

FISHERY SITUATION REPORT 7. SOUTHERN ROCK LOBSTER

Rock Lobster Research Group
South Eastern Fisheries Committee

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SOUTH EASTERN FISHERIES COMMITTEE

The South Eastern Fisheries Committee, a committee of the Standing Committee of the Australian Fisheries Council, was set up in 1969 as one of three regional management and research committees.

The South Eastern Fisheries Committee co-ordinates interstate fisheries management and research activities in waters adjacent to New South Wales, Victoria, Tasmania and South Australia. In addition to its co-ordinating role, it also provides a forum for discussion in fisheries science and management, and advises management authorities on problems referred to it by member organisations.

The Committee is composed of representatives of the Commonwealth Department of Primary Industry, CSIRO Division of Fisheries Research, New South Wales, Victoria, Tasmania and South Australia.

A number of fisheries in the area are of such importance as to warrant special attention by a group of experts. These Research Groups constantly monitor the state of the fisheries and discuss current research.

FISHERY SITUATION REPORTS

To assist the Committee in its management role, the Research Groups prepare and maintain situation reports for these fisheries for which they are responsible. The reports outline the present state of the fishery, its history and management. In addition, the current state of knowledge on the biology of the species and the population dynamics of the exploitable stocks is outlined.

To broaden public knowledge of the fisheries of south eastern Australia, these situation reports are produced as a series by the Committee.

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INDEX

Introduction	1
Biology	1
Fisheries	2
Fishing Localities	3
Fishing Gear and Methods	3
Population Parameter Estimates	4
Production	5
Markets	6
Management	7
Research	8
Economic Surveys	9
Prospects	10
References	18

Introduction

The southern rock lobster (*Jasus novaehollandiae* Holthius) is the principal rock lobster species of south eastern Australia and supports a fishery which dates back to the days of early settlement with a recent (since 1950) history of expansion in response to world demand for lobsters and rock lobsters. Winstanley (1973) reviewed the history of the Tasmanian fishery and its management. Fielder and Olsen (1967) described some historical data for the Tasmanian, South Australian and Victorian fisheries.

The Australian southern rock lobster is one of six closely related species occurring separately in southern temperate oceans. It inhabits reef areas off southern Australia from the shoreline to the edge of the continental shelf.

At present Australia annually produces 12-15,000 tonnes (live weight) of rock lobster of which about 3,400 tonnes (23-28%) is southern rock lobster worth \$13-15 million to fishermen in Tasmania, Victoria and South Australia. Southern rock lobsters also comprise parts of the rock lobster landings of Western Australia (about 20 tonnes annually) and New South Wales (not recorded separately).

This report reviews the southern rock lobster fishery off Tasmania, Victoria and South Australia.

Biology

Published and unpublished work describing aspects of the biology of southern rock lobsters has been reviewed by Fielder and Olsen (1967) and Winstanley (1977).

Seasonal biological events which are associated with the moult and reproductive cycles occur at different times over the range of the species. Off eastern Victoria and Tasmania mature females usually moult and mate in April and May and are in berry until hatching in September and October when most males moult. Off western Victoria and South Australia these events occur progressively later with the female moult and mating occurring in June and July with hatching and male moult in October and November.

Hickman (1946) found that the numbers of eggs carried by female rock lobsters off south eastern Tasmania varied with size between 69,000 and 400,000 at 74 and 124 mm TCL (total carapace length), respectively. Much larger females do occur and produce more eggs.

After hatching the larvae spend 8-9 months in a planktonic phase then metamorphose to the puerulus stage (transparent miniature rock lobster) and settle on the bottom. The means and extent of dispersal of the planktonic larvae and their return to the coastal waters is not known but observations in Tasmanian, Victorian and South Australian waters show that puerulus settlement usually occurs from June to August although minor settlement may occur at other times. Detailed studies off South Australia (Lewis 1977) show greatest settlement in July and August, 8-9 months after hatching: the extent of settlement varies markedly from year to year but growth from the 10.3 mm TCL puerulus to a mean size of 36.5 mm TCL one year later appears to be constant.

