.992	1.063	0.930	0.903
2009–10	0.777	0.842	0.861	0.880	0.876	0.897	0.912	0.954	0.852	0.865
2010–11	0.757	0.809	0.840	0.823	0.828	0.844	0.871	0.855	0.854	0.841
<b>Eastern Zone</b>										
1978–79	1.111	1.125	1.177	1.148	1.135	1.171	1.316	1.467	1.145	1.055
1979–80	1.031	1.101	1.091	1.049	0.990	1.227	1.231	1.356	1.067	0.999
1980–81	1.023	1.114	1.090	1.120	1.138	1.169	1.365	1.821	1.154	0.969
1981–82	0.966	1.098	1.090	1.086	1.125	1.117	1.122	1.333	1.329	1.117
1982–83	1.017	1.108	1.058	1.067	1.109	1.183	1.356	1.379	1.165	1.070
1983–84	0.988	1.088	1.068	1.016	1.068	1.129	1.218	1.607	1.101	1.087
1984–85	1.065	1.189	1.179	1.154	1.189	1.281	1.469	1.575	1.576	1.194
1985–86	1.089	1.173	1.196	1.199	1.256	1.313	1.334	1.279	1.325	1.117
1986–87	1.124	1.151	1.209	1.211	1.200	1.155	1.459	1.675	1.256	1.116
1987–88	1.025	1.172	1.155	1.112	1.083	1.178	1.334	1.229	1.226	1.019
1988–89	1.021	1.053	1.070	1.039	1.088	1.192	1.165	1.420	1.010	0.996
1989–90	0.965	1.001	1.001	0.961	0.984	0.946	1.015	1.269	1.041	0.977
1990–91	0.964	1.017	1.052	0.982	0.992	1.080	1.061	1.282	0.924	0.911
1991–92	0.959	1.024	0.976	0.980	1.027	1.068	1.093	1.196	1.090	1.055
1992–93	0.959	1.027	1.039	1.033	1.134	1.197	1.176	1.511	1.270	1.215
1993–94	0.996	1.100	1.157	1.188	1.222	1.321	1.339	1.721	1.347	1.130
1994–95	1.127	1.190	1.233	1.262	1.246	1.315	1.526	1.520	1.286	1.152
1995–96	1.021	1.154	1.169	1.190	1.200	1.246	1.396	1.360	1.329	1.156
1996–97	1.093	1.183	1.272	1.245	1.303	1.330	1.384	1.407	1.276	1.205
1997–98	1.149	1.275	1.189	1.178	1.283	1.382	1.390	1.582	1.192	1.132
1998–99	1.126	1.208	1.201	1.119	1.106	1.189	1.280	1.499	1.171	1.049
1999–00	1.036	1.015	0.979	1.001	1.085	1.201	1.373	1.311	1.220	1.010
2000–01	0.969	1.038	1.088	1.079	1.124	1.182	1.112	1.333	1.163	1.145
2001–02	0.977	1.074	1.037	0.990	1.124	1.065	1.299	1.373	1.250	1.115
2002–03	0.987	1.109	1.105	1.091	1.065	1.080	1.270	1.525	1.220	1.048
2003–04	0.903	1.023	1.116	1.006	1.170	1.231	1.266	1.686	1.243	1.134
2004–05	0.930	1.111	1.044	1.101	1.180	1.221	1.460	1.836	1.351	1.173
2005–06	0.977	1.104	1.140	1.128	1.284	1.272	1.284	1.592	1.277	1.091
2006–07	0.950	1.062	1.109	1.096	1.192	1.135	1.270	1.681	1.360	1.183
2007–08	0.955	1.102	1.184	1.236	1.253	1.181	1.256	1.674	1.495	1.244
2008–09	0.959	1.197	1.190	1.307	1.280	1.287	1.549	1.702	1.350	1.246
2009–10	1.055	1.196	1.165	1.195	1.216	1.235	1.341	1.518	1.104	0.928
2010–11	0.866	1.093	1.083	0.966	1.056	1.076	1.331	1.196	1.146	1.012

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 10.2.1. Monthly mean mass per SRL during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; SRL, southern rock lobster.

Fishing year	Mean mass per animal (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Portland Region</b>										
1978–79	0.804	0.946	0.966	1.000	0.998	1.039	1.090	1.106	1.052	1.086
1979–80	0.818	0.983	1.076	1.032	1.033	1.003	0.900	0.897	1.055	1.003
1980–81	0.853	0.979	1.024	1.004	1.041	1.110	1.266	1.289	1.139	1.090
1981–82	0.862	0.919	1.029	1.067	0.997	1.019	0.928	1.072	1.110	1.136
1982–83	0.880	0.999	1.018	1.011	1.044	1.112	1.092	0.917	1.028	1.068
1983–84	0.880	0.943	1.013	1.026	0.993	1.062	1.070	0.956	0.986	1.069
1984–85	0.870	0.962	0.980	0.999	1.018	1.059	1.122	0.970	1.091	1.114
1985–86	0.834	0.891	0.954	1.019	0.965	1.096	1.208	1.273	1.069	1.049
1986–87	0.866	0.928	0.994	0.995	1.001	1.011	1.078	0.922	0.953	0.999
1987–88	0.934	0.936	0.977	0.945	0.981	1.048	1.130	0.995	1.131	0.999
1988–89	0.939	0.903	0.945	0.944	0.910	0.648	0.953	0.963	0.967	0.934
1989–90	0.831	0.856	0.911	0.925	0.915	0.932	0.963	1.099	0.982	0.969
1990–91	0.841	0.891	0.924	0.933	0.926	0.972	0.924	0.936	0.939	0.915
1991–92	0.812	0.873	0.896	0.918	0.917	0.930	0.966	0.981	0.909	0.921
1992–93	0.805	0.895	0.889	0.911	0.904	0.919	0.970	0.991	0.981	0.983
1993–94	0.820	0.891	0.947	0.993	0.985	0.993	1.027	1.060	1.018	0.998
1994–95	0.826	0.918	0.936	0.957	0.960	0.941	0.958	1.073	1.005	0.955
1995–96	0.813	0.888	0.926	0.913	0.927	0.942	0.950	1.006	0.974	0.960
1996–97	0.811	0.872	0.919	0.932	0.934	0.954	0.985	0.974	0.952	0.954
1997–98	0.802	0.876	0.901	0.904	0.921	0.912	0.936	0.936	0.907	0.913
1998–99	0.798	0.837	0.893	0.845	0.853	0.857	0.880	0.873	0.872	0.908
1999–00	0.785	0.818	0.833	0.848	0.863	0.853	0.856	0.859	0.864	0.858
2000–01	0.792	0.826	0.847	0.836	0.843	0.865	0.875	0.878	0.876	0.878
2001–02	0.780	0.818	0.849	0.837	0.811	0.825	0.875	0.929	0.884	0.864
2002–03	0.778	0.832	0.863	0.864	0.837	0.859	0.880	0.915	0.878	0.887
2003–04	1.068	0.820	0.871	0.851	0.868	0.893	0.918	0.971	0.950	0.971
2004–05	0.795	0.848	0.886	0.883	0.869	0.957	0.912	0.979	0.912	0.942
2005–06	0.763	0.822	0.862	0.857	0.873	0.884	0.914	0.959	0.884	0.855
2006–07	0.744	0.783	0.822	0.822	0.832	0.849	0.867	0.822	0.822	0.856
2007–08	0.744	0.779	0.806	0.819	0.853	0.856	0.874	0.828	0.828	0.895
2008–09	0.731	0.788	0.815	0.838	0.864	0.856	0.897	0.983	0.886	0.876
2009–10	0.739	0.810	0.821	0.825	0.832	0.839	0.851	0.956	0.826	0.855
2010–11	0.726	0.780	0.806	0.805	0.804	0.819	0.843	0.814	0.823	0.837
<b>Warrnambool Region</b>										
1978–79	0.851	1.030	1.013	1.049	1.025	1.091	1.128	1.187	1.193	1.142
1979–80	0.929	0.979	1.047	1.110	1.115	1.124	1.037	1.176	1.114	1.131
1980–81	0.937	0.981	1.019	0.962	1.013	1.055	1.071	0.972	0.973	1.036
1981–82	0.919	0.976	0.995	1.050	1.059	1.059	1.003	1.114	1.085	1.069
1982–83	0.883	1.063	1.057	1.055	1.019	1.057	1.068	1.082	1.100	1.350
1983–84	0.915	1.138	1.093	1.130	1.045	1.012	1.053	1.124	1.096	1.120
1984–85	0.921	0.993	1.110	1.186	1.139	1.030	1.018	1.065	1.103	1.108
1985–86	0.858	0.984	1.032	1.171	1.130	1.078	1.064	1.063	1.019	1.135
1986–87	0.888	0.999	1.056	1.032	1.067	1.116	1.083	1.033	1.098	1.181
1987–88	0.934	0.991	1.039	1.083	1.030	1.057	1.126	1.003	1.005	0.953
1988–89	0.831	0.924	1.043	1.006	1.003	1.012	1.019	1.047	0.985	1.008
1989–90	0.846	0.907	0.942	0.971	1.019	0.994	1.072	1.073	1.081	1.023
1990–91	0.869	0.892	0.958	0.994	0.989	1.030	1.053	1.039	0.985	0.921
1991–92	0.816	0.872	0.978	0.994	1.011	1.050	1.075	1.056	0.993	0.977
1992–93	0.805	0.944	1.000	0.998	1.023	1.038	1.118	1.025	0.955	0.969
1993–94	0.812	0.917	0.939	1.000	1.059	1.090	1.034	1.050	1.059	1.123
1994–95	0.863	0.906	0.992	1.028	1.090	1.067	1.180	1.191	1.131	1.225
1995–96	0.855	0.941	1.014	1.050	1.035	1.046	1.188	1.216	1.200	1.114
1996–97	0.863	0.949	0.999	1.041	1.108	1.062	1.138	1.230	1.224	1.094
1997–98	0.812	0.901	0.985	1.030	1.035	1.048	1.104	1.163	1.231	1.030
1998–99	0.829	0.922	0.932	0.992	0.989	0.999	1.066	1.007	0.945	0.980
1999–00	0.821	0.866	0.933	0.941	0.946	0.969	0.980	0.931	0.967	0.945
2000–01	0.851	0.919	0.893	0.915	0.934	0.944	0.972	0.963	0.965	0.960
2001–02	0.772	0.833	0.864	0.849	0.924	0.901	0.959	1.015	0.945	0.929
2002–03	0.768	0.854	0.903	0.891	0.900	0.928	0.931	1.033	0.927	0.984
2003–04	0.744	0.779	0.897	0.911	0.931	0.956	1.017	1.059	1.083	0.937
2004–05	0.767	0.876	0.935	0.933	0.992	1.030	1.058	1.085	0.990	0.956
2005–06	0.760	0.846	0.911	0.931	1.012	1.025	1.091	1.123	1.012	0.950
2006–07	0.786	0.856	0.903	0.896	0.953	1.011	1.046	0.926	0.926	0.959
2007–08	0.781	0.848	0.891	0.878	0.942	1.026	1.039	0.914	0.914	0.909
2008–09	0.770	0.869	0.896	0.909	0.957	0.981	1.029	1.120	1.027	0.953
2009–10	0.804	0.839	0.883	0.925	0.925	0.976	1.023	0.941	0.880	0.862
2010–11	0.756	0.830	0.888	0.872	0.895	0.924	0.951	0.907	0.907	0.836

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 10.2.2. Monthly mean mass per SRL during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; SRL, southern rock lobster.

Fishing year	Mean mass per animal (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Apollo Bay Region</b>										
1978–79	0.921	0.994	1.040	1.043	1.059	1.274	1.102	1.195	1.189	1.086
1979–80	0.953	1.038	1.070	1.076	1.123	1.097	1.001	1.158	1.215	1.007
1980–81	0.912	1.025	1.011	1.045	1.075	1.023	1.136	1.120	1.018	1.002
1981–82	0.903	1.033	1.033	1.025	0.907	1.004	0.874	1.146	1.054	1.061
1982–83	0.934	0.998	1.021	0.954	0.909	0.950	1.095	1.130	1.019	1.096
1983–84	0.945	1.013	1.027	0.989	1.021	1.000	1.095	1.167	1.103	1.155
1984–85	0.917	1.015	1.084	1.149	1.037	1.017	1.053	1.159	1.096	1.076
1985–86	0.922	1.048	1.061	1.022	1.122	0.983	1.151	0.991	1.184	1.073
1986–87	0.967	0.965	0.965	1.041	1.120	1.111	0.980	1.013	1.092	0.993
1987–88	0.847	0.937	0.956	1.054	1.043	0.964	1.051	1.073	1.123	1.004
1988–89	0.920	0.924	1.044	1.019	1.069	1.060	1.157	1.032	0.914	1.015
1989–90	0.907	0.969	0.962	0.987	0.989	1.078	1.055	1.137	1.009	0.992
1990–91	0.862	0.992	0.994	0.989	0.975	0.939	0.965	0.987	0.919	0.900
1991–92	0.912	0.931	0.950	0.951	0.934	1.002	1.042	0.982	1.111	1.059
1992–93	0.900	0.933	0.982	0.955	0.967	1.023	1.040	0.991	0.938	0.943
1993–94	0.966	0.975	1.022	0.994	1.079	1.123	1.060	1.100	1.047	1.051
1994–95	0.976	0.995	1.011	1.086	1.198	1.120	1.040	1.104	1.090	1.098
1995–96	0.891	0.988	1.029	1.011	1.036	0.960	1.047	1.171	1.238	1.283
1996–97	0.927	1.013	1.064	1.050	1.108	1.146	1.323	1.214	1.097	1.067
1997–98	0.987	1.072	1.004	1.020	1.079	1.100	1.016	1.070	1.086	1.040
1998–99	0.894	0.955	1.017	0.976	0.987	0.970	1.042	1.017	1.023	0.864
1999–00	0.850	0.954	0.945	0.924	0.954	0.956	1.014	0.892	0.959	0.948
2000–01	0.879	0.880	0.931	0.954	0.896	0.951	1.014	1.080	1.028	0.977
2001–02	0.844	0.880	0.933	0.861	0.898	0.889	0.964	0.968	1.001	0.977
2002–03	0.852	0.874	0.906	0.881	0.872	0.911	0.985	1.063	0.981	0.961
2003–04	0.799	0.836	0.912	0.893	0.907	0.931	1.016	1.071	0.912	0.880
2004–05	0.853	0.885	0.890	0.942	0.958	0.927	1.019	1.062	0.931	0.903
2005–06	0.827	0.904	0.936	0.903	0.931	1.109	1.012	1.067	1.006	0.977
2006–07	0.820	0.896	0.959	0.920	0.907	0.938	0.984	0.919	0.919	0.927
2007–08	0.823	0.887	0.920	0.930	0.928	0.970	1.097	0.938	0.938	0.948
2008–09	0.841	0.925	0.969	0.917	0.986	1.015	1.182	1.130	1.013	0.973
2009–10	0.858	0.922	0.914	0.930	0.911	0.971	0.979	0.969	0.963	0.900
2010–11	0.828	0.884	0.856	0.799	0.865	0.849	0.896	0.919	0.919	0.862
<b>Queenscliff Region</b>										
1978–79	1.065	1.007	1.064	0.976	0.971	1.055	1.052	1.378	0.983	0.989
1979–80	0.977	1.034	0.990	0.901	0.961	0.957	1.150	1.208	0.877	0.913
1980–81	0.984	1.017	0.988	0.947	0.989	0.998	1.156	1.270	0.865	0.916
1981–82	0.848	0.906	0.917	0.967	1.012	1.054	0.899	1.043	1.004	0.985
1982–83	0.923	0.998	0.969	0.931	1.013	1.038	1.343	1.267	0.938	0.984
1983–84	0.913	0.989	0.992	0.970	0.981	1.021	1.026	1.643	0.987	0.985
1984–85	1.001	1.108	1.126	1.091	1.145	1.218	1.185	1.527	1.009	1.083
1985–86	0.975	1.120	1.110	1.131	1.120	1.192	1.457	1.131	1.125	1.025
1986–87	0.995	1.016	1.134	1.110	1.114	1.157	1.363	1.305	1.144	1.033
1987–88	0.907	1.008	1.107	1.135	1.081	1.151	1.394	1.059	1.087	0.973
1988–89	0.893	1.011	0.973	0.987	1.044	1.068	1.060	1.264	0.919	0.934
1989–90	0.840	0.973	0.968	0.908	0.920	0.927	0.989	0.999	0.929	0.923
1990–91	0.890	0.965	0.993	0.938	0.916	0.995	0.900	0.912	0.869	0.834
1991–92	0.845	0.933	0.918	0.946	0.980	1.030	1.021	1.200	1.019	0.946
1992–93	0.887	0.911	0.942	0.917	0.957	1.128	1.026	1.345	1.142	1.082
1993–94	0.889	1.042	1.058	1.045	1.112	1.187	1.269	1.456	1.149	0.995
1994–95	1.026	1.123	1.098	1.148	1.145	1.098	1.315	1.470	1.026	1.017
1995–96	0.933	1.079	1.095	1.158	1.157	1.286	1.402	1.187	1.200	1.074
1996–97	1.006	1.095	1.267	1.230	1.163	1.204	1.140	1.013	1.036	1.099
1997–98	1.027	1.199	1.078	1.062	1.131	1.163	0.982	1.351	1.016	1.011
1998–99	1.041	1.098	1.078	0.999	0.993	1.084	1.172	1.241	0.990	0.930
1999–00	0.955	0.913	0.899	0.895	0.961	1.037	1.096	1.033	1.019	0.911
2000–01	0.887	0.941	0.974	0.963	0.972	0.992	1.035	1.012	1.049	1.074
2001–02	0.925	1.002	0.945	0.912	0.938	0.913	1.090	1.197	1.108	0.985
2002–03	0.912	1.068	1.026	1.034	0.988	0.989	1.214	1.344	1.074	0.945
2003–04	0.836	0.959	1.038	0.957	0.988	1.113	1.136	1.451	1.076	1.025
2004–05	0.882	1.082	0.985	1.025	1.041	1.122	1.403	1.787	1.270	1.026
2005–06	0.853	1.022	1.054	1.038	1.120	1.087	1.107	1.302	1.138	0.965
2006–07	0.834	0.965	1.022	1.016	1.029	1.020	1.310	1.442	1.212	1.055
2007–08	0.869	1.017	1.094	1.164	1.104	1.017	1.158	1.242	1.159	0.989
2008–09	0.870	1.068	1.100	1.242	1.233	1.169	1.541	1.253	1.216	1.016
2009–10	0.973	1.104	1.081	1.132	1.080	1.100	1.103	1.266	0.968	0.851
2010–11	0.777	1.007	0.936	0.868	0.884	0.893	1.237	1.109	0.937	0.859

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 10.2.3. Monthly mean mass per SRL during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; SRL, southern rock lobster.