Rock lobsters grow by a series of moults which occur at decreasing frequency with increasing age.

Recent tagging studies have shown that the growth of southern rock lobsters varies with locality. As an illustration the estimated ages at which male rock lobsters reach the Tasmanian legal minimum length, 110 mm TCL, at three localities off eastern Tasmania are 7, 10 and 20 years.

Southern rock lobsters are carnivorous and eat molluscs, small crustaceans, echinoderms and other benthic invertebrates (Hickman 1946). General activity and feeding behaviour are most pronounced during the evening and are affected by the reproductive and moult cycles; hence the seasonal nature of the fishery.

Tagging experiments off south eastern South Australia and western Victoria have shown that rock lobsters close to shore tend to move offshore by 0.5 - 15 km. Other movements of up to 89 km in 12-20 weeks have been recorded (Lewis 1975).

Tunas, other pelagic fishes and planktonic predators feed on rock lobster larvae. Small benthic juveniles are eaten by many fishes including southern rock cod (*Physiculus barbatus*), flatheads (Fam. Platycephalidae), wrasses (Fam. Labridae) and morwongs (Fam. Cheilodactylidae). Larger juveniles and small adults (40-80 mm TCL) are eaten by conger eels (*Leptocephalus wilsoni*) and rock ling (*Genypterus blacodes*). Gummy sharks (*Mustelus antarcticus*) and octopuses feed on juveniles and adults.

Fisheries

In 1980 there were 367 licensed rock lobster vessels in South Australia (northern zone 107, southern zone 260), 324 in Tasmania and 199 in Victoria (western zone 106, eastern zone 93).

Catch rates are usually highest in mid-summer after male rock lobsters have moulted and females have stripped their eggs. The proportions of females to males and of small legal sized animals are usually greatest at this time. Both of these proportions and the overall catch rate decline as the season progresses. The overall proportion of females in the commercial catch varies from approximately 50% in South Australia to 10% in Tasmania. Many rock lobster fishermen participate in one or more other fisheries.

Fishing Localities (see Fig. 1)

Tasmanian fishing grounds extend from the Furneaux and eastern Bass Strait islands, around the east, south and west coasts to King Island and off north western Tasmania. Catch rates are highest on the north western grounds and the highest monthly catch rates occur during November and December. The main fishing season is from November to March with a minor "run" in July and August. Victorian boats take about 15% of the catch from Tasmanian waters, mainly from around the Bass Strait islands.

Approximately 75% of the catch from Victorian waters comes from the western zone (west of 143° 40'E). The grounds occur from the shore to depths of 130 m, 40 km from the shore off Portland and Port Fairy and become less extensive and closer to the shore to the east. From Cape Otway to Wilsons Promontory the main grounds are confined to a strip along the coast with a few offshore reefs. East of Lakes Entrance discontinuous coastal and offshore reefs support a small fishery. The main fishing season is from November to March with a minor run in the June/September period.

About 75% to 80% of the South Australian catch is taken in the southern zone with the fishing season from October to April. The remainder of the South Australian catch is taken in the northern (waters off Kangaroo Island, Port Lincoln and west coast of South Australia) zone with the fishing season from November to May.

Small catches are taken off the southern New South Wales coast and the south west coast of Western Australia.

Fishing Gear and Methods

Commercial fishing gear and methods have been described by Hughes (1971). Beehive-type pots are used universally throughout the region. In Tasmania and eastern Victoria these are usually made from woven sticks and wire with woven cane necks. Western Victorian fishermen use pots made of wire mesh on mild-steel frames with either woven cane or moulded plastic necks. Pots made of wire mesh on steel frames or 50 x 75 mm weldmesh, with moulded plastic necks,

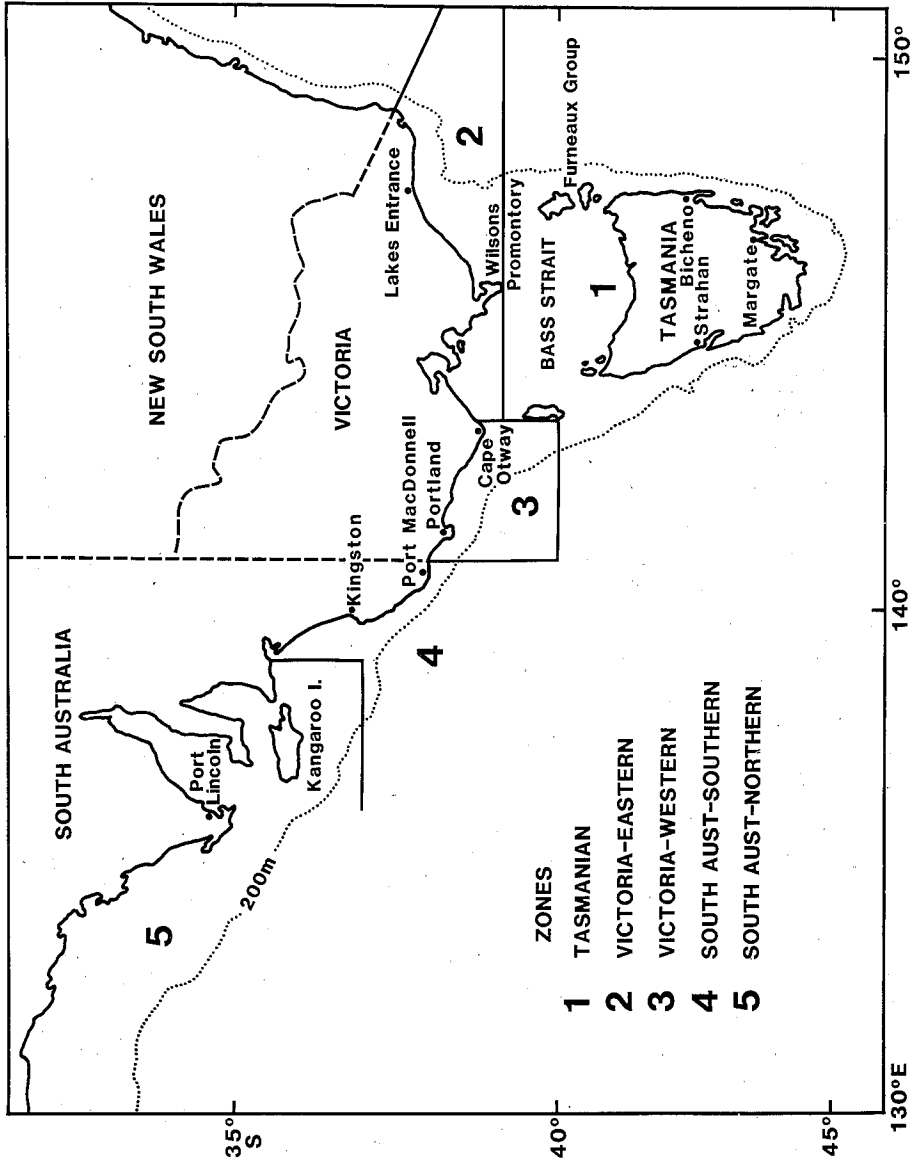


Fig. 1 The southern rock lobster fishery

are widely used in South Australia. Provision for the escape of undersized rock lobsters must be made in all Tasmanian and South Australian pots.

Throughout the region pots are usually set overnight and hauled at first light. In most areas fishermen return to port each day but in more remote areas, such as the Tasmanian south and west coasts, and the South Australian west coasts, fishermen may stay at sea for several days. At some times of the year and in some areas pots are also set and hauled once or twice during the day.