Fishing year	Mean mass per animal (kg) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>San Remo Region</b>										
1978–79	1.236	1.299	1.373	1.294	1.310	1.367	1.539	1.474	1.641	1.447
1979–80	1.147	1.158	1.286	1.256	0.981	1.488	1.403	1.574	1.600	1.459
1980–81	1.074	1.269	1.271	1.334	1.335	1.269	1.464	1.850	1.628	1.220
1981–82	1.088	1.314	1.317	1.290	1.265	1.193	1.457	1.395	1.666	1.468
1982–83	1.142	1.214	1.160	1.199	1.254	1.278	1.365	1.405	1.500	1.283
1983–84	1.111	1.150	1.189	1.129	1.262	1.271	1.396	1.569	1.304	1.428
1984–85	1.083	1.284	1.206	1.216	1.252	1.404	1.665	1.595	1.824	1.507
1985–86	1.216	1.229	1.220	1.345	1.363	1.413	1.296	1.434	1.633	1.602
1986–87	1.244	1.203	1.311	1.327	1.301	1.152	1.502	2.252	1.366	1.392
1987–88	1.173	1.395	1.328	1.030	1.116	1.232	1.432	1.234	1.452	1.335
1988–89	1.157	1.115	1.136	1.108	1.187	1.259	1.269	1.804	1.428	1.422
1989–90	1.210	1.078	1.120	1.115	1.146	0.967	1.113	1.440	1.264	1.300
1990–91	1.053	1.034	1.138	1.134	1.160	1.179	1.113	1.373	1.070	1.146
1991–92	1.188	1.162	0.997	1.129	1.167	1.132	1.137	1.190	1.393	1.468
1992–93	1.107	1.124	1.101	1.163	1.311	1.289	1.318	1.585	1.485	1.476
1993–94	1.291	1.252	1.324	1.368	1.358	1.456	1.459	1.796	1.690	1.634
1994–95	1.361	1.324	1.382	1.391	1.314	1.410	1.725	1.572	1.640	1.617
1995–96	1.216	1.290	1.305	1.313	1.389	1.466	1.421	1.511	1.694	1.584
1996–97	1.281	1.375	1.353	1.431	1.426	1.503	1.559	1.739	1.710	1.657
1997–98	1.275	1.400	1.385	1.389	1.456	1.510	1.504	1.706	1.516	1.393
1998–99	1.296	1.371	1.283	1.185	1.329	1.367	1.394	1.669	1.592	1.381
1999–00	1.207	1.239	1.174	1.295	1.361	1.426	1.556	1.468	1.663	1.498
2000–01	1.190	1.263	1.306	1.332	1.453	1.527	1.505	1.531	1.475	1.490
2001–02	1.218	1.296	1.315	1.185	1.412	1.451	1.461	1.781	1.648	1.569
2002–03	1.085	1.198	1.268	1.212	1.252	1.326	1.404	1.787	1.740	1.573
2003–04	1.024	1.295	1.396	1.244	1.457	1.462	1.591	2.185	1.709	1.685
2004–05	1.218	1.307	1.527	1.304	1.463	1.463	1.557	1.860	1.652	1.446
2005–06	1.190	1.266	1.250	1.254	1.372	1.438	1.535	1.702	1.424	1.435
2006–07	1.188	1.208	1.249	1.255	1.400	1.324	1.171	1.747	1.621	1.547
2007–08	1.140	1.222	1.310	1.285	1.426	1.350	1.345	1.998	1.814	1.814
2008–09	1.187	1.348	1.344	1.352	1.321	1.379	1.551	1.815	1.775	1.882
2009–10	1.227	1.287	1.248	1.241	1.334	1.412	1.672	1.604	1.473	1.390
2010–11	1.070	1.194	1.206	1.053	1.204	1.101	1.438	1.364	1.558	1.488
<b>Lakes Entrance Region</b>										
1978–79	1.112	1.172	1.245	1.275	1.063	1.010	1.174	1.174	1.532	0.986
1979–80	1.041	1.182	1.137	1.419	1.222	1.308	1.217	1.225	1.194	1.307
1980–81	1.091	1.115	1.097	1.207	1.076	1.358	1.304	1.102	1.102	0.564
1981–82	1.181	1.139	1.251	1.005	0.992	1.069	1.090	1.090	1.050	1.036
1982–83	1.143	1.222	1.140	1.187	1.189	1.189	1.189	1.250	1.189	1.189
1983–84	1.104	1.296	1.430	1.540	1.500	1.466	1.250	1.370	1.370	1.370
1984–85	1.137	1.235	1.343	1.223	1.201	0.976	1.216	1.216	1.400	1.216
1985–86	1.193	1.214	1.440	1.250	1.250	1.246	1.825	1.309	1.089	1.279
1986–87	1.267	1.365	1.298	1.381	1.157	1.363	1.363	1.363	1.686	1.390
1987–88	1.174	1.284	1.149	1.169	1.018	1.206	1.046	1.410	1.684	0.920
1988–89	1.141	1.095	1.237	1.116	1.072	1.384	1.149	1.149	1.202	0.947
1989–90	1.025	1.011	1.001	1.115	1.207	1.094	1.250	1.500	1.544	1.129
1990–91	1.161	1.178	1.307	1.025	0.973	1.069	1.119	1.119	1.119	1.119
1991–92	1.186	1.275	1.389	1.179	1.269	1.259	1.259	1.259	1.259	1.259
1992–93	1.246	1.367	1.344	1.267	1.421	1.090	1.547	1.326	1.326	1.326
1993–94	1.227	1.038	1.119	1.160	1.237	1.275	1.235	2.667	2.333	1.164
1994–95	1.140	1.150	1.259	1.336	1.342	1.447	1.563	1.325	1.034	1.118
1995–96	1.072	1.160	1.160	1.132	0.941	0.841	1.111	1.108	1.137	1.054
1996–97	1.138	1.166	1.195	1.088	1.349	1.264	1.111	1.181	1.175	1.248
1997–98	1.235	1.268	1.176	1.181	1.221	1.196	1.409	1.123	1.252	1.243
1998–99	1.159	1.259	1.316	1.389	1.129	1.121	1.118	1.000	1.235	1.192
1999–00	1.106	1.151	1.136	1.140	1.151	1.292	1.355	1.087	1.178	1.329
2000–01	1.114	1.181	1.228	1.200	1.058	1.099	0.923	1.043	1.106	1.106
2001–02	0.935	1.083	1.065	1.024	1.313	1.152	1.101	1.139	1.114	1.212
2002–03	1.146	1.153	1.300	1.237	1.218	1.000	1.322	1.322	1.322	2.200
2003–04	1.337	1.167	1.312	1.187	2.033	1.458	1.458	1.590	1.560	1.478
2004–05	0.989	1.182	1.300	1.431	1.196	1.329	1.307	1.533	1.252	1.000
2005–06	1.289	1.229	1.147	1.469	1.340	1.067	1.771	1.330	1.330	1.330
2006–07	1.021	1.053	1.417	1.116	1.418	0.809	1.139	1.139	1.139	1.139
2007–08	1.163	1.318	0.977	1.619	1.638	1.625	1.390	1.390	1.390	1.390
2008–09	1.386	1.687	1.669	1.614	1.745	2.156	1.837	1.837	2.600	1.837
2009–10	1.209	1.443	1.591	1.406	1.498	1.498	1.840	1.498	1.498	1.498
2010–11	1.349	1.578	1.455	1.371	1.867	2.017	1.606	1.606	1.606	1.606

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 11.1.1. Monthly nominal CPUE during fishing years from 1978–79 to 2010–11 by zone

Data: non-screened and non-selected; CPUE, catch per unit effort.

Fishing year	Mean nominal CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Western Zone</b>										
1978–79	0.807	1.117	0.967	0.989	0.803	0.613	0.575	0.457	0.360	0.543
1979–80	0.836	0.968	1.072	0.907	0.808	0.724	0.484	0.462	0.418	0.503
1980–81	0.860	1.025	1.012	0.966	0.785	0.693	0.509	0.436	0.379	0.471
1981–82	0.826	0.988	1.022	0.919	0.796	0.617	0.390	0.427	0.404	0.497
1982–83	0.895	1.085	0.921	0.884	0.723	0.669	0.413	0.294	0.431	0.496
1983–84	0.755	0.971	0.988	0.873	0.650	0.524	0.478	0.297	0.466	0.563
1984–85	0.685	0.789	0.891	0.997	0.754	0.541	0.440	0.398	0.342	0.446
1985–86	0.688	0.693	0.739	0.797	0.731	0.525	0.442	0.253	0.300	0.459
1986–87	0.635	0.720	0.710	0.744	0.731	0.557	0.400	0.319	0.312	0.390
1987–88	0.697	0.704	0.817	0.742	0.659	0.518	0.380	0.293	0.264	0.380
1988–89	0.559	0.668	0.683	0.592	0.603	0.470	0.373	0.280	0.291	0.345
1989–90	0.602	0.665	0.694	0.661	0.590	0.459	0.341	0.281	0.310	0.318
1990–91	0.497	0.575	0.622	0.618	0.564	0.442	0.342	0.252	0.280	0.300
1991–92	0.590	0.648	0.754	0.740	0.663	0.551	0.417	0.299	0.252	0.345
1992–93	0.548	0.645	0.748	0.634	0.631	0.542	0.436	0.263	0.269	0.305
1993–94	0.739	0.788	0.702	0.822	0.775	0.543	0.397	0.302	0.270	0.317
1994–95	0.602	0.771	0.796	0.713	0.624	0.467	0.368	0.271	0.241	0.304
1995–96	0.560	0.734	0.829	0.788	0.665	0.427	0.385	0.287	0.265	0.279
1996–97	0.572	0.662	0.714	0.730	0.592	0.465	0.349	0.257	0.251	0.293
1997–98	0.615	0.832	0.806	0.701	0.621	0.510	0.369	0.275	0.259	0.354
1998–99	0.696	0.833	0.800	0.765	0.732	0.594	0.394	0.276	0.315	0.379
1999–00	0.766	0.810	0.804	0.802	0.650	0.528	0.383	0.227	0.316	0.399
2000–01	0.834	0.813	0.854	0.783	0.598	0.473	0.392	0.256	0.309	0.356
2001–02	0.766	0.786	0.914	0.862	0.758	0.573	0.447	0.264	0.285	0.385
2002–03	0.827	0.910	1.003	0.847	0.739	0.684	0.511	0.311	0.320	0.426
2003–04	0.935	0.869	0.901	0.963	0.836	0.729	0.530	0.361	0.346	0.382
2004–05	0.826	0.854	0.820	0.807	0.709	0.625	0.427	0.293	0.259	0.349
2005–06	0.659	0.631	0.778	0.669	0.532	0.431	0.268	0.204	0.290	0.319
2006–07	0.554	0.613	0.608	0.685	0.563	0.448	0.289	0.000	0.000	0.321
2007–08	0.610	0.535	0.582	0.551	0.502	0.360	0.279	0.000	0.000	0.225
2008–09	0.489	0.590	0.539	0.506	0.446	0.311	0.265	0.251	0.233	0.222
2009–10	0.449	0.470	0.487	0.502	0.406	0.330	0.275	0.205	0.219	0.262
2010–11	0.550	0.479	0.573	0.537	0.482	0.381	0.303	0.250	0.366	0.327
<b>Eastern Zone</b>										
1978–79	0.777	0.748	0.966	0.691	0.551	0.535	0.567	0.414	0.464	0.631
1979–80	0.695	0.847	0.804	0.751	0.549	0.482	0.590	0.471	0.533	0.588
1980–81	0.883	0.864	0.866	0.789	0.563	0.558	0.568	0.354	0.439	0.542
1981–82	0.695	0.784	0.748	0.703	0.578	0.530	0.543	0.331	0.450	0.534
1982–83	0.939	0.858	0.818	0.811	0.606	0.526	0.534	0.429	0.437	0.562
1983–84	0.630	0.728	0.765	0.676	0.552	0.521	0.402	0.315	0.311	0.463
1984–85	0.641	0.680	0.668	0.708	0.576	0.506	0.406	0.283	0.316	0.406
1985–86	0.704	0.643	0.627	0.556	0.517	0.532	0.422	0.289	0.390	0.397
1986–87	0.657	0.643	0.557	0.555	0.514	0.378	0.389	0.429	0.484	0.443
1987–88	0.570	0.666	0.693	0.536	0.536	0.483	0.532	0.324	0.291	0.333
1988–89	0.640	0.568	0.550	0.459	0.443	0.475	0.163	0.269	0.302	0.383
1989–90	0.629	0.502	0.511	0.473	0.411	0.282	0.207	0.185	0.307	0.412
1990–91	0.534	0.504	0.492	0.502	0.395	0.281	0.252	0.236	0.333	0.417
1991–92	0.515	0.426	0.397	0.442	0.361	0.323	0.263	0.229	0.208	0.306
1992–93	0.410	0.436	0.386	0.324	0.325	0.282	0.292	0.238	0.211	0.216
1993–94	0.453	0.400	0.377	0.351	0.303	0.199	0.242	0.178	0.202	0.218
1994–95	0.305	0.375	0.353	0.331	0.288	0.248	0.339	0.245	0.194	0.193
1995–96	0.287	0.359	0.328	0.320	0.310	0.394	0.330	0.182	0.171	0.162
1996–97	0.252	0.328	0.337	0.333	0.362	0.325	0.239	0.196	0.204	0.287
1997–98	0.451	0.450	0.363	0.300	0.318	0.273	0.213	0.188	0.190	0.252
1998–99	0.379	0.439	0.410	0.358	0.259	0.276	0.228	0.189	0.227	0.315
1999–00	0.376	0.429	0.414	0.409	0.290	0.270	0.205	0.176	0.213	0.313
2000–01	0.486	0.439	0.366	0.351	0.255	0.280	0.218	0.220	0.268	0.328
2001–02	0.409	0.444	0.474	0.405	0.370	0.315	0.227	0.180	0.261	0.310
2002–03	0.455	0.502	0.458	0.421	0.299	0.404	0.270	0.302	0.276	0.445
2003–04	0.557	0.528	0.465	0.435	0.369	0.366	0.314	0.286	0.279	0.408
2004–05	0.526	0.565	0.504	0.400	0.393	0.382	0.294	0.377	0.285	0.340
2005–06	0.476	0.484	0.567	0.427	0.411	0.318	0.323	0.304	0.321	0.346
2006–07	0.437	0.496	0.522	0.495	0.406	0.315	0.303	0.250	0.252	0.321
2007–08	0.425	0.451	0.422	0.381	0.344	0.369	0.214	0.209	0.357	0.359
2008–09	0.402	0.467	0.433	0.391	0.388	0.330	0.301	0.242	0.312	0.266
2009–10	0.428	0.455	0.436	0.413	0.313	0.234	0.265	0.253	0.339	0.496
2010–11	0.532	0.536	0.538	0.432	0.390	0.406	0.341	0.182	0.386	0.456

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 11.2.1. Monthly nominal CPUE during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; CPUE, catch per unit effort.

Fishing year	Mean nominal CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Portland Region</b>										
1978–79	0.673	0.962	0.895	0.775	0.714	0.539	0.486	0.408	0.369	0.479
1979–80	0.681	0.752	0.861	0.716	0.701	0.501	0.320	0.421	0.340	0.506
1980–81	0.834	1.003	0.946	0.950	0.677	0.567	0.413	0.510	0.365	0.404
1981–82	0.701	0.843	0.963	0.836	0.791	0.593	0.393	0.398	0.393	0.487
1982–83	0.776	0.876	0.866	0.850	0.753	0.702	0.408	0.214	0.423	0.418
1983–84	0.651	0.766	0.820	0.755	0.599	0.502	0.386	0.235	0.464	0.497
1984–85	0.594	0.723	0.747	0.854	0.672	0.486	0.338	0.666	0.381	0.403
1985–86	0.644	0.621	0.717	0.725	0.699	0.546	0.518	0.334	0.353	0.420
1986–87	0.643	0.742	0.680	0.671	0.660	0.474	0.363	0.219	0.282	0.342
1987–88	0.695	0.710	0.885	0.713	0.612	0.512	0.326	0.466	0.276	0.394
1988–89	0.513	0.713	0.632	0.552	0.578	0.425	0.379	0.264	0.279	0.366
1989–90	0.621	0.656	0.700	0.657	0.567	0.459	0.390	0.243	0.311	0.264
1990–91	0.459	0.506	0.574	0.571	0.568	0.411	0.306	0.215	0.270	0.307
1991–92	0.611	0.668	0.762	0.733	0.625	0.488	0.391	0.256	0.226	0.288
1992–93	0.467	0.557	0.655	0.534	0.501	0.450	0.360	0.191	0.211	0.244
1993–94	0.631	0.698	0.638	0.683	0.634	0.459	0.343	0.237	0.229	0.288
1994–95	0.517	0.740	0.762	0.705	0.603	0.420	0.323	0.207	0.220	0.283
1995–96	0.568	0.709	0.764	0.710	0.634	0.405	0.318	0.201	0.214	0.231
1996–97	0.591	0.631	0.664	0.654	0.533	0.412	0.316	0.231	0.222	0.275
1997–98	0.527	0.761	0.809	0.674	0.557	0.462	0.350	0.241	0.256	0.354
1998–99	0.656	0.734	0.769	0.655	0.625	0.550	0.350	0.250	0.271	0.322
1999–00	0.757	0.739	0.771	0.744	0.598	0.454	0.345	0.228	0.267	0.315
2000–01	0.749	0.779	0.776	0.697	0.557	0.417	0.325	0.246	0.261	0.332
2001–02	0.681	0.788	0.870	0.812	0.681	0.562	0.448	0.302	0.290	0.376
2002–03	0.920	0.932	0.984	0.859	0.750	0.747	0.544	0.285	0.322	0.371
2003–04	1.083	0.882	0.917	1.002	0.914	0.786	0.525	0.287	0.321	0.372
2004–05	0.936	0.919	0.947	0.978	0.779	0.702	0.428	0.264	0.282	0.345
2005–06	0.612	0.589	0.688	0.617	0.499	0.375	0.256	0.169	0.266	0.269
2006–07	0.499	0.513	0.524	0.584	0.496	0.383	0.287	0.000	0.000	0.276
2007–08	0.592	0.470	0.557	0.457	0.417	0.299	0.219	0.000	0.000	0.207
2008–09	0.455	0.507	0.465	0.384	0.364	0.286	0.196	0.186	0.203	0.209
2009–10	0.422	0.406	0.434	0.404	0.342	0.334	0.277	0.233	0.206	0.240
2010–11	0.483	0.459	0.549	0.521	0.429	0.355	0.282	0.233	0.316	0.284
<b>Warrnambool Region</b>										
1978–79	0.536	0.977	0.949	1.059	0.791	0.618	0.562	0.411	0.324	0.472
1979–80	0.564	0.815	1.186	1.032	0.868	0.775	0.427	0.499	0.480	0.419
1980–81	0.613	0.792	0.877	0.814	0.704	0.666	0.477	0.246	0.344	0.374
1981–82	0.535	0.739	0.916	0.959	0.807	0.625	0.339	0.384	0.386	0.459
1982–83	0.637	0.855	0.823	0.896	0.680	0.567	0.326	0.324	0.402	0.843
1983–84	0.593	1.035	1.237	1.053	0.728	0.529	0.448	0.307	0.358	0.627
1984–85	0.611	0.678	0.973	1.169	0.817	0.570	0.390	0.248	0.317	0.459
1985–86	0.547	0.589	0.665	0.806	0.695	0.481	0.323	0.239	0.168	0.404
1986–87	0.467	0.546	0.755	0.747	0.657	0.545	0.390	0.305	0.329	0.431
1987–88	0.680	0.527	0.685	0.701	0.639	0.482	0.345	0.170	0.220	0.281
1988–89	0.401	0.464	0.578	0.539	0.475	0.393	0.298	0.230	0.301	0.285
1989–90	0.334	0.447	0.534	0.555	0.532	0.394	0.263	0.277	0.281	0.368
1990–91	0.381	0.510	0.573	0.538	0.523	0.483	0.366	0.294	0.293	0.252
1991–92	0.372	0.515	0.710	0.617	0.700	0.658	0.419	0.316	0.285	0.367
1992–93	0.403	0.587	0.797	0.757	0.762	0.606	0.493	0.330	0.312	0.328
1993–94	0.505	0.583	0.654	0.905	0.954	0.606	0.387	0.307	0.304	0.305
1994–95	0.471	0.612	0.741	0.618	0.515	0.453	0.394	0.297	0.236	0.328
1995–96	0.456	0.611	0.833	0.892	0.637	0.433	0.494	0.333	0.353	0.321
1996–97	0.485	0.612	0.767	0.781	0.656	0.451	0.329	0.288	0.254	0.254
1997–98	0.519	0.612	0.679	0.610	0.624	0.531	0.338	0.276	0.246	0.311
1998–99	0.652	0.925	0.814	0.859	0.827	0.629	0.419	0.287	0.340	0.381
1999–00	0.600	0.729	0.793	0.793	0.652	0.582	0.398	0.209	0.330	0.418
2000–01	0.705	0.728	0.851	0.790	0.599	0.531	0.420	0.241	0.343	0.333
2001–02	0.576	0.590	0.793	0.794	0.731	0.541	0.351	0.216	0.191	0.319
2002–03	0.550	0.656	0.866	0.676	0.623	0.489	0.305	0.386	0.263	0.380
2003–04	0.559	0.520	0.693	0.789	0.654	0.596	0.518	0.374	0.346	0.376
2004–05	0.518	0.659	0.676	0.698	0.723	0.555	0.378	0.268	0.214	0.303
2005–06	0.597	0.589	0.869	0.716	0.575	0.415	0.258	0.217	0.267	0.272
2006–07	0.518	0.567	0.617	0.681	0.542	0.460	0.221	0.000	0.000	0.359
2007–08	0.534	0.535	0.587	0.623	0.554	0.416	0.312	0.000	0.000	0.175
2008–09	0.435	0.587	0.574	0.586	0.471	0.280	0.265	0.331	0.282	0.241
2009–10	0.352	0.467	0.506	0.606	0.467	0.318	0.265	0.163	0.210	0.261
2010–11	0.541	0.491	0.589	0.563	0.608	0.409	0.287	0.295	0.417	0.375

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 11.2.2. Monthly nominal CPUE during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; CPUE, catch per unit effort.

Fishing year	Mean nominal CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>Apollo Bay Region</b>										
1978–79	1.277	1.562	1.186	1.411	1.135	0.960	0.857	0.663	0.456	1.114
1979–80	1.396	1.704	1.390	1.212	1.122	1.274	0.806	0.498	0.847	0.668
1980–81	1.265	1.387	1.305	1.195	1.331	1.189	0.785	0.716	0.585	0.798
1981–82	1.252	1.460	1.278	1.068	0.791	0.687	0.533	0.603	0.509	0.558
1982–83	1.329	1.661	1.214	0.977	0.674	0.734	0.637	0.345	0.569	0.544
1983–84	1.147	1.412	1.168	0.933	0.672	0.565	0.622	0.297	0.621	0.716
1984–85	0.964	1.026	1.107	1.096	0.866	0.652	0.646	0.535	0.300	0.573
1985–86	0.927	0.952	0.877	0.973	0.869	0.553	0.554	0.216	0.481	0.632
1986–87	0.775	0.828	0.732	0.900	1.006	0.780	0.464	0.452	0.399	0.430
1987–88	0.722	0.911	0.863	0.875	0.826	0.591	0.491	0.330	0.350	0.476
1988–89	0.892	0.829	0.948	0.772	0.870	0.720	0.495	0.360	0.308	0.363
1989–90	0.793	0.908	0.855	0.795	0.741	0.557	0.365	0.340	0.337	0.454
1990–91	0.701	0.872	0.843	0.862	0.591	0.534	0.408	0.265	0.300	0.357
1991–92	0.781	0.731	0.788	0.905	0.758	0.678	0.505	0.426	0.343	0.556
1992–93	0.900	0.988	0.979	0.925	0.934	0.791	0.732	0.453	0.441	0.489
1993–94	1.161	1.222	0.963	1.101	0.983	0.763	0.605	0.520	0.381	0.428
1994–95	0.880	0.985	0.957	0.828	0.798	0.677	0.543	0.520	0.441	0.375
1995–96	0.630	0.936	1.079	0.997	0.843	0.542	0.542	0.508	0.390	0.460
1996–97	0.588	0.815	0.815	0.926	0.729	0.635	0.516	0.312	0.353	0.403
1997–98	0.896	1.148	0.897	0.872	0.821	0.700	0.478	0.417	0.294	0.411
1998–99	0.868	1.032	0.863	0.883	0.863	0.680	0.543	0.347	0.478	0.558
1999–00	0.962	1.118	0.939	0.977	0.828	0.683	0.550	0.258	0.465	0.599
2000–01	1.172	0.994	1.085	1.045	0.739	0.590	0.550	0.303	0.434	0.453
2001–02	1.086	0.988	1.158	1.079	0.959	0.635	0.569	0.233	0.395	0.477
2002–03	0.949	1.202	1.240	1.063	0.886	0.841	0.659	0.312	0.447	0.568
2003–04	0.982	1.125	1.103	1.068	0.877	0.757	0.562	0.566	0.442	0.414
2004–05	0.910	0.912	0.785	0.695	0.588	0.534	0.496	0.403	0.318	0.447
2005–06	0.840	0.779	0.886	0.738	0.555	0.703	0.334	0.298	0.523	0.488
2006–07	0.710	0.883	0.794	0.912	0.758	0.601	0.371	0.000	0.000	0.419
2007–08	0.727	0.661	0.638	0.690	0.635	0.469	0.467	0.000	0.000	0.358
2008–09	0.629	0.763	0.633	0.628	0.571	0.382	0.372	0.252	0.311	0.248
2009–10	0.615	0.614	0.547	0.536	0.453	0.343	0.286	0.196	0.340	0.340
2010–11	0.708	0.522	0.605	0.537	0.548	0.449	0.386	0.252	0.490	0.412
<b>Queenscliff Region</b>										
1978–79	0.612	0.669	0.977	0.586	0.414	0.469	0.509	0.211	0.448	0.691
1979–80	0.685	0.793	0.771	0.697	0.485	0.336	0.713	0.260	0.488	0.610
1980–81	0.895	0.761	0.832	0.718	0.479	0.438	0.451	0.096	0.342	0.538
1981–82	0.614	0.545	0.647	0.572	0.469	0.502	0.632	0.216	0.296	0.473
1982–83	0.836	0.695	0.747	0.733	0.563	0.466	0.500	0.235	0.348	0.602
1983–84	0.637	0.646	0.773	0.699	0.513	0.534	0.369	0.257	0.263	0.451
1984–85	0.528	0.579	0.622	0.595	0.553	0.537	0.382	0.240	0.136	0.404
1985–86	0.576	0.543	0.523	0.581	0.460	0.511	0.279	0.344	0.269	0.398
1986–87	0.493	0.475	0.508	0.495	0.481	0.441	0.294	0.516	0.491	0.467
1987–88	0.505	0.550	0.584	0.511	0.548	0.643	0.972	0.299	0.252	0.321
1988–89	0.535	0.463	0.480	0.464	0.491	0.567	0.171	0.367	0.286	0.423
1989–90	0.547	0.495	0.534	0.496	0.401	0.291	0.250	0.262	0.322	0.415
1990–91	0.445	0.440	0.436	0.444	0.362	0.273	0.213	0.225	0.340	0.427
1991–92	0.450	0.379	0.386	0.472	0.359	0.307	0.277	0.207	0.201	0.292
1992–93	0.461	0.374	0.323	0.290	0.279	0.261	0.340	0.187	0.174	0.198
1993–94	0.459	0.382	0.314	0.306	0.290	0.160	0.294	0.171	0.168	0.214
1994–95	0.247	0.311	0.283	0.284	0.238	0.176	0.436	0.364	0.162	0.188
1995–96	0.287	0.316	0.279	0.292	0.311	0.459	0.433	0.137	0.151	0.156
1996–97	0.186	0.239	0.284	0.304	0.337	0.370	0.257	0.140	0.146	0.285
1997–98	0.409	0.386	0.353	0.271	0.269	0.253	0.171	0.166	0.173	0.257
1998–99	0.379	0.407	0.397	0.346	0.250	0.315	0.249	0.175	0.224	0.355
1999–00	0.361	0.408	0.441	0.436	0.292	0.290	0.209	0.173	0.191	0.340
2000–01	0.484	0.411	0.339	0.285	0.234	0.259	0.235	0.184	0.251	0.345
2001–02	0.431	0.438	0.509	0.417	0.289	0.305	0.170	0.207	0.238	0.316
2002–03	0.406	0.483	0.473	0.444	0.304	0.439	0.307	0.179	0.257	0.489
2003–04	0.555	0.499	0.456	0.441	0.302	0.412	0.349	0.305	0.257	0.415
2004–05	0.513	0.532	0.470	0.381	0.343	0.415	0.293	0.190	0.264	0.316
2005–06	0.417	0.463	0.501	0.391	0.294	0.282	0.341	0.157	0.243	0.332
2006–07	0.412	0.437	0.495	0.474	0.334	0.278	0.341	0.178	0.217	0.339
2007–08	0.437	0.427	0.401	0.340	0.322	0.359	0.221	0.111	0.257	0.331
2008–09	0.419	0.415	0.391	0.310	0.370	0.262	0.200	0.170	0.298	0.258
2009–10	0.411	0.417	0.410	0.357	0.261	0.198	0.282	0.145	0.287	0.495
2010–11	0.541	0.494	0.582	0.422	0.397	0.434	0.394	0.191	0.356	0.447

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 11.2.3. Monthly nominal CPUE during fishing years from 1978–79 to 2010–11 by region

Data: non-screened and non-selected; CPUE, catch per unit effort.

Fishing year	Mean nominal CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug–Sep
<b>San Remo Region</b>										
1978–79	0.557	0.632	0.862	0.674	0.662	0.556	0.611	0.441	0.490	0.478
1979–80	0.544	0.622	0.739	0.769	0.533	0.581	0.426	0.799	0.632	0.485
1980–81	0.621	0.793	0.788	0.775	0.668	0.692	0.649	0.443	0.648	0.559
1981–82	0.589	1.002	0.853	0.828	0.720	0.510	0.467	0.391	0.734	0.693
1982–83	0.771	0.946	0.903	0.899	0.674	0.581	0.562	0.543	0.565	0.486
1983–84	0.460	0.626	0.637	0.578	0.637	0.480	0.433	0.438	0.422	0.495
1984–85	0.433	0.683	0.566	0.698	0.553	0.463	0.423	0.322	0.516	0.412
1985–86	0.446	0.543	0.627	0.462	0.584	0.525	0.476	0.274	0.436	0.357
1986–87	0.610	0.572	0.536	0.597	0.539	0.313	0.447	0.371	0.454	0.332
1987–88	0.487	0.546	0.602	0.446	0.355	0.260	0.233	0.314	0.380	0.231
1988–89	0.322	0.418	0.395	0.368	0.285	0.246	0.158	0.190	0.336	0.269
1989–90	0.390	0.370	0.385	0.327	0.324	0.190	0.131	0.154	0.211	0.284
1990–91	0.300	0.410	0.449	0.421	0.372	0.294	0.265	0.239	0.314	0.393
1991–92	0.381	0.340	0.276	0.368	0.375	0.364	0.254	0.254	0.235	0.347
1992–93	0.268	0.450	0.420	0.316	0.375	0.296	0.256	0.264	0.297	0.254
1993–94	0.367	0.361	0.408	0.407	0.321	0.235	0.179	0.179	0.269	0.227
1994–95	0.250	0.372	0.384	0.314	0.310	0.255	0.235	0.184	0.254	0.200
1995–96	0.218	0.319	0.336	0.338	0.296	0.216	0.194	0.201	0.256	0.176
1996–97	0.202	0.289	0.315	0.265	0.287	0.217	0.225	0.204	0.320	0.278
1997–98	0.329	0.396	0.351	0.300	0.331	0.275	0.232	0.198	0.225	0.245
1998–99	0.286	0.377	0.340	0.306	0.237	0.228	0.197	0.197	0.238	0.240
1999–00	0.330	0.351	0.338	0.316	0.261	0.216	0.180	0.181	0.241	0.226
2000–01	0.296	0.310	0.329	0.459	0.279	0.273	0.187	0.255	0.313	0.271
2001–02	0.327	0.418	0.360	0.356	0.380	0.322	0.275	0.147	0.337	0.269
2002–03	0.293	0.428	0.341	0.324	0.272	0.336	0.205	0.485	0.360	0.317
2003–04	0.397	0.505	0.421	0.365	0.528	0.292	0.230	0.245	0.364	0.386
2004–05	0.496	0.617	0.415	0.469	0.440	0.298	0.255	0.477	0.407	0.384
2005–06	0.573	0.449	0.652	0.470	0.534	0.345	0.314	0.471	0.466	0.382
2006–07	0.436	0.561	0.609	0.509	0.457	0.384	0.212	0.295	0.350	0.306
2007–08	0.331	0.421	0.466	0.424	0.377	0.385	0.201	0.337	0.502	0.400
2008–09	0.357	0.489	0.539	0.484	0.397	0.415	0.382	0.295	0.348	0.280
2009–10	0.381	0.469	0.457	0.485	0.383	0.300	0.241	0.332	0.479	0.499
2010–11	0.427	0.652	0.553	0.490	0.448	0.456	0.290	0.169	0.445	0.474
<b>Lakes Entrance Region</b>										
1978–79	1.775	1.401	1.151	1.283	0.791	0.658			0.515	0.560
1979–80	1.636	1.714	1.211	1.054	1.306	1.189	0.563		0.637	0.861
1980–81	1.427	1.654	1.348	1.426	0.705	0.742	0.357			0.733
1981–82	1.540	1.523	1.137	1.290	0.953	2.519			1.000	0.816
1982–83	2.280	1.900	1.284	1.213				0.469		
1983–84	1.327	1.844	1.275	1.374	0.300	1.650	0.379			
1984–85	1.993	1.492	1.844	2.604	2.069	0.817			0.350	
1985–86	1.922	1.503	1.469	1.227	0.750	0.838	0.519		0.687	0.792
1986–87	1.802	1.782	1.319	1.205	0.953				0.755	1.895
1987–88	1.219	1.913	1.615	1.438	1.948		0.634	0.407	0.762	0.816
1988–89	1.443	1.278	1.456	0.921	0.850	1.067			0.434	0.363
1989–90	1.146	0.928	0.718	1.011	1.698	1.025	0.192	0.154	0.777	0.921
1990–91	1.117	0.922	1.042	1.421	1.118	0.242				
1991–92	0.946	0.689	0.852	0.249	0.197					
1992–93	0.490	0.841	0.727	0.613	0.459	0.520	0.268			
1993–94	0.666	0.742	0.697	0.528	0.336	0.302	0.148	0.267	0.175	0.233
1994–95	0.654	0.644	0.628	0.633	0.457	0.494	0.261	0.137	0.148	0.265
1995–96	0.552	0.953	0.672	0.654	0.362	0.370	0.152	0.350	0.201	0.239
1996–97	0.994	1.095	0.644	0.789	0.740	0.539	0.295	0.286	0.360	0.375
1997–98	0.851	0.834	0.470	0.508	0.744	0.371	0.112	0.161	0.228	0.143
1998–99	0.595	0.693	0.619	0.535	0.390	0.304	0.318	0.250	0.073	
1999–00	0.549	0.705	0.480	0.550	0.415	0.509	0.316	0.143	0.420	0.368
2000–01	0.934	0.813	0.650	0.572	0.437	0.417	0.217	0.052		
2001–02	0.461	0.561	0.528	0.544	0.872	0.478	0.251	0.176		0.692
2002–03	0.875	0.743	0.617	0.685	0.451	0.250				0.550
2003–04	1.150	0.762	0.674	0.595	0.305			0.370	0.246	0.374
2004–05	0.675	0.700	0.956	0.438	0.672	0.464	1.338	1.150		0.250
2005–06	0.408	0.779	0.814	0.688	0.561	0.366	0.161			
2006–07	0.735	0.633	0.450	0.664	0.846	0.202				
2007–08	0.613	0.696	0.366	0.608	0.328	0.325				
2008–09	0.610	0.814	0.396	0.595	0.530	0.425			0.217	
2009–10	0.963	0.729	0.653	0.356			0.329			
2010–11	0.964	0.389	0.218	0.139	0.128	0.169				

Data source: Fisheries Victoria CandE Database (16 November 2011)



Table 12.1.1. Monthly Tweedie standardised CPUE (mass per potlift) from 1978–79 to 2010–11 by zone

Data: screened, selected and CPUE standardised; CPUE, catch per unit effort.