Snoek (*Leionura atun*) and gemfish (*Rexea solandri*) heads, Australian salmon (*Arripis trutta esper* and *A. trutta marginata*) and European carp (*Cyprinus carpio*) are the most popular baits used in this fishery. Imported fish (mainly from New Zealand), shark heads, other fishes, sheep heads and cattle hocks are also used.

Mechanical or hydraulic pot haulers are used universally, often in conjunction with hinged pot tippers mounted on the bulwarks to aid in bringing pots aboard.

Vessels of displacement construction with wells or circulating tanks are in general use although small boats such as those operating from Lorne (Victoria) have neither. Planing-hull boats have become popular in the South Australian fishery and comprise approximately 50% of the fleet.

The catch is landed alive and transported to processing plants or markets.

Amateur fishermen use baited hoop nets in Victoria and Tasmania and may also use pots in South Australia and Tasmania.

Population Parameter Estimates

Tasmanian tag and recapture studies suggest that the natural mortality rate is approximately 0.2. Similar studies off western Victoria indicate fishing mortality rates varying with locality from 0.2 - 0.6; fishing mortality rates are about 30% lower for females than for males.

Provisional growth parameters have been estimated for several localities from tag and recapture studies, and mortality and exploitation rates have been estimated from tag return and catch and effort data, and these are shown in Table 1.

Production

Since 1964/65 annual production of southern rock lobster has varied from 3,400 to 5,000 tonnes (Table 2).

Annual production from Victorian waters (Table 3) rose to a level of 550-600 tonnes which was maintained from 1969/70 till 1973/74; since then it has fallen to about 300 tonnes and annual fishing effort has decreased. The catch per potlift has steadied at 0.7 - 0.8 kg after a decline.

Tasmanian annual production (Table 3) fluctuated around 1,800 tonnes until 1973/74 and has since declined. Annual effort has also declined but the reason for this is unclear as the catch per potlift has been stable for over 10 years.

Since the introduction of licence limitation in 1967/68, South Australian annual production was maintained at an average of 2,300 tonnes, with a catch per potlift of 0.9 kg, until 1975/76. Since then average annual production has been 1,900 tonnes with the same catch per potlift (Table 3).

In addition to inferred changes in abundance of rock lobsters, factors which have affected annual production and effort levels include changes in legal minimum lengths, the restrictions imposed on the Victorian shark fishery in 1972 and the deteriorating economic state of the rock lobster fishery in many regions.

Note that for management purposes the quantities shown under Victorian eastern and western zones (see Table 4), reflect catches from Victorian waters but Victorian landings of rock lobsters caught in Tasmanian waters are shown under Tasmanian production figures. Catch and effort data by zone for South Australia are given in Table 5.

Markets

Disposition of Catch

Over 90% of the Australian rock lobster catch is exported and most of these exports are sent to the US as rock lobster tails. Exports of whole rock lobsters have increased from 4% of the total value of exports in 1976/77 to almost 20% in 1978/79.

About 20% of Australian rock lobster exports came from South Australia and Tasmania; most of the Victorian catch is sold locally. The composition and direction of these exports is similar to those of all Australian rock lobster exports, but a higher proportion of production (about 30%) is sold on the domestic market.

Current Market Situation

The market situation for Australian rock lobster in early 1980 has to be viewed against the following background.

The value of rock lobster exports in 1978/79 increased 11% on the previous year to \$70 million. As in the previous year the rise was due largely to an increase of sales of whole rock lobster which were valued at \$13.6 million in 1978/79 compared with \$2.3 million in 1976/77.

In contrast, sales of rock lobster tails rose only slightly in both quantity and average unit value. The reasons for Australia's stable prices were a 2.5% devaluation of the US dollar against the Australian dollar and the predominance of larger rock lobsters in the Australian product, the major price increases being for the smaller sized categories. Much of the Australian catch of smaller rock lobster is sold whole to Japan.