Fishing year	Mean standardised CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug-Sep
<b>Western Zone</b>										
1978–79	0.837	1.054	0.992	1.008	0.902	0.737	0.676	0.667	0.473	0.586
1979–80	0.911	1.005	1.049	1.043	0.948	0.761	0.593	0.628	0.589	0.613
1980–81	1.003	1.080	1.089	1.092	0.837	0.799	0.606	0.427	0.568	0.565
1981–82	0.864	0.998	1.076	1.012	0.888	0.698	0.531	0.560	0.495	0.587
1982–83	0.999	1.139	1.034	1.033	0.861	0.751	0.538	0.441	0.600	0.526
1983–84	0.782	1.012	1.039	0.961	0.756	0.628	0.560	0.339	0.480	0.531
1984–85	0.714	0.824	0.887	0.951	0.817	0.646	0.493	0.443	0.388	0.450
1985–86	0.686	0.725	0.770	0.789	0.721	0.501	0.433	0.306	0.295	0.416
1986–87	0.653	0.681	0.682	0.712	0.730	0.594	0.425	0.400	0.429	0.438
1987–88	0.607	0.707	0.769	0.767	0.730	0.603	0.398	0.288	0.352	0.401
1988–89	0.493	0.615	0.674	0.616	0.646	0.500	0.396	0.338	0.370	0.416
1989–90	0.562	0.650	0.711	0.692	0.623	0.487	0.354	0.293	0.339	0.347
1990–91	0.505	0.585	0.637	0.648	0.581	0.453	0.364	0.270	0.320	0.310
1991–92	0.594	0.693	0.793	0.788	0.717	0.607	0.472	0.350	0.297	0.357
1992–93	0.563	0.660	0.745	0.668	0.643	0.542	0.465	0.290	0.312	0.331
1993–94	0.672	0.716	0.667	0.792	0.734	0.519	0.417	0.307	0.297	0.316
1994–95	0.550	0.726	0.737	0.649	0.580	0.455	0.367	0.283	0.258	0.296
1995–96	0.515	0.665	0.748	0.738	0.620	0.410	0.343	0.254	0.264	0.262
1996–97	0.498	0.579	0.628	0.618	0.505	0.397	0.317	0.253	0.261	0.294
1997–98	0.513	0.699	0.711	0.609	0.529	0.452	0.344	0.264	0.254	0.343
1998–99	0.618	0.721	0.691	0.659	0.632	0.517	0.369	0.258	0.294	0.359
1999–00	0.649	0.675	0.681	0.684	0.546	0.468	0.345	0.232	0.303	0.355
2000–01	0.669	0.660	0.705	0.657	0.520	0.394	0.339	0.223	0.290	0.304
2001–02	0.619	0.629	0.734	0.740	0.670	0.514	0.383	0.265	0.275	0.337
2002–03	0.671	0.745	0.751	0.703	0.646	0.587	0.428	0.250	0.292	0.353
2003–04	0.651	0.675	0.699	0.768	0.675	0.568	0.444	0.324	0.309	0.341
2004–05	0.654	0.697	0.674	0.626	0.567	0.494	0.353	0.258	0.241	0.304
2005–06	0.539	0.519	0.620	0.545	0.457	0.352	0.239	0.181	0.265	0.269
2006–07	0.440	0.497	0.501	0.566	0.471	0.382	0.262	0.184	0.205	0.287
2007–08	0.510	0.455	0.486	0.467	0.437	0.315	0.230	0.213	0.237	0.192
2008–09	0.368	0.479	0.453	0.426	0.368	0.257	0.207	0.194	0.211	0.201
2009–10	0.412	0.418	0.430	0.432	0.369	0.297	0.249	0.197	0.202	0.232
2010–11	0.455	0.414	0.529	0.464	0.415	0.347	0.268	0.219	0.332	0.289
<b>Eastern Zone</b>										
1978–79	0.664	0.770	0.885	0.754	0.606	0.509	0.508	0.321	0.546	0.638
1979–80	0.719	0.772	0.776	0.762	0.589	0.589	0.435	0.139	0.575	0.597
1980–81	0.742	0.819	0.851	0.794	0.584	0.576	0.485	0.365	0.498	0.603
1981–82	0.663	0.731	0.731	0.733	0.583	0.437	0.289	0.221	0.405	0.508
1982–83	0.730	0.747	0.764	0.795	0.647	0.478	0.465	0.362	0.495	0.562
1983–84	0.616	0.708	0.801	0.770	0.585	0.551	0.422	0.432	0.368	0.483
1984–85	0.532	0.585	0.586	0.591	0.495	0.440	0.369	0.266	0.250	0.361
1985–86	0.463	0.520	0.497	0.460	0.416	0.325	0.328	0.202	0.322	0.324
1986–87	0.472	0.477	0.483	0.496	0.467	0.366	0.332	0.308	0.360	0.361
1987–88	0.380	0.436	0.514	0.385	0.423	0.297	0.280	0.360	0.252	0.269
1988–89	0.371	0.429	0.448	0.380	0.330	0.267	0.180	0.291	0.288	0.312
1989–90	0.457	0.392	0.449	0.397	0.358	0.254	0.213	0.219	0.264	0.376
1990–91	0.357	0.403	0.445	0.435	0.364	0.300	0.274	0.252	0.367	0.406
1991–92	0.414	0.353	0.386	0.463	0.393	0.340	0.270	0.231	0.206	0.291
1992–93	0.352	0.364	0.333	0.300	0.301	0.256	0.240	0.225	0.208	0.205
1993–94	0.315	0.328	0.315	0.305	0.284	0.194	0.161	0.153	0.164	0.201
1994–95	0.230	0.281	0.281	0.259	0.215	0.209	0.193	0.147	0.178	0.188
1995–96	0.254	0.280	0.277	0.295	0.239	0.183	0.171	0.182	0.170	0.154
1996–97	0.188	0.238	0.239	0.222	0.193	0.188	0.206	0.144	0.176	0.215
1997–98	0.262	0.258	0.269	0.257	0.233	0.210	0.171	0.165	0.168	0.230
1998–99	0.269	0.282	0.305	0.296	0.233	0.240	0.182	0.189	0.215	0.272
1999–00	0.267	0.290	0.317	0.332	0.257	0.206	0.201	0.180	0.193	0.284
2000–01	0.357	0.348	0.298	0.265	0.231	0.215	0.196	0.199	0.247	0.268
2001–02	0.351	0.354	0.410	0.389	0.320	0.259	0.183	0.178	0.228	0.271
2002–03	0.336	0.352	0.376	0.401	0.300	0.330	0.269	0.203	0.239	0.368
2003–04	0.424	0.447	0.412	0.394	0.363	0.282	0.247	0.276	0.269	0.353
2004–05	0.460	0.516	0.418	0.349	0.371	0.348	0.221	0.294	0.258	0.310
2005–06	0.434	0.429	0.489	0.380	0.364	0.258	0.250	0.236	0.267	0.325
2006–07	0.372	0.439	0.498	0.471	0.352	0.299	0.266	0.225	0.232	0.307
2007–08	0.395	0.415	0.410	0.361	0.346	0.308	0.185	0.200	0.302	0.314
2008–09	0.374	0.417	0.382	0.364	0.358	0.314	0.262	0.220	0.290	0.257
2009–10	0.371	0.383	0.399	0.390	0.276	0.224	0.220	0.237	0.299	0.457
2010–11	0.425	0.470	0.562	0.434	0.347	0.322	0.245	0.175	0.366	0.434

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 12.2.1. Monthly Tweedie standardised CPUE (mass per potlift) from 1978–79 to 2010–11 by region**

Data: screened, selected and CPUE standardised; CPUE, catch per unit effort.

Fishing year	Mean standardised CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug-Sep
<b>Portland Region</b>										
1978–79	0.803	0.989	0.938	0.930	0.827	0.667	0.609	0.583	0.424	0.532
1979–80	0.871	0.939	0.988	0.959	0.866	0.687	0.532	0.547	0.526	0.554
1980–81	1.037	1.091	1.110	1.085	0.827	0.779	0.588	0.402	0.548	0.553
1981–82	0.861	0.972	1.056	0.969	0.846	0.656	0.496	0.508	0.460	0.553
1982–83	0.994	1.108	1.014	0.989	0.819	0.706	0.502	0.399	0.557	0.495
1983–84	0.726	0.919	0.951	0.858	0.671	0.550	0.488	0.287	0.416	0.466
1984–85	0.662	0.746	0.809	0.847	0.723	0.564	0.429	0.374	0.336	0.394
1985–86	0.669	0.692	0.740	0.741	0.673	0.461	0.396	0.272	0.269	0.383
1986–87	0.654	0.666	0.672	0.686	0.698	0.561	0.399	0.365	0.401	0.415
1987–88	0.555	0.632	0.692	0.674	0.637	0.520	0.342	0.240	0.300	0.346
1988–89	0.457	0.557	0.615	0.548	0.572	0.437	0.344	0.285	0.319	0.364
1989–90	0.542	0.613	0.675	0.641	0.574	0.443	0.320	0.257	0.305	0.317
1990–91	0.477	0.540	0.592	0.588	0.524	0.404	0.322	0.232	0.282	0.277
1991–92	0.569	0.649	0.749	0.726	0.656	0.549	0.424	0.305	0.265	0.324
1992–93	0.490	0.562	0.639	0.559	0.535	0.446	0.380	0.230	0.254	0.273
1993–94	0.607	0.632	0.594	0.687	0.633	0.442	0.353	0.252	0.250	0.270
1994–95	0.534	0.688	0.704	0.606	0.537	0.416	0.334	0.250	0.234	0.271
1995–96	0.485	0.612	0.694	0.667	0.558	0.364	0.303	0.218	0.232	0.233
1996–97	0.480	0.546	0.597	0.573	0.466	0.361	0.287	0.223	0.235	0.268
1997–98	0.508	0.677	0.694	0.580	0.501	0.422	0.320	0.238	0.235	0.321
1998–99	0.572	0.652	0.630	0.586	0.559	0.451	0.320	0.217	0.254	0.314
1999–00	0.623	0.634	0.644	0.632	0.501	0.424	0.311	0.203	0.272	0.322
2000–01	0.605	0.583	0.628	0.572	0.449	0.337	0.288	0.184	0.245	0.260
2001–02	0.619	0.615	0.722	0.711	0.640	0.485	0.359	0.242	0.257	0.319
2002–03	0.722	0.784	0.796	0.728	0.665	0.596	0.433	0.245	0.293	0.360
2003–04	0.681	0.691	0.721	0.773	0.676	0.561	0.436	0.309	0.302	0.337
2004–05	0.711	0.740	0.722	0.654	0.589	0.506	0.360	0.255	0.244	0.312
2005–06	0.518	0.488	0.587	0.504	0.420	0.319	0.216	0.159	0.238	0.245
2006–07	0.417	0.460	0.467	0.515	0.426	0.341	0.232	0.158	0.181	0.257
2007–08	0.476	0.416	0.448	0.420	0.390	0.277	0.202	0.181	0.207	0.170
2008–09	0.341	0.433	0.414	0.379	0.325	0.225	0.180	0.163	0.183	0.176
2009–10	0.401	0.398	0.412	0.404	0.343	0.273	0.227	0.175	0.183	0.213
2010–11	0.459	0.408	0.526	0.450	0.400	0.330	0.254	0.202	0.312	0.276
<b>Warrnambool Region</b>										
1978–79	0.762	1.034	1.019	1.081	0.965	0.787	0.709	0.705	0.512	0.632
1979–80	0.833	0.989	1.081	1.123	1.018	0.816	0.624	0.667	0.639	0.664
1980–81	0.798	0.926	0.978	1.023	0.783	0.745	0.556	0.394	0.536	0.533
1981–82	0.719	0.894	1.009	0.992	0.868	0.681	0.509	0.541	0.489	0.578
1982–83	0.837	1.028	0.977	1.020	0.848	0.738	0.519	0.429	0.597	0.522
1983–84	0.766	1.069	1.149	1.110	0.870	0.722	0.633	0.386	0.559	0.617
1984–85	0.697	0.866	0.976	1.094	0.937	0.739	0.555	0.502	0.450	0.520
1985–86	0.637	0.726	0.807	0.865	0.788	0.546	0.464	0.330	0.326	0.458
1986–87	0.586	0.658	0.690	0.753	0.769	0.625	0.439	0.417	0.457	0.465
1987–88	0.582	0.730	0.832	0.866	0.822	0.678	0.440	0.321	0.401	0.455
1988–89	0.438	0.588	0.675	0.644	0.674	0.520	0.405	0.348	0.390	0.438
1989–90	0.477	0.594	0.680	0.691	0.620	0.484	0.346	0.289	0.342	0.349
1990–91	0.475	0.593	0.675	0.718	0.642	0.500	0.394	0.295	0.357	0.346
1991–92	0.552	0.693	0.831	0.863	0.783	0.662	0.505	0.377	0.327	0.393
1992–93	0.585	0.739	0.874	0.818	0.785	0.661	0.557	0.349	0.385	0.407
1993–94	0.665	0.763	0.744	0.923	0.852	0.602	0.475	0.352	0.349	0.370
1994–95	0.488	0.693	0.736	0.678	0.604	0.473	0.375	0.291	0.272	0.311
1995–96	0.481	0.669	0.788	0.812	0.680	0.449	0.369	0.275	0.293	0.290
1996–97	0.470	0.588	0.669	0.688	0.560	0.439	0.345	0.278	0.292	0.329
1997–98	0.430	0.632	0.673	0.602	0.522	0.445	0.333	0.257	0.253	0.341
1998–99	0.598	0.751	0.754	0.751	0.718	0.586	0.411	0.290	0.337	0.411
1999–00	0.573	0.642	0.678	0.712	0.567	0.484	0.352	0.238	0.318	0.371
2000–01	0.653	0.694	0.776	0.756	0.596	0.452	0.381	0.252	0.336	0.351
2001–02	0.543	0.594	0.726	0.765	0.690	0.529	0.387	0.270	0.287	0.351
2002–03	0.542	0.648	0.684	0.669	0.613	0.556	0.398	0.234	0.280	0.338
2003–04	0.580	0.648	0.702	0.806	0.707	0.593	0.455	0.335	0.327	0.359
2004–05	0.597	0.684	0.694	0.673	0.608	0.528	0.371	0.273	0.261	0.328
2005–06	0.531	0.551	0.689	0.633	0.529	0.406	0.272	0.207	0.310	0.314
2006–07	0.434	0.528	0.557	0.658	0.546	0.441	0.297	0.210	0.240	0.335
2007–08	0.521	0.500	0.560	0.562	0.524	0.377	0.270	0.252	0.287	0.232
2008–09	0.390	0.546	0.542	0.532	0.458	0.320	0.253	0.238	0.266	0.253
2009–10	0.404	0.442	0.475	0.499	0.425	0.342	0.281	0.224	0.235	0.270
2010–11	0.441	0.432	0.578	0.530	0.472	0.395	0.299	0.247	0.382	0.332

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 12.2.2. Monthly Tweedie standardised CPUE (mass per potlift) from 1978–79 to 2010–11 by region

Data: screened, selected and CPUE standardised; CPUE, catch per unit effort.

Fishing year	Mean standardised CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug-Sep
<b>Apollo Bay Region</b>										
1978–79	1.080	1.331	1.141	1.167	1.059	0.888	0.838	0.817	0.581	0.724
1979–80	1.181	1.274	1.211	1.213	1.117	0.921	0.738	0.773	0.725	0.761
1980–81	1.240	1.306	1.200	1.211	0.942	0.922	0.720	0.501	0.667	0.669
1981–82	1.141	1.289	1.265	1.199	1.067	0.860	0.672	0.701	0.621	0.742
1982–83	1.277	1.425	1.177	1.186	1.002	0.897	0.660	0.534	0.729	0.644
1983–84	0.984	1.247	1.166	1.086	0.866	0.738	0.677	0.405	0.575	0.641
1984–85	0.907	1.023	1.003	1.084	0.944	0.766	0.601	0.534	0.468	0.547
1985–86	0.822	0.851	0.823	0.850	0.787	0.561	0.498	0.348	0.336	0.477
1986–87	0.787	0.803	0.732	0.771	0.800	0.669	0.492	0.458	0.491	0.506
1987–88	0.812	0.924	0.916	0.920	0.887	0.752	0.511	0.366	0.447	0.513
1988–89	0.704	0.860	0.858	0.790	0.839	0.666	0.543	0.458	0.502	0.569
1989–90	0.786	0.889	0.886	0.868	0.792	0.636	0.475	0.389	0.451	0.465
1990–91	0.662	0.751	0.743	0.763	0.693	0.555	0.457	0.336	0.398	0.389
1991–92	0.747	0.852	0.888	0.889	0.820	0.713	0.569	0.417	0.354	0.430
1992–93	0.823	0.944	0.971	0.877	0.856	0.740	0.653	0.402	0.434	0.463
1993–94	0.968	1.008	0.856	1.023	0.961	0.697	0.576	0.419	0.406	0.435
1994–95	0.708	0.915	0.845	0.751	0.679	0.547	0.454	0.346	0.316	0.365
1995–96	0.699	0.883	0.905	0.898	0.765	0.519	0.447	0.327	0.340	0.341
1996–97	0.607	0.690	0.683	0.677	0.561	0.452	0.371	0.293	0.302	0.343
1997–98	0.644	0.859	0.796	0.686	0.605	0.530	0.415	0.314	0.303	0.412
1998–99	0.829	0.946	0.826	0.794	0.772	0.647	0.475	0.328	0.374	0.461
1999–00	0.869	0.884	0.812	0.823	0.666	0.585	0.444	0.294	0.385	0.455
2000–01	0.956	0.922	0.898	0.843	0.676	0.526	0.465	0.302	0.394	0.416
2001–02	0.766	0.762	0.809	0.822	0.754	0.594	0.455	0.312	0.324	0.400
2002–03	0.765	0.832	0.763	0.720	0.670	0.625	0.469	0.271	0.316	0.386
2003–04	0.713	0.724	0.682	0.755	0.673	0.581	0.467	0.337	0.322	0.357
2004–05	0.621	0.647	0.570	0.533	0.490	0.437	0.322	0.232	0.217	0.276
2005–06	0.608	0.573	0.624	0.552	0.469	0.371	0.260	0.194	0.284	0.291
2006–07	0.532	0.588	0.540	0.614	0.518	0.431	0.303	0.211	0.235	0.332
2007–08	0.597	0.521	0.507	0.491	0.466	0.344	0.258	0.236	0.264	0.215
2008–09	0.422	0.536	0.462	0.438	0.383	0.275	0.228	0.210	0.230	0.221
2009–10	0.454	0.450	0.421	0.427	0.369	0.305	0.263	0.206	0.211	0.245
2010–11	0.458	0.407	0.474	0.419	0.379	0.326	0.259	0.209	0.317	0.278
<b>Queenscliff Region</b>										
1978–79	0.664	0.735	0.857	0.731	0.559	0.454	0.465	0.262	0.490	0.639
1979–80	0.742	0.760	0.775	0.762	0.560	0.542	0.411	0.117	0.532	0.617
1980–81	0.756	0.796	0.840	0.785	0.549	0.524	0.452	0.304	0.455	0.616
1981–82	0.636	0.669	0.679	0.682	0.516	0.374	0.254	0.173	0.348	0.488
1982–83	0.715	0.699	0.725	0.756	0.585	0.418	0.418	0.290	0.434	0.552
1983–84	0.646	0.709	0.814	0.783	0.566	0.516	0.405	0.370	0.346	0.508
1984–85	0.533	0.559	0.568	0.573	0.457	0.393	0.339	0.217	0.225	0.362
1985–86	0.476	0.511	0.495	0.460	0.395	0.299	0.309	0.170	0.297	0.334
1986–87	0.495	0.477	0.490	0.505	0.452	0.343	0.319	0.264	0.338	0.380
1987–88	0.390	0.428	0.512	0.384	0.401	0.273	0.263	0.302	0.232	0.277
1988–89	0.403	0.445	0.471	0.400	0.331	0.259	0.179	0.258	0.280	0.340
1989–90	0.525	0.429	0.498	0.441	0.378	0.260	0.224	0.205	0.271	0.432
1990–91	0.374	0.402	0.451	0.442	0.352	0.280	0.262	0.215	0.345	0.426
1991–92	0.425	0.346	0.384	0.461	0.372	0.311	0.253	0.193	0.189	0.299
1992–93	0.354	0.349	0.324	0.292	0.278	0.229	0.221	0.185	0.187	0.206
1993–94	0.319	0.316	0.309	0.300	0.265	0.175	0.149	0.126	0.149	0.203
1994–95	0.227	0.265	0.269	0.248	0.196	0.185	0.174	0.118	0.158	0.186
1995–96	0.259	0.273	0.274	0.292	0.225	0.166	0.160	0.152	0.155	0.158
1996–97	0.174	0.210	0.215	0.200	0.165	0.156	0.175	0.109	0.146	0.200
1997–98	0.257	0.241	0.256	0.244	0.211	0.184	0.153	0.132	0.147	0.226
1998–99	0.288	0.287	0.315	0.307	0.230	0.229	0.179	0.165	0.206	0.291
1999–00	0.310	0.321	0.356	0.374	0.275	0.213	0.214	0.171	0.201	0.331
2000–01	0.399	0.371	0.323	0.288	0.238	0.215	0.200	0.182	0.247	0.300
2001–02	0.371	0.358	0.420	0.399	0.313	0.245	0.177	0.154	0.216	0.288
2002–03	0.377	0.377	0.409	0.436	0.311	0.330	0.276	0.186	0.240	0.413
2003–04	0.459	0.462	0.432	0.414	0.363	0.272	0.245	0.244	0.261	0.383
2004–05	0.477	0.511	0.420	0.351	0.356	0.322	0.210	0.249	0.240	0.322
2005–06	0.438	0.413	0.479	0.372	0.339	0.233	0.231	0.195	0.242	0.329
2006–07	0.379	0.426	0.491	0.465	0.331	0.272	0.248	0.187	0.211	0.313
2007–08	0.411	0.412	0.413	0.364	0.332	0.286	0.177	0.169	0.282	0.327
2008–09	0.384	0.409	0.380	0.363	0.339	0.288	0.246	0.185	0.267	0.264
2009–10	0.372	0.367	0.387	0.379	0.255	0.200	0.202	0.194	0.268	0.458
2010–11	0.426	0.450	0.546	0.422	0.322	0.288	0.225	0.143	0.329	0.436

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 12.2.3. Monthly Tweedie standardised CPUE (mass per potlift) from 1978–79 to 2010–11 by region**

Data: screened, selected and CPUE standardised; CPUE, catch per unit effort.

Fishing year	Mean standardised CPUE (kg per potlift) for each month									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug-Sep
<b>San Remo Region</b>										
1978–79	0.624	0.829	0.935	0.775	0.663	0.550	0.527	0.346	0.678	0.608
1979–80	0.636	0.783	0.772	0.738	0.606	0.600	0.425	0.141	0.672	0.538
1980–81	0.684	0.865	0.882	0.800	0.627	0.611	0.494	0.386	0.607	0.566
1981–82	0.699	0.883	0.865	0.845	0.715	0.529	0.337	0.267	0.563	0.544
1982–83	0.727	0.853	0.855	0.866	0.749	0.548	0.512	0.414	0.651	0.569
1983–84	0.542	0.715	0.793	0.741	0.599	0.558	0.410	0.436	0.428	0.433
1984–85	0.501	0.632	0.621	0.608	0.543	0.477	0.384	0.287	0.312	0.346
1985–86	0.417	0.537	0.503	0.454	0.436	0.337	0.326	0.209	0.383	0.297
1986–87	0.402	0.466	0.463	0.463	0.464	0.360	0.313	0.302	0.406	0.314
1987–88	0.343	0.451	0.522	0.380	0.445	0.309	0.279	0.373	0.301	0.247
1988–89	0.316	0.419	0.428	0.354	0.327	0.261	0.169	0.284	0.323	0.271
1989–90	0.349	0.344	0.385	0.331	0.318	0.223	0.180	0.192	0.266	0.292
1990–91	0.315	0.407	0.441	0.420	0.373	0.304	0.266	0.255	0.428	0.364
1991–92	0.360	0.352	0.378	0.441	0.398	0.340	0.259	0.230	0.237	0.258
1992–93	0.335	0.397	0.356	0.312	0.333	0.280	0.252	0.246	0.262	0.198
1993–94	0.295	0.352	0.331	0.312	0.309	0.209	0.167	0.164	0.203	0.191
1994–95	0.215	0.301	0.295	0.264	0.234	0.225	0.199	0.157	0.220	0.178
1995–96	0.220	0.279	0.270	0.279	0.242	0.182	0.164	0.181	0.194	0.136
1996–97	0.188	0.273	0.269	0.243	0.225	0.217	0.228	0.166	0.233	0.219
1997–98	0.254	0.287	0.293	0.273	0.264	0.235	0.183	0.184	0.215	0.227
1998–99	0.232	0.278	0.295	0.279	0.234	0.238	0.174	0.187	0.245	0.238
1999–00	0.211	0.262	0.281	0.286	0.236	0.187	0.176	0.163	0.201	0.228
2000–01	0.274	0.306	0.257	0.223	0.206	0.190	0.166	0.175	0.250	0.209
2001–02	0.306	0.354	0.402	0.372	0.325	0.260	0.176	0.178	0.263	0.241
2002–03	0.249	0.299	0.314	0.325	0.259	0.281	0.220	0.173	0.234	0.277
2003–04	0.340	0.411	0.372	0.346	0.339	0.260	0.219	0.254	0.285	0.288
2004–05	0.419	0.539	0.428	0.348	0.394	0.365	0.222	0.308	0.310	0.287
2005–06	0.414	0.469	0.525	0.397	0.404	0.283	0.263	0.259	0.337	0.316
2006–07	0.345	0.467	0.520	0.478	0.381	0.320	0.273	0.239	0.284	0.290
2007–08	0.348	0.419	0.406	0.348	0.355	0.313	0.181	0.202	0.352	0.281
2008–09	0.342	0.437	0.392	0.364	0.381	0.330	0.265	0.231	0.350	0.239
2009–10	0.355	0.420	0.428	0.407	0.307	0.246	0.232	0.259	0.377	0.443
2010–11	0.407	0.517	0.606	0.455	0.388	0.355	0.259	0.192	0.463	0.423
<b>Lakes Entrance Region</b>										
1978–79	1.102	1.134	1.139	0.994	0.817	0.717	0.467	0.328	0.567	0.632
1979–80	0.921	0.878	0.772	0.776	0.613	0.641	0.309	0.110	0.461	0.457
1980–81	0.996	0.975	0.886	0.846	0.637	0.656	0.360	0.302	0.418	0.484
1981–82	0.691	0.675	0.590	0.606	0.494	0.386	0.167	0.142	0.264	0.316
1982–83	0.763	0.694	0.620	0.660	0.550	0.425	0.270	0.234	0.324	0.351
1983–84	0.703	0.717	0.709	0.698	0.542	0.534	0.267	0.304	0.263	0.330
1984–85	0.847	0.826	0.724	0.747	0.641	0.595	0.326	0.261	0.249	0.344
1985–86	0.740	0.738	0.616	0.584	0.541	0.441	0.290	0.199	0.322	0.309
1986–87	0.859	0.771	0.682	0.718	0.692	0.566	0.335	0.346	0.410	0.393
1987–88	0.575	0.586	0.604	0.463	0.521	0.382	0.235	0.336	0.239	0.243
1988–89	0.533	0.547	0.498	0.433	0.385	0.325	0.143	0.258	0.258	0.268
1989–90	0.552	0.421	0.420	0.380	0.351	0.261	0.142	0.163	0.199	0.271
1990–91	0.462	0.462	0.446	0.447	0.383	0.329	0.196	0.201	0.297	0.314
1991–92	0.653	0.495	0.473	0.581	0.505	0.455	0.236	0.225	0.203	0.274
1992–93	0.507	0.465	0.372	0.343	0.352	0.313	0.192	0.200	0.187	0.176
1993–94	0.454	0.419	0.352	0.349	0.332	0.237	0.129	0.136	0.148	0.173
1994–95	0.432	0.468	0.409	0.386	0.328	0.333	0.200	0.170	0.209	0.210
1995–96	0.464	0.456	0.393	0.429	0.356	0.284	0.174	0.206	0.194	0.169
1996–97	0.450	0.506	0.445	0.424	0.376	0.384	0.274	0.213	0.264	0.308
1997–98	0.433	0.378	0.345	0.338	0.314	0.295	0.156	0.169	0.173	0.227
1998–99	0.418	0.387	0.366	0.365	0.293	0.316	0.157	0.181	0.208	0.252
1999–00	0.337	0.325	0.310	0.333	0.264	0.221	0.141	0.140	0.153	0.214
2000–01	0.501	0.434	0.325	0.296	0.264	0.257	0.152	0.173	0.217	0.225
2001–02	0.370	0.332	0.336	0.327	0.275	0.232	0.107	0.116	0.151	0.171
2002–03	0.469	0.437	0.408	0.445	0.341	0.391	0.208	0.175	0.209	0.307
2003–04	0.458	0.429	0.346	0.338	0.319	0.258	0.148	0.184	0.182	0.228
2004–05	0.519	0.517	0.366	0.313	0.341	0.333	0.138	0.205	0.182	0.209
2005–06	0.494	0.434	0.433	0.344	0.337	0.250	0.158	0.166	0.191	0.221
2006–07	0.432	0.452	0.449	0.435	0.333	0.295	0.171	0.161	0.168	0.213
2007–08	0.257	0.240	0.207	0.187	0.183	0.170	0.067	0.080	0.123	0.122
2008–09	0.478	0.474	0.379	0.370	0.372	0.341	0.185	0.174	0.232	0.196
2009–10	0.377	0.346	0.314	0.314	0.228	0.194	0.124	0.148	0.190	0.277
2010–11	0.247	0.243	0.254	0.201	0.165	0.159	0.079	0.063	0.133	0.151

Data source: Fisheries Victoria CandE Database (16 November 2011)

Table 13. Catch mass and catch number during fishing years from 1978–79 to 2010–11 for each region within zone

Data: non-screened and non-selected; fishing year, Nov–Sep.

Fishing year	Catch mass (tonne) for each region				Catch number ('000) for each region			
	Portland	Warrnambool	Apollo Bay	Total	Portland	Warrnambool	Apollo Bay	Total
<b>Western Zone</b>								
1978–79	236	136	114	486	242	130	112	485
1979–80	216	125	111	453	218	118	107	444
1980–81	325	112	112	549	325	112	111	548
1981–82	264	111	123	499	266	110	124	499
1982–83	254	91	115	460	250	87	117	455
1983–84	200	122	98	421	203	114	97	414
1984–85	187	114	105	406	189	105	100	394
1985–86	171	85	89	345	179	81	87	346
1986–87	180	85	86	351	188	81	84	353
1987–88	182	90	73	345	188	87	74	349
1988–89	162	68	75	304	180	68	74	322
1989–90	193	63	75	331	213	65	77	355
1990–91	185	68	64	317	201	70	66	337
1991–92	246	93	69	408	273	95	72	439
1992–93	215	108	85	408	237	108	88	433
1993–94	235	100	114	448	246	99	111	456
1994–95	249	87	99	435	265	85	94	444
1995–96	262	83	78	423	287	79	76	442
1996–97	230	87	85	402	251	84	79	414
1997–98	271	88	107	466	303	87	102	492
1998–99	256	160	100	516	298	166	103	568
1999–00	285	129	107	521	340	139	114	592
2000–01	278	136	111	525	331	148	120	598
2001–02	231	110	97	438	277	125	108	510
2002–03	239	101	90	430	281	114	100	495
2003–04	267	100	94	461	299	110	106	515
2004–05	229	109	70	408	259	115	77	451
2005–06	201	105	52	358	237	113	56	405
2006–07	187	86	62	336	229	95	68	392
2007–08	153	80	56	289	188	90	61	338
2008–09	111	75	49	235	134	83	51	268
2009–10	120	72	47	239	146	80	51	277
2010–11	147	59	46	253	184	68	54	306
Fishing year	Catch mass (tonne) for each region				Catch number (thousands) for each region			
	Queenscliff	San Remo	Lakes Entrance	Total	Queenscliff	San Remo	Lakes Entrance	Total
<b>Eastern Zone</b>								
1978–79	65	42	32	139	64	32	28	123
1979–80	61	37	18	116	64	30	15	108
1980–81	67	47	19	133	69	37	17	123
1981–82	60	53	18	131	64	40	16	120
1982–83	70	61	12	143	72	49	10	132
1983–84	84	41	12	136	85	34	9	128
1984–85	54	40	19	113	49	31	16	96
1985–86	46	31	18	95	42	24	15	81
1986–87	39	27	12	78	37	21	9	66
1987–88	40	19	12	70	37	15	10	62
1988–89	35	16	13	64	35	13	12	60
1989–90	54	19	11	83	58	16	10	85
1990–91	45	17	9	72	48	15	8	72
1991–92	44	15	6	65	46	13	5	64
1992–93	37	25	8	69	38	20	6	63
1993–94	40	31	7	79	39	22	7	68
1994–95	31	28	13	72	28	20	10	58
1995–96	33	18	6	57	29	13	6	48
1996–97	27	20	12	60	24	14	10	48
1997–98	28	26	12	66	26	18	9	54
1998–99	33	24	10	67	32	18	8	58
1999–00	44	23	7	75	48	17	6	71
2000–01	43	20	10	73	44	15	8	67
2001–02	33	16	4	53	34	12	3	50
2002–03	34	13	5	52	34	10	4	48
2003–04	39	14	3	56	39	10	2	51
2004–05	37	13	4	55	36	9	3	49
2005–06	28	23	2	52	27	17	2	46
2006–07	31	21	2	54	30	16	2	48
2007–08	24	21	2	46	23	15	1	39
2008–09	21	17	1	39	19	12	1	32
2009–10	32	22	1	55	32	17	1	50
2010–11	35	28	3	65	38	22	2	62

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 14. Nominal fishing effort and nominal CPUE during fishing years from 1978–79 to 2010–11 for each region within zone**

Data: non-screened and non-selected; fishing year, Nov–Sep; nominal fishing effort is effort as reported on mandatory logbook returns; nominal CPUE is ratio of total catch/total nominal effort.

Fishing year	Nominal fishing effort ('000 potlifts) for each region				Nominal CPUE (kg per potlift) for each region			
	Portland	Warmambool	Apollo Bay	Total	Portland	Warmambool	Apollo Bay	Total
<b>Western Zone</b>								
1978–79	347	187	87	622	0.679	0.724	1.315	0.781
1979–80	326	165	85	576	0.664	0.760	1.299	0.786
1980–81	414	170	96	680	0.784	0.658	1.173	0.807
1981–82	352	166	119	637	0.751	0.672	1.030	0.782
1982–83	366	139	103	608	0.695	0.660	1.112	0.758
1983–84	305	164	101	571	0.656	0.746	0.967	0.737
1984–85	294	166	118	578	0.635	0.685	0.889	0.702
1985–86	292	165	112	569	0.585	0.515	0.799	0.607
1986–87	311	169	115	595	0.580	0.505	0.745	0.591
1987–88	298	163	96	557	0.613	0.554	0.755	0.620
1988–89	318	158	102	577	0.509	0.430	0.734	0.527
1989–90	367	141	105	613	0.525	0.447	0.719	0.541
1990–91	408	148	94	650	0.453	0.461	0.676	0.487
1991–92	446	172	94	712	0.552	0.543	0.734	0.574
1992–93	478	199	103	779	0.449	0.543	0.831	0.524
1993–94	455	167	132	754	0.515	0.597	0.865	0.594
1994–95	494	169	126	789	0.504	0.519	0.783	0.552
1995–96	514	137	109	761	0.510	0.601	0.711	0.556
1996–97	497	157	133	787	0.462	0.557	0.639	0.511
1997–98	513	184	145	841	0.529	0.480	0.738	0.554
1998–99	479	244	138	861	0.534	0.657	0.721	0.599
1999–00	534	223	140	897	0.534	0.579	0.759	0.581
2000–01	526	227	142	895	0.529	0.596	0.784	0.586
2001–02	385	198	121	704	0.601	0.554	0.803	0.623
2002–03	337	191	102	630	0.709	0.532	0.874	0.682
2003–04	365	181	113	659	0.731	0.551	0.835	0.699
2004–05	348	214	105	667	0.659	0.511	0.663	0.612
2005–06	416	209	80	705	0.484	0.500	0.649	0.507
2006–07	428	172	97	698	0.437	0.502	0.641	0.482
2007–08	386	174	109	668	0.397	0.460	0.511	0.432
2008–09	329	171	105	606	0.336	0.438	0.470	0.388
2009–10	353	192	106	650	0.342	0.373	0.441	0.367
2010–11	359	129	98	586	0.410	0.461	0.474	0.432
Fishing year	Nominal fishing effort ('000 potlifts) for each region				Nominal CPUE (kg per potlift) for each region			
	Queenscliff	San Remo	Lakes Entrance	Total	Queenscliff	San Remo	Lakes Entrance	Total
<b>Eastern Zone</b>								
1978–79	97	68	27	192	0.668	0.624	1.176	0.724
1979–80	95	61	15	171	0.642	0.601	1.176	0.674
1980–81	98	68	14	180	0.686	0.698	1.345	0.742
1981–82	109	70	14	193	0.554	0.748	1.248	0.677
1982–83	120	85	7	212	0.586	0.717	1.698	0.675
1983–84	144	77	8	230	0.580	0.531	1.384	0.593
1984–85	111	77	12	201	0.488	0.519	1.509	0.563
1985–86	101	61	12	175	0.449	0.505	1.479	0.541
1986–87	86	52	7	145	0.457	0.517	1.565	0.535
1987–88	79	43	8	130	0.501	0.437	1.456	0.539
1988–89	84	48	13	145	0.408	0.327	1.072	0.439
1989–90	124	61	13	198	0.437	0.305	0.834	0.422
1990–91	113	50	9	172	0.400	0.343	0.988	0.415
1991–92	122	46	8	175	0.359	0.326	0.784	0.369
1992–93	133	80	12	224	0.275	0.316	0.650	0.310
1993–94	147	101	12	260	0.275	0.306	0.607	0.303
1994–95	131	100	22	253	0.236	0.283	0.590	0.285
1995–96	139	68	12	220	0.235	0.262	0.497	0.258
1996–97	125	79	19	222	0.218	0.258	0.651	0.269
1997–98	112	92	17	221	0.255	0.286	0.666	0.300
1998–99	112	90	17	220	0.295	0.269	0.567	0.306
1999–00	129	88	15	232	0.344	0.259	0.497	0.322
2000–01	131	71	17	219	0.328	0.280	0.582	0.331
2001–02	97	47	7	151	0.343	0.345	0.566	0.354
2002–03	88	39	7	134	0.388	0.335	0.761	0.391
2003–04	93	34	5	133	0.413	0.402	0.671	0.419
2004–05	95	36	5	136	0.392	0.376	0.756	0.402
2005–06	73	46	3	122	0.377	0.487	0.753	0.427
2006–07	81	50	4	136	0.378	0.414	0.567	0.397
2007–08	68	52	4	123	0.348	0.398	0.521	0.374
2008–09	61	45	2	108	0.347	0.380	0.664	0.366
2009–10	87	57	2	146	0.364	0.389	0.686	0.378
2010–11	80	57	13	150	0.438	0.487	0.204	0.437

Data source: Fisheries Victoria CandE Database (16 November 2011)

**Table 15. Target and standardised CPUE during fishing years from 1978–79 to 2010–11 for each region within zone**

Fishing year, Nov–Sep; target CPUE (ratio of total catch/total effort) is targeted at SRL or at both SRL & GC, and is non-screened, non-selected, & non-standardised; Tweedie standardised CPUE is targeted at SRL or at both SRL & GC, and is screened, selected & standardised; SRL, southern rock lobster; GC, giant crab.

Fishing year	Target CPUE (kg per potlift) for each region				Tweedie standardised CPUE (kg per potlift) for each region			
	Portland	Warrnambool	Apollo Bay	Total	Portland	Warrnambool	Apollo Bay	Total
<b>Western Zone</b>								
1978–79	0.679	0.723	1.311	0.780	0.754	0.851	0.990	0.818
1979–80	0.664	0.760	1.299	0.786	0.777	0.884	1.028	0.847
1980–81	0.784	0.658	1.173	0.807	0.848	0.777	0.990	0.854
1981–82	0.751	0.672	1.031	0.782	0.776	0.771	1.004	0.812
1982–83	0.695	0.660	1.112	0.758	0.791	0.793	0.992	0.828
1983–84	0.656	0.746	0.967	0.737	0.670	0.841	0.887	0.751
1984–85	0.634	0.686	0.889	0.701	0.616	0.773	0.825	0.693
1985–86	0.585	0.515	0.799	0.607	0.564	0.639	0.676	0.602
1986–87	0.580	0.505	0.745	0.591	0.575	0.613	0.676	0.598
1987–88	0.613	0.554	0.755	0.620	0.525	0.655	0.749	0.598
1988–89	0.509	0.430	0.734	0.527	0.470	0.537	0.708	0.529
1989–90	0.525	0.448	0.720	0.541	0.492	0.515	0.697	0.532
1990–91	0.452	0.461	0.676	0.486	0.443	0.525	0.600	0.488
1991–92	0.555	0.555	0.738	0.579	0.544	0.627	0.696	0.591
1992–93	0.454	0.590	0.868	0.542	0.455	0.646	0.745	0.544
1993–94	0.519	0.633	0.923	0.611	0.483	0.629	0.751	0.557
1994–95	0.504	0.524	0.808	0.555	0.466	0.506	0.604	0.500
1995–96	0.511	0.619	0.754	0.562	0.444	0.524	0.624	0.491
1996–97	0.465	0.554	0.691	0.518	0.414	0.482	0.510	0.447
1997–98	0.532	0.481	0.764	0.560	0.462	0.466	0.572	0.486
1998–99	0.537	0.670	0.770	0.610	0.469	0.584	0.664	0.528
1999–00	0.537	0.595	0.767	0.588	0.467	0.511	0.636	0.507
2000–01	0.530	0.603	0.785	0.589	0.423	0.543	0.652	0.487
2001–02	0.604	0.560	0.810	0.627	0.513	0.535	0.620	0.534
2002–03	0.710	0.541	0.889	0.688	0.580	0.517	0.600	0.561
2003–04	0.731	0.555	0.846	0.703	0.560	0.567	0.572	0.557
2004–05	0.663	0.523	0.688	0.622	0.510	0.510	0.435	0.489
2005–06	0.484	0.517	0.674	0.514	0.380	0.463	0.435	0.411
2006–07	0.437	0.508	0.696	0.489	0.372	0.461	0.463	0.409
2007–08	0.397	0.474	0.570	0.443	0.322	0.418	0.394	0.359
2008–09	0.338	0.450	0.502	0.397	0.288	0.393	0.348	0.324
2009–10	0.342	0.382	0.460	0.372	0.310	0.372	0.343	0.332
2010–11	0.410	0.471	0.519	0.441	0.376	0.430	0.366	0.389
Fishing year	Target CPUE (kg per potlift) for each region				Tweedie standardised CPUE (kg per potlift) for each region			
	Queenscliff	San Remo	Lakes Entrance	Total	Queenscliff	San Remo	Lakes Entrance	Total
<b>Eastern Zone</b>								
1978–79	0.668	0.625	1.176	0.724	0.633	0.702	0.834	0.662
1979–80	0.641	0.601	1.176	0.674	0.643	0.651	0.634	0.652
1980–81	0.685	0.698	1.345	0.742	0.655	0.699	0.685	0.672
1981–82	0.549	0.748	1.248	0.674	0.535	0.693	0.461	0.584
1982–83	0.593	0.717	1.698	0.680	0.603	0.722	0.511	0.643
1983–84	0.580	0.531	1.384	0.593	0.596	0.590	0.515	0.594
1984–85	0.488	0.519	1.509	0.563	0.456	0.506	0.576	0.477
1985–86	0.448	0.505	1.476	0.541	0.403	0.416	0.497	0.410
1986–87	0.458	0.517	1.565	0.536	0.429	0.411	0.591	0.428
1987–88	0.501	0.437	1.425	0.536	0.362	0.376	0.424	0.369
1988–89	0.408	0.327	1.072	0.439	0.357	0.330	0.374	0.344
1989–90	0.437	0.305	0.834	0.422	0.391	0.307	0.327	0.356
1990–91	0.400	0.343	0.988	0.415	0.381	0.378	0.374	0.381
1991–92	0.359	0.326	0.784	0.369	0.338	0.338	0.413	0.345
1992–93	0.275	0.316	0.650	0.310	0.271	0.303	0.308	0.282
1993–94	0.275	0.306	0.613	0.303	0.246	0.269	0.279	0.255
1994–95	0.236	0.283	0.590	0.285	0.216	0.241	0.326	0.229
1995–96	0.235	0.262	0.547	0.259	0.219	0.220	0.313	0.225
1996–97	0.218	0.258	0.651	0.269	0.188	0.240	0.387	0.212
1997–98	0.255	0.286	0.666	0.301	0.217	0.254	0.291	0.232
1998–99	0.295	0.269	0.567	0.306	0.269	0.256	0.310	0.263
1999–00	0.344	0.259	0.497	0.322	0.299	0.240	0.258	0.269
2000–01	0.328	0.280	0.582	0.331	0.295	0.238	0.294	0.276
2001–02	0.343	0.345	0.566	0.354	0.310	0.302	0.246	0.307
2002–03	0.388	0.335	0.761	0.391	0.354	0.276	0.350	0.330
2003–04	0.413	0.402	0.671	0.419	0.374	0.328	0.297	0.362
2004–05	0.391	0.376	0.756	0.401	0.359	0.372	0.310	0.362
2005–06	0.377	0.487	0.753	0.427	0.349	0.389	0.313	0.362
2006–07	0.378	0.414	0.567	0.397	0.352	0.379	0.319	0.362
2007–08	0.348	0.398	0.521	0.374	0.343	0.343	0.170	0.345
2008–09	0.346	0.379	0.664	0.365	0.328	0.344	0.324	0.334
2009–10	0.364	0.389	0.686	0.378	0.336	0.378	0.271	0.351
2010–11	0.438	0.472	0.204	0.431	0.396	0.447	0.183	0.413

Data source: Fisheries Victoria CandE Database (16 November 2011)

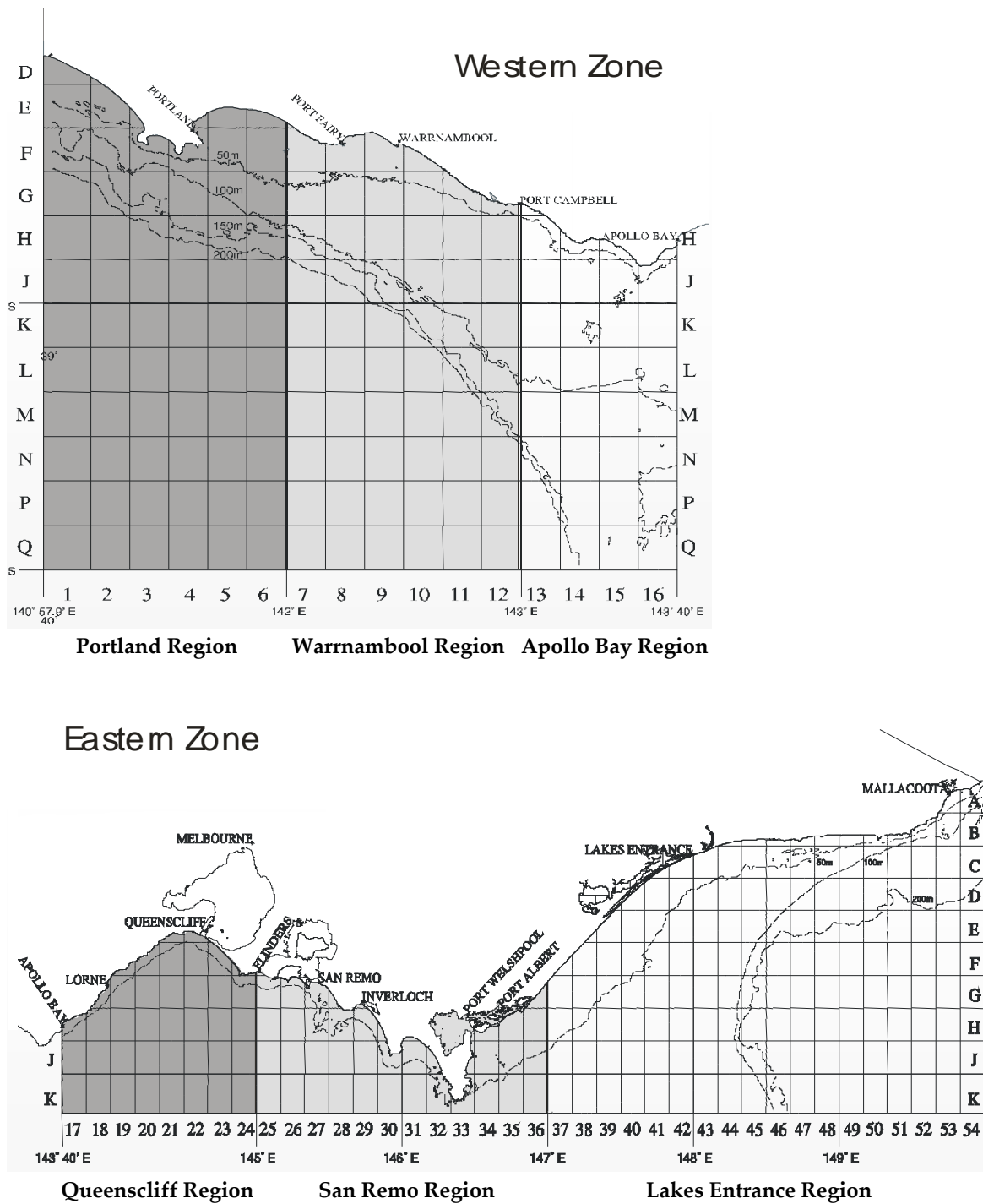


Figure 1. Area grid cell numbers (10 minutes of longitude) and regions by zone in the Victorian SRL fishery

SRL, southern rock lobster.



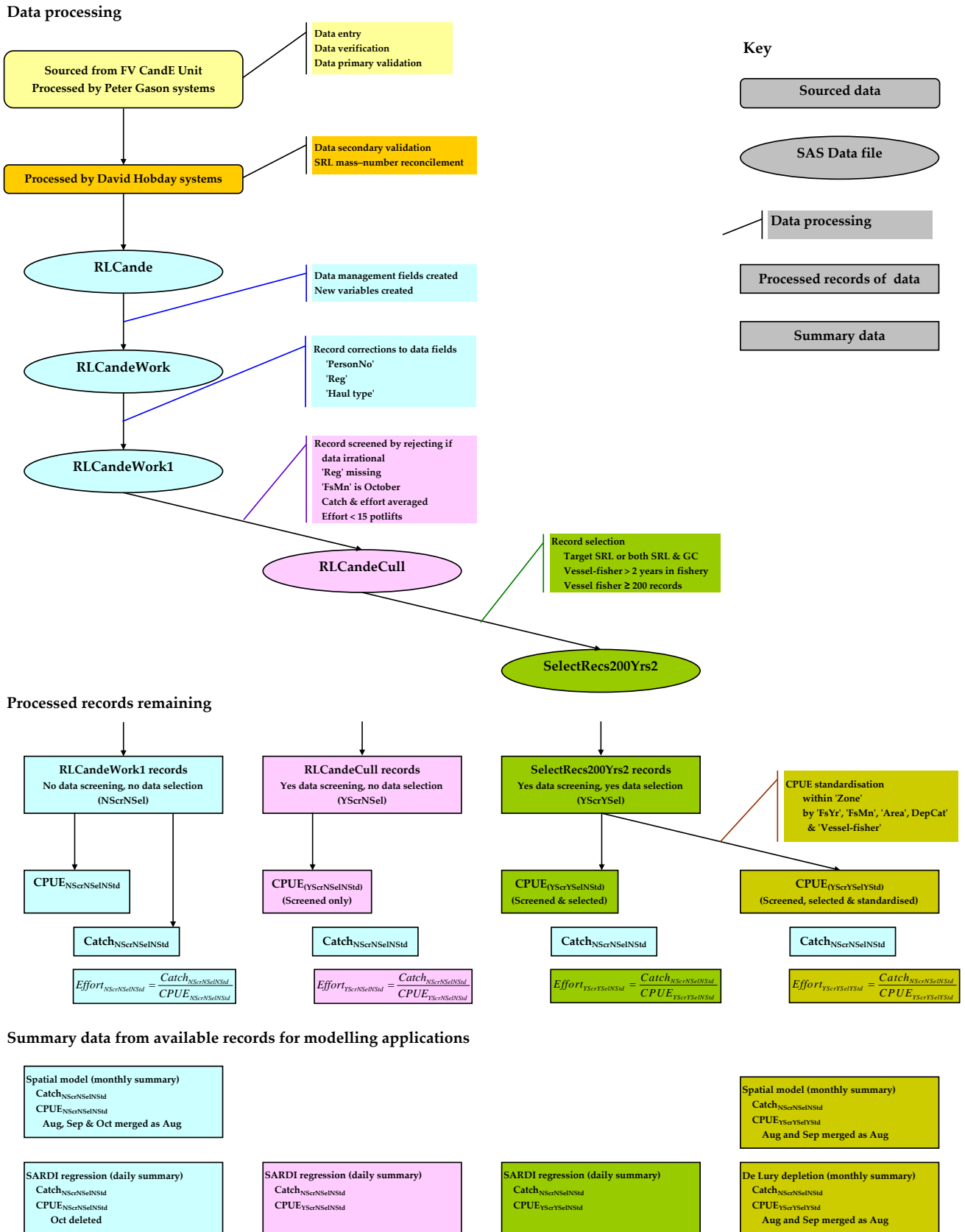


Figure 2. SAS catch and effort data files and data processing by screening, selecting, and standardising CPUE

FV, Fisheries Victoria; RL, rock lobster; CandE, catch and effort; PersonNo, fisher code; Reg, vessel registration; NScr, no data screening; YScr, yes data screening; NSel, no data selection; YSel, yes data selection; NStd, no CPUE standardisation; YStd, yes CPUE standardisation; FsMn, fishing month.

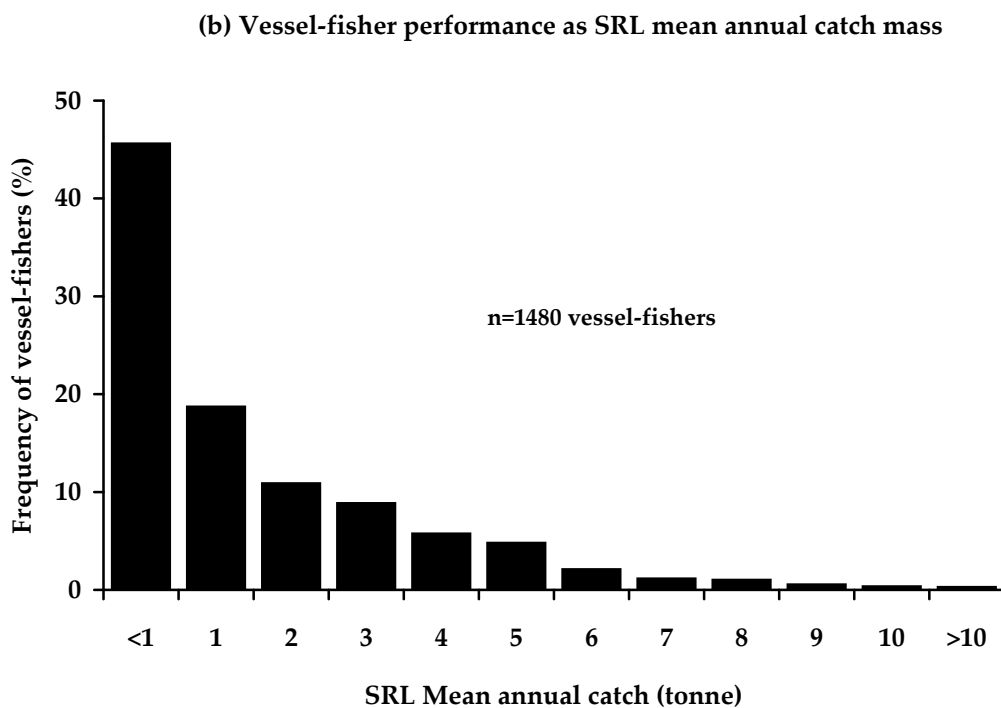
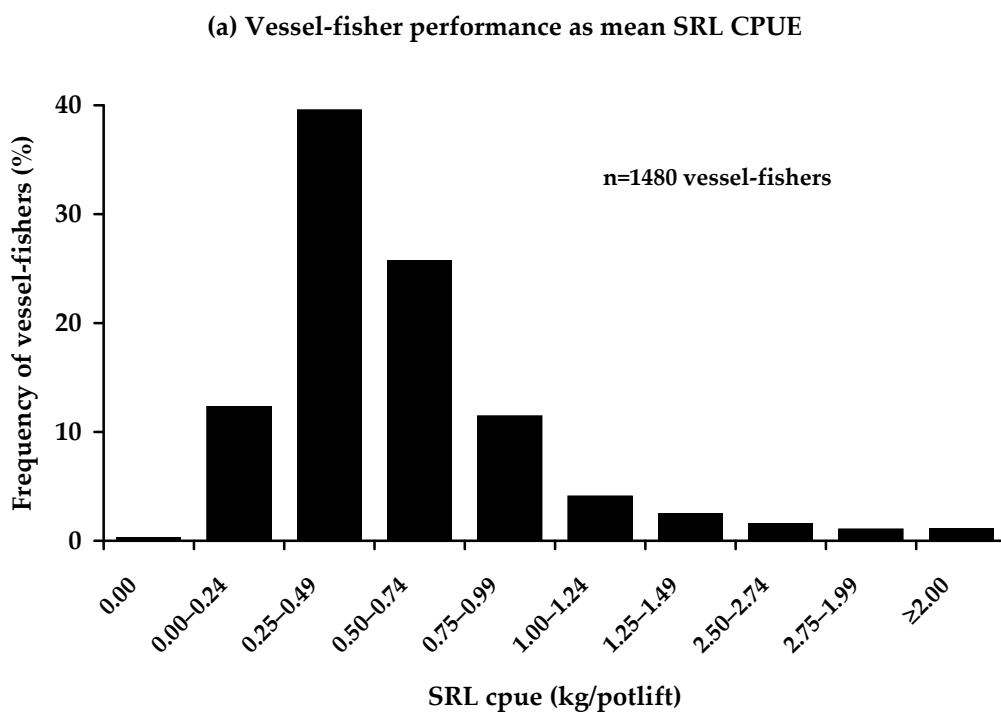
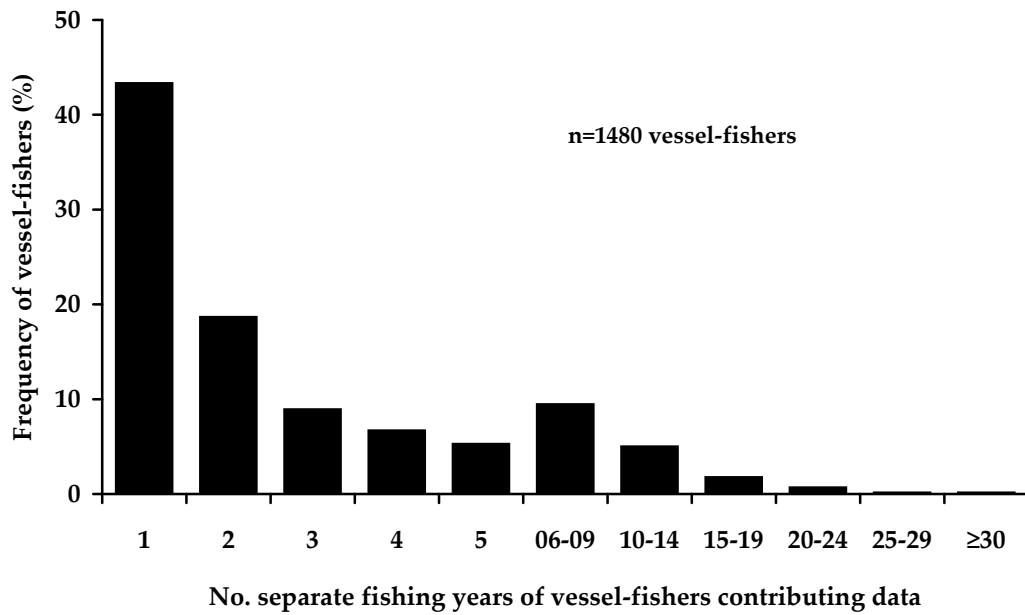


Figure 3. Vessel-fisher performance as SRL mean CPUE (a) and mean annual catch (b) across both zones from 1978–79 to 2010–11

Screened data for 1480 vessel-fishers; CPUE, catch mass per unit effort ; SRL, southern rock lobster.  
 Data source: Fisheries Victoria CandE Database (16 November 2011)

(a) Number of separate fishing years of records contributed by vessel-fishers



(b) Catch mass & records no. against cumulative number of vessel-fishers

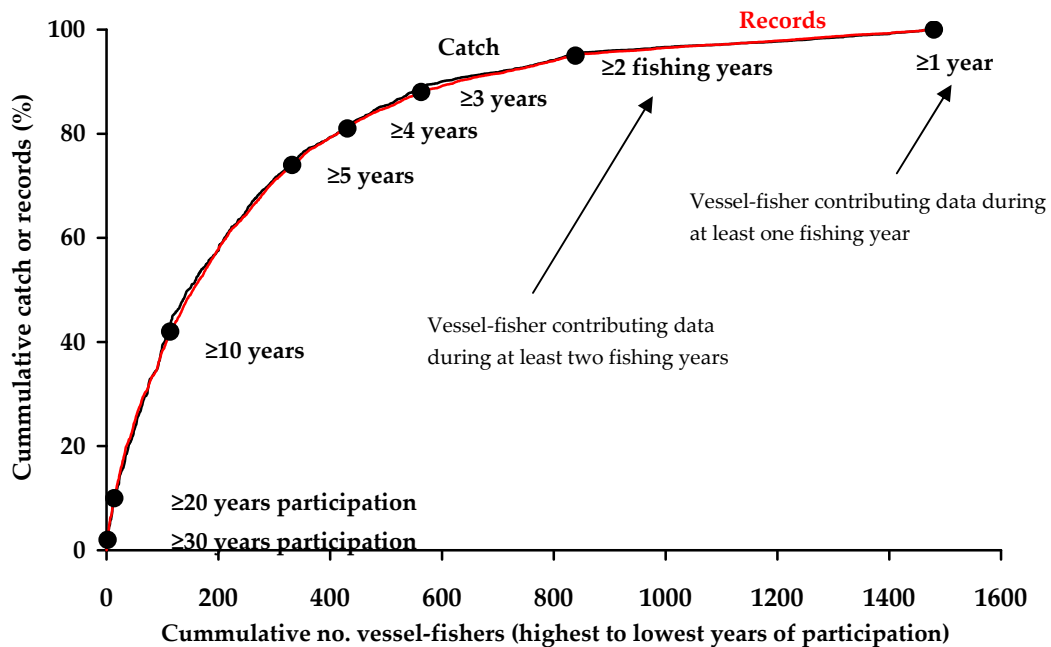


Figure 4. Effects of reducing the minimum number of fishing years of data contribution by vessel-fishers on catch mass and record no. across both zones

Screened data for 1480 vessel-fishers (contributed data for one or more fishing years during the period from 1978–79 to 2010–11); SRL, southern rock lobster.

Data source: Fisheries Victoria CandE Database (16 November 2011)

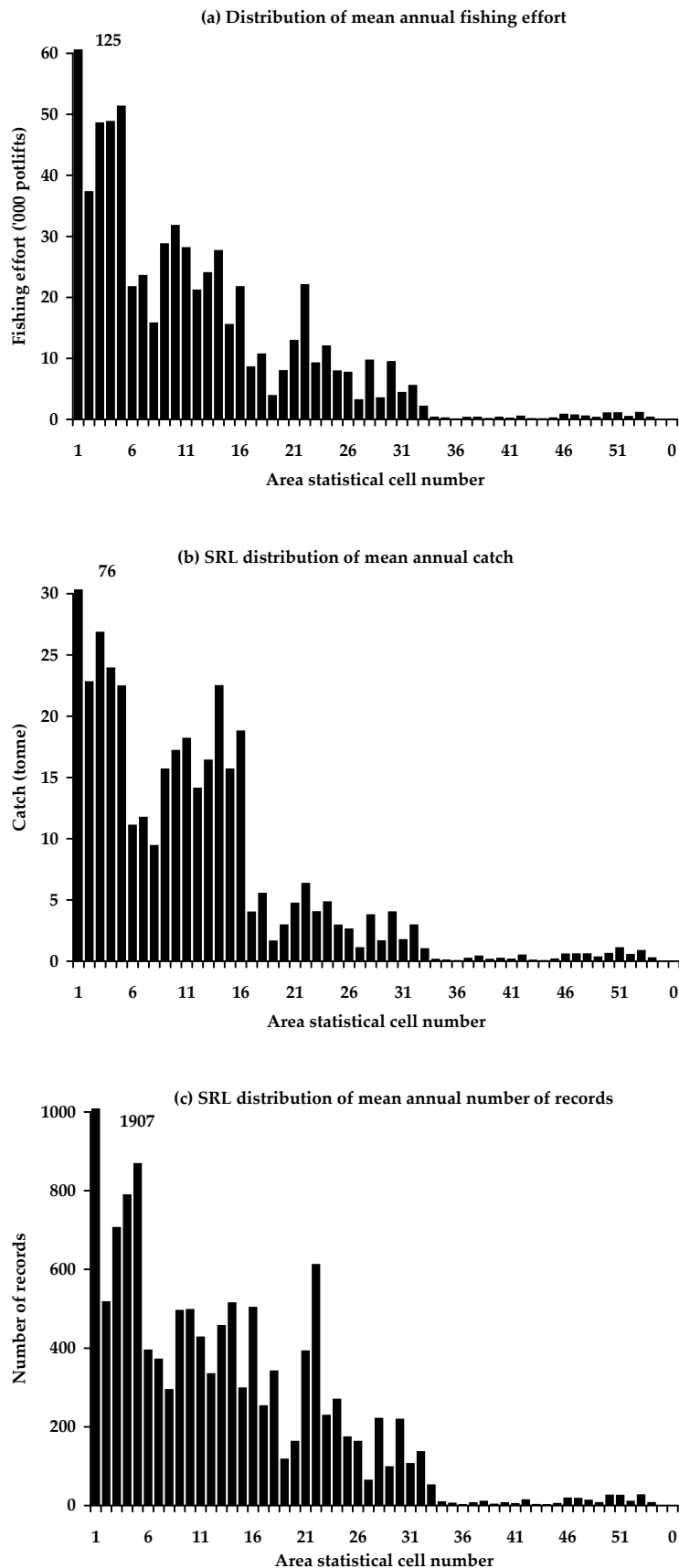


Figure 5. SRL mean annual fishing effort (a), mean annual catch mass (b), and mean annual number of records (c) for each area statistical cell (10 minutes of longitude) across both zones from 1978–79 to 2010–11

Screened data for 563 selected vessel-fishers (contributed data in >2 fishing years); SRL, southern rock lobster.

Data source: Fisheries Victoria CandE Database (16 November 2011)

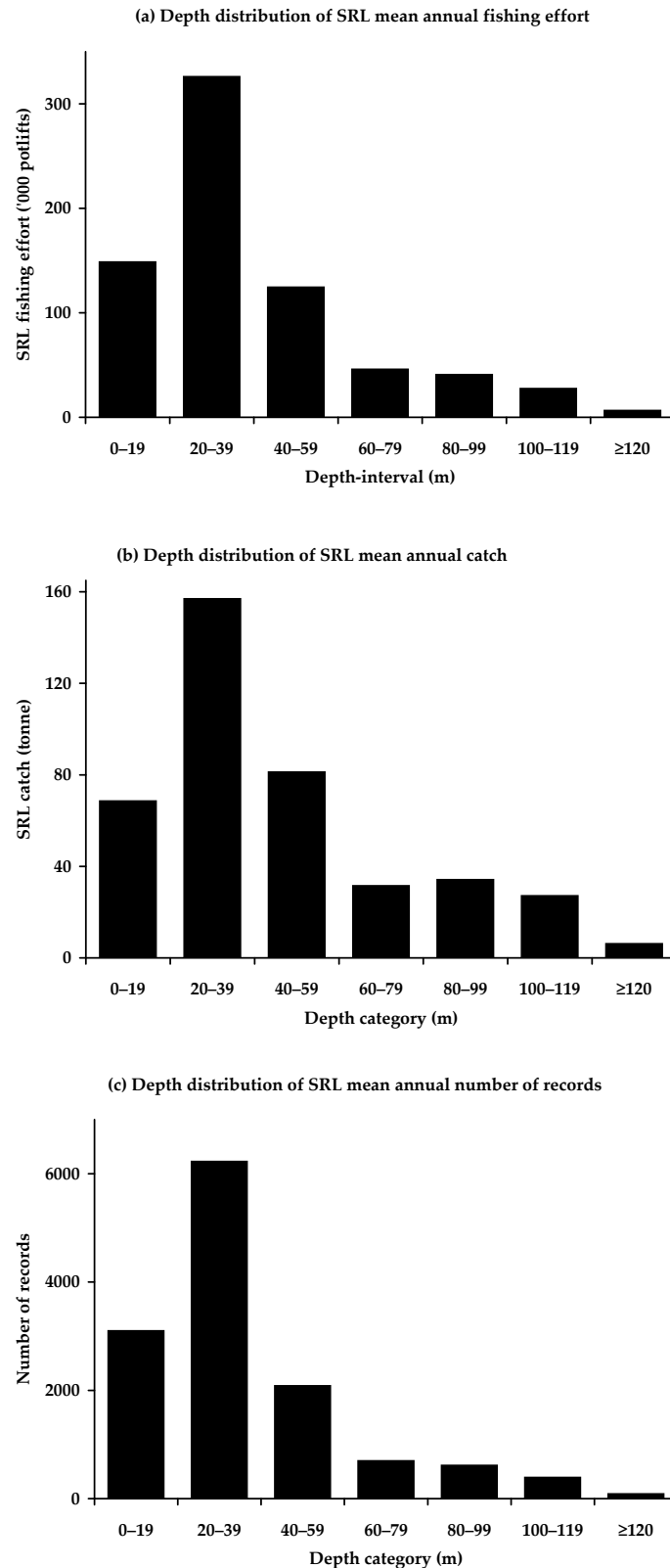
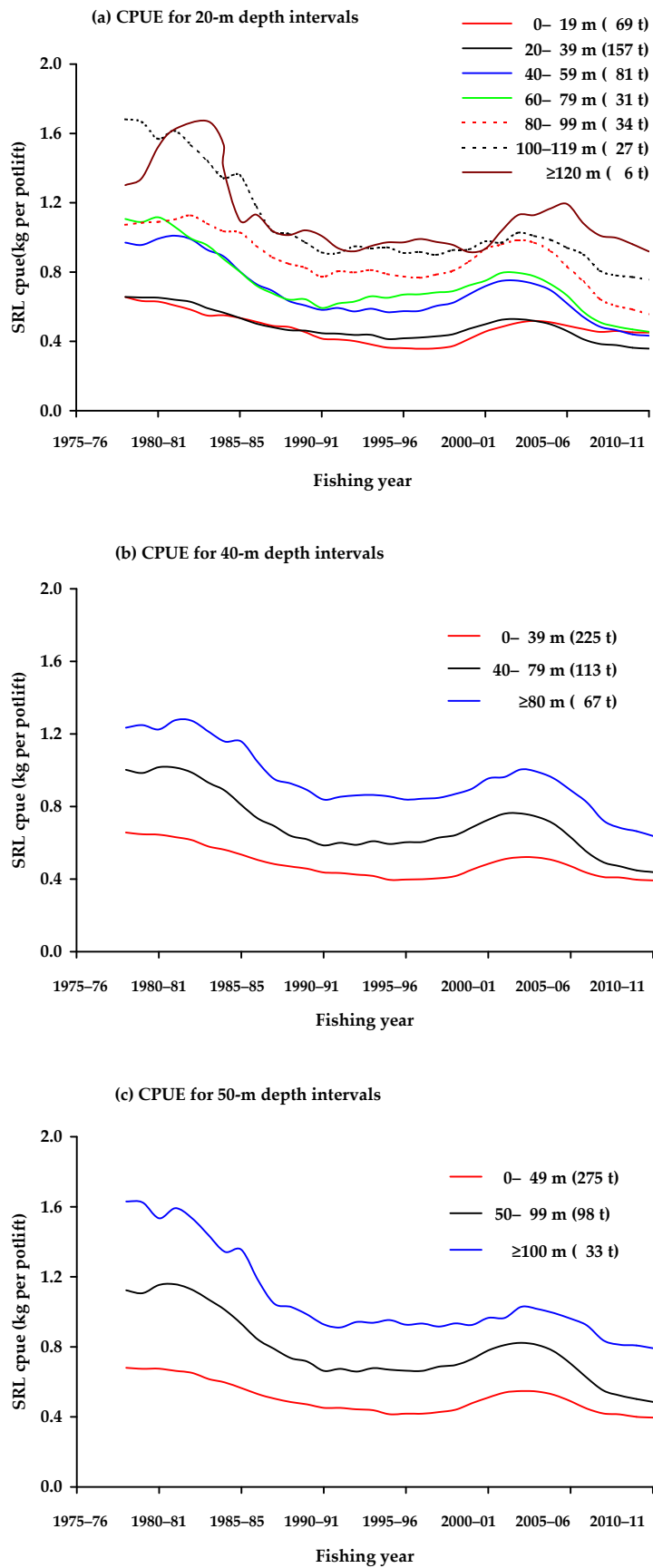


Figure 6. SRL mean annual fishing effort (a), mean annual catch mass (b), and mean annual number of records (c) by 20-m depth interval across both zones from 1978-79 to 2010-11

Screened data for 563 selected vessel-fishers (contributed data in >2 fishing years); SRL, southern rock lobster.

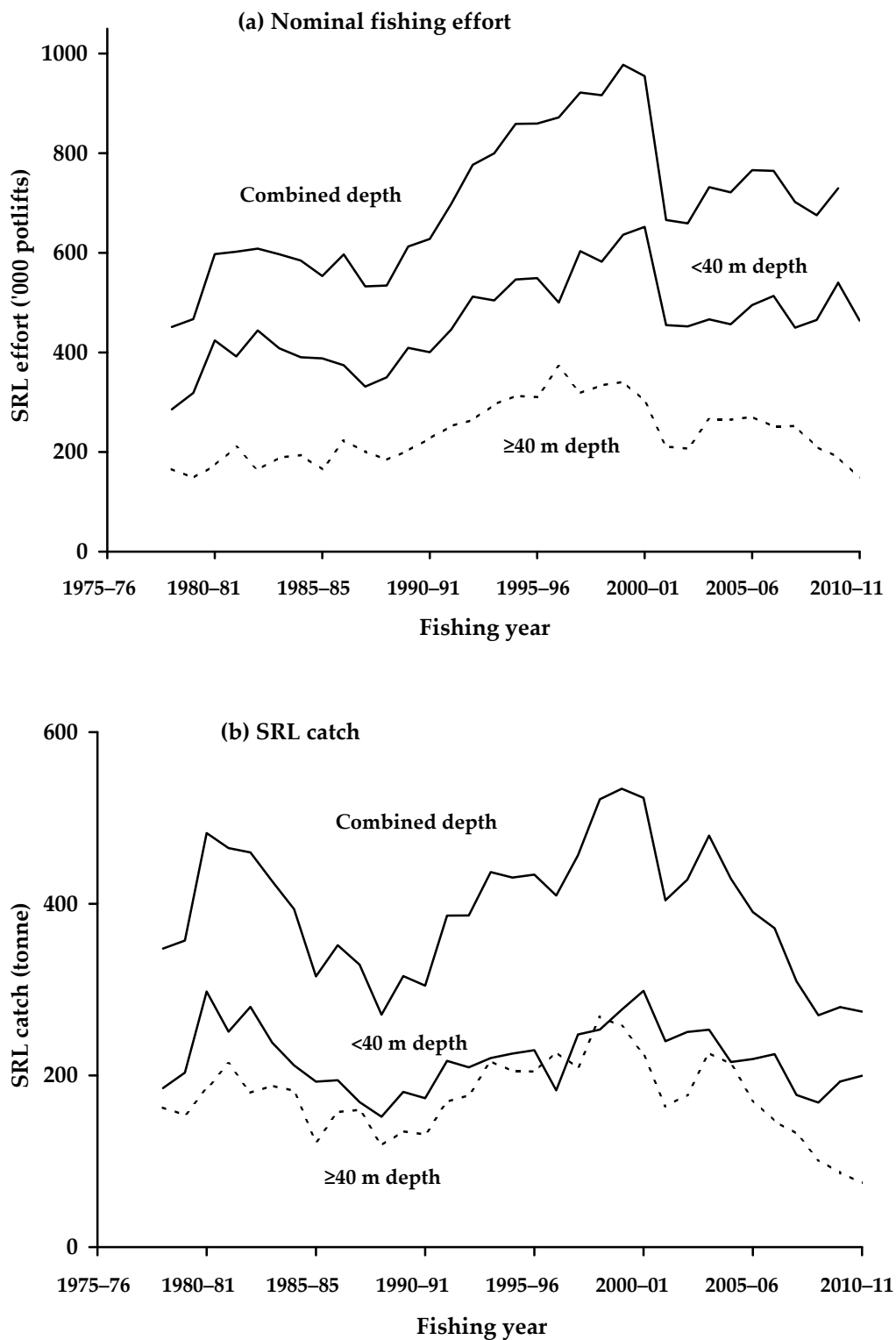
Data source: Fisheries Victoria CandE Database (16 November 2011)



**Figure 7. SRL trends in CPUE (5-year running average) for selected depth-intervals across both zones from 1978-79 to 2010-11**

CPUE, screened catch mass per unit effort data for 563 selected vessel-fishers (contributed data in >2 fishing years); mean annual catch mass in parentheses in legend; SRL, southern rock lobster.

Data source: Fisheries Victoria CandE Database (16 November 2011)



**Figure 8. Nominal SRL effort and catch mass trends in <40 m and ≥40 m depth ranges across both zones from 1978–79 to 2010–11**

Data: non screened and non-selected; SRL, southern rock lobster.

Data source: Fisheries Victoria CandE Database (16 November 2011)

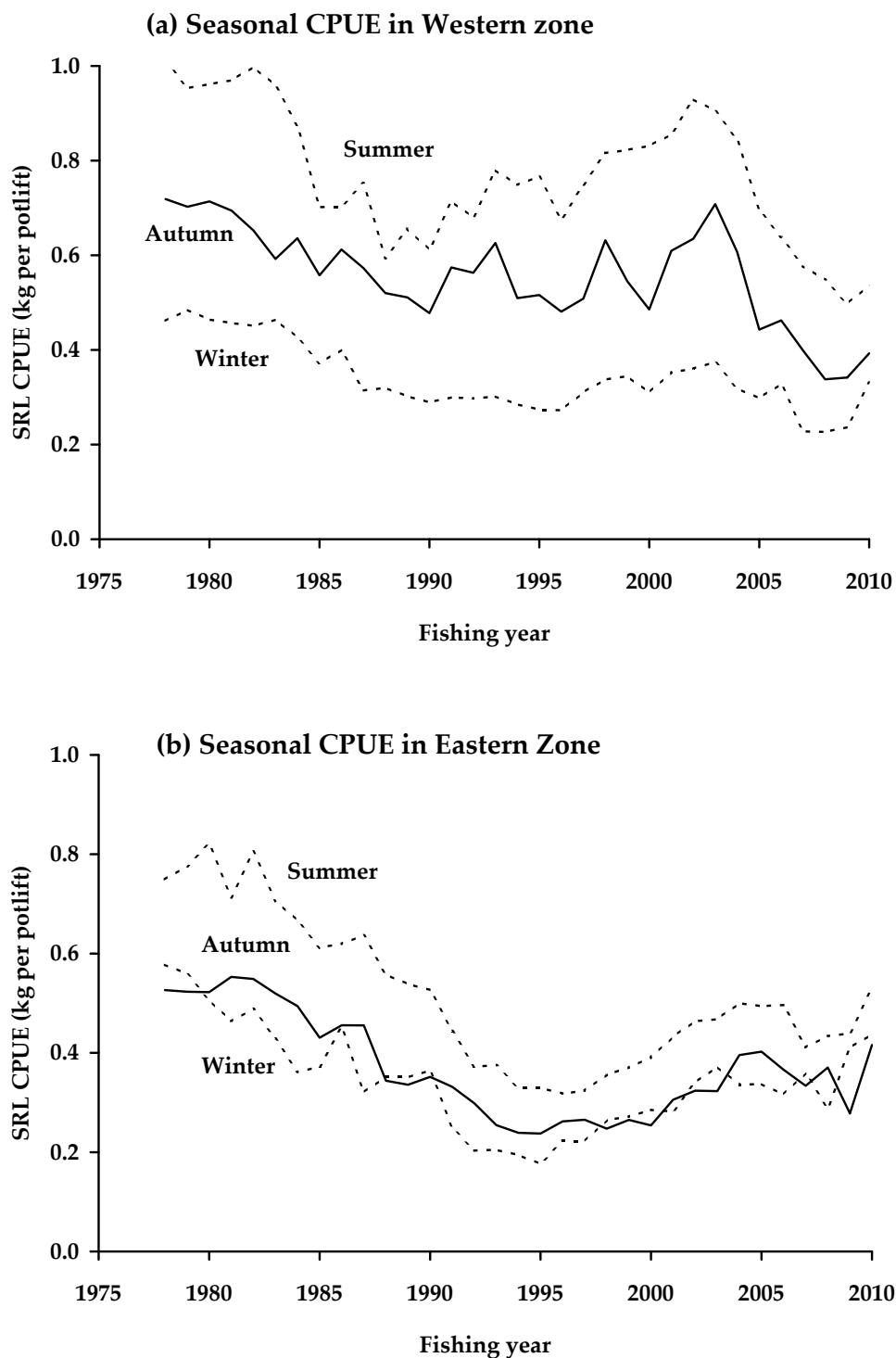


Figure 9. SRL seasonal cpue trends in Western Zone (a) and Eastern Zone (b) from 1978–79 to 2010–11.

CPUE, screened catch mass per unit effort data for selected vessel-fishers (320 in Western Zone and 155 in Eastern Zone contributed data in >2 fishing years);SRL, southern rock lobster; the seasons are defined as Summer (Nov–Feb), Autumn (Mar–May), and Winter (Jun–Sep).

Data source: Fisheries Victoria CandE Database (16 November 2011)



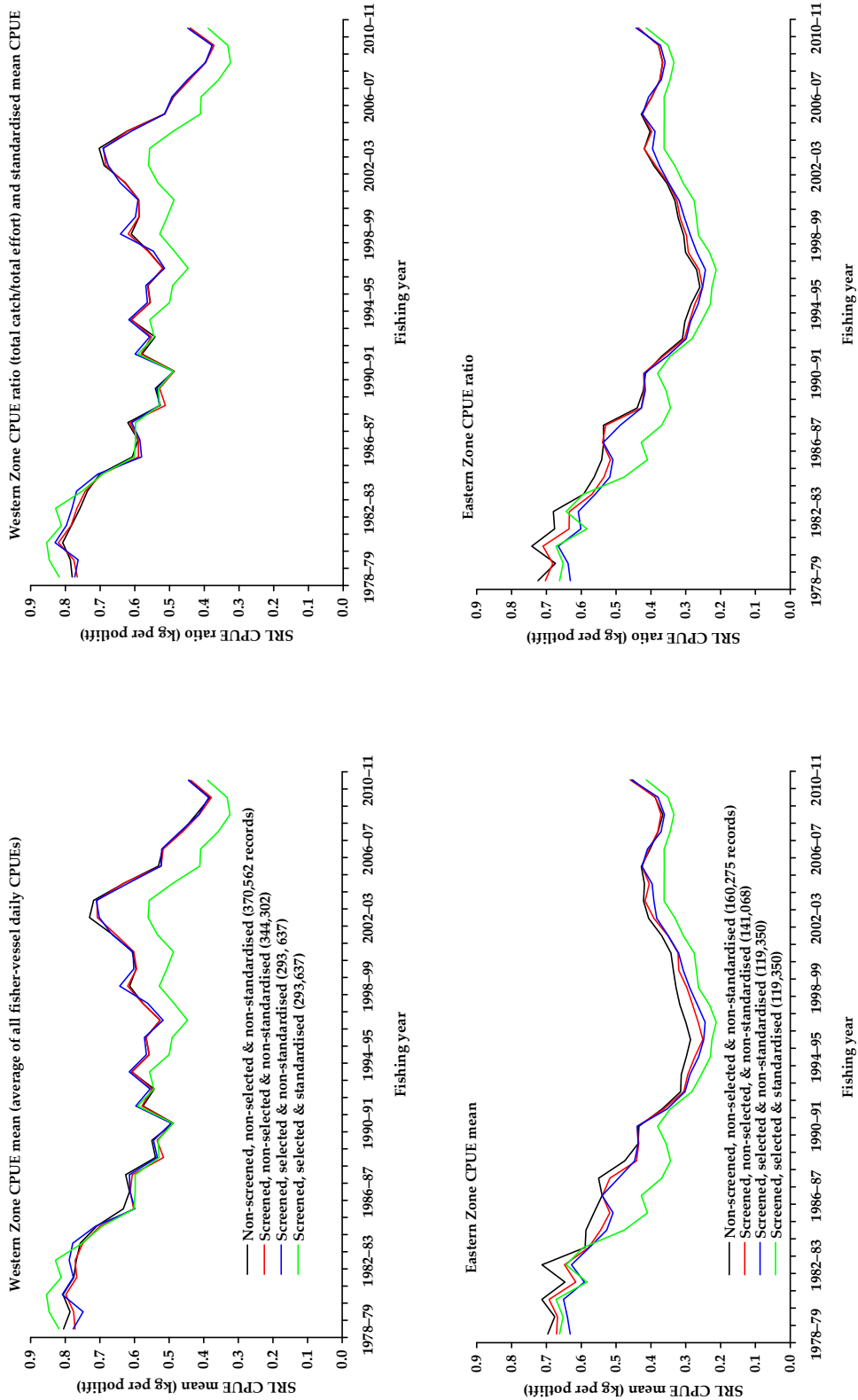


Figure 10. SRL targeted mean CPUE (left) and ratio CPUE (right) trends for Western Zone (top) and Eastern Zone (bottom) for different CPUE record processing for fishing years from 1978-79 to 2010-11

SRL, southern rock lobster; GC, giant crab; CPUE, catch mass per unit effort data expressed as the mean of daily CPUEs from all vessel-fishers or as ratio of total catch/total effort; data were variously non-screened and non-selected, screened (10 steps) and non-selected, and screened and selected (selected vessel-fishers contributed data in >2 fishing years and ≥200 records); targeting SRL or both SRL and GC (CC targeted records rejected).

Data source: Fisheries Victoria CandE Database (16 November 2011)

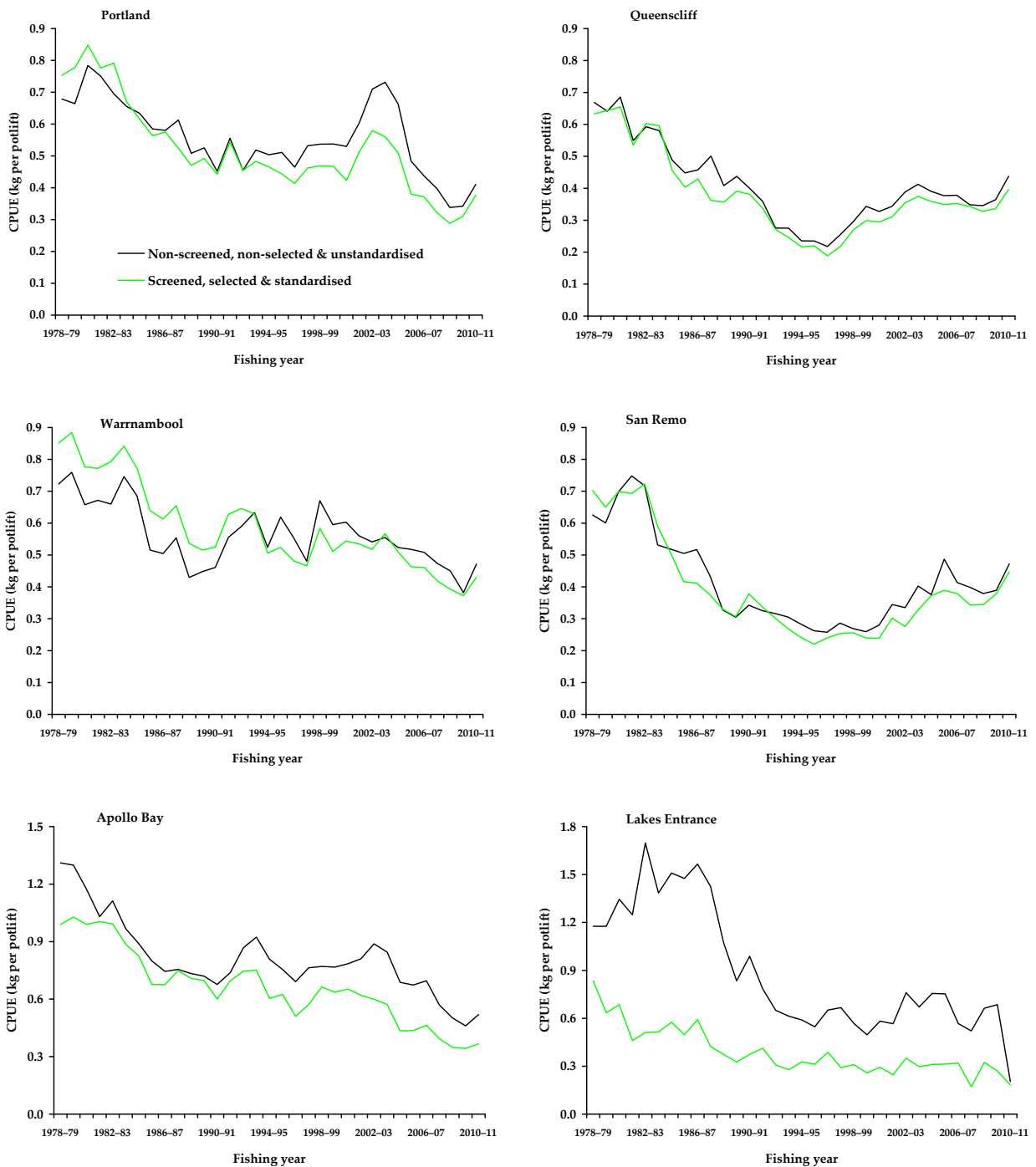


Figure 11. SRL unstandardised CPUE and standardised CPUE for each region during fishing years from 1978-79 to 2010-11

SRL, southern rock lobster; GC, giant crab; CPUE, catch mass per unit effort targeting SRL or both SRL and GC (GC targeted records rejected); unstandardised CPUE is ratio of total catch/total nominal fishing effort.

Data source: Fisheries Victoria CandE Database (16 November 2011)