In the US, despite the generally poor state of the economy and the high interest rates, the market remained buoyant throughout the early part of the 1979/80 season. This has been reflected in returns received by Australian producers.

In South Australia the cash price offered in February 1980 ranged from \$5.40 per kg to \$6.00 per kg.

The Japanese market for whole cooked rock lobster was seriously depressed in 1978/79 and remained so in early 1980. There was a large backlog of Cuban rock lobster. The market for live rock lobster was stronger although it was subject to fluctuations throughout the season.

The most important influence on rock lobster prices in recent years has been greatly increased demand, primarily as a result of the greater affluence of the US population. Rock lobster is a luxury food eaten mainly in expensive restaurants and an increasing proportion of Americans are able to afford to eat out in such places. Associated with this has been the growing participation of women in the labour force which has not only raised total family income but also developed a predisposition towards eating out. Smaller family size has also operated to increase the proportion of income available for luxury spending, such as dining out. There has also been a strong growth in the number of business lunches.

Management

The fishery is divided into five zones; two (western and eastern) are managed by Victoria, two (northern and southern) by South Australia and one by Tasmania, all in collaboration with the Commonwealth Government. The appropriateness of the management regimes is under constant review.

Limited entry management policies control the numbers of licensed boats and pots in each zone and together with closed seasons, legal minimum lengths and other measures are intended to conserve the rock lobster stocks and promote the economic well-being of fishermen. These objectives have met with only limited success partly because of limitations of the measures themselves and partly because of the effects of changes in other fisheries (e.g. the edible shark fishery) and in economic circumstances in Australia and overseas.

Because of the deteriorating economic state of the fishery in most zones some traditional management policies that impede economic efficiency (e.g. rigid pot per boat-length formulae and non-transferability of pots) are being revised (e.g. Anon. 1978) and vessel buy-back schemes are being considered in South Australia (Copes 1978).

A summary of the main regulations controlling the fishery in all zones is shown in Table 7.

The Export (Fish) Regulations, administered by the Commonwealth Department of Primary Industry, prescribe the conditions and restrictions which apply to exported rock lobster products. These products must be processed in a registered export establishment, inspected and passed for export, comply with the relevant standard for rock lobster and be labelled in accordance with the Regulations.

Research

Most current and recent research has been directed towards providing data and information on which management decisions can be made. Subjects of past studies include size at maturity and fecundity of females, seasonal moulting and reproductive cycles and their effects on catch rates, diurnal movement and feeding behaviour.

Current tagging projects in Tasmania, South Australia and Victoria are investigating growth rates, movement patterns and mortality rates.

In Tasmania, analyses of catch and effort data have been conducted to estimate optimum fishing intensity and expected maximum yields. The influence of fishing on the size structure of the stocks off southern Tasmania has also been studied (Bradbury and Wolfe 1975). Field testing led to the introduction of escape gaps into pots in 1970 as a conservation measure. A recent survey to estimate the impact of amateur fishing on the stocks indicated an annual amateur catch of 90 to 127 tonnes.

Ad hoc investigations of southern rock lobsters off Victoria include studies of the effects of escape gaps in

rock lobster pots (Walker 1977), a survey of the extent of offshore reefs off western Victoria (Winstanley 1980) and the tagging projects referred to previously.

In South Australia, research has concentrated on the south eastern region with quantitative collector and diving studies to determine puerulus settlement times, and post-settlement growth (Lewis 1977). Measurements of various environmental parameters that may influence rock lobster catches have shown an annual cold water upwelling which occurs between November and March and is most pronounced off the southern coast (and western Victoria) where the continental shelf is closest to the shore, adversely influencing commercial catch rates off Port MacDonnell.

CSIRO has developed computer programs to analyse commercial catch and effort data from fishermen's monthly returns. These programs were made available to the States which are now responsible for the processing of their own data. CSIRO is continuing to analyse commercial catch sampling data to provide monthly size and sex composition breakdowns for various sub-areas in the southern rock lobster fishery.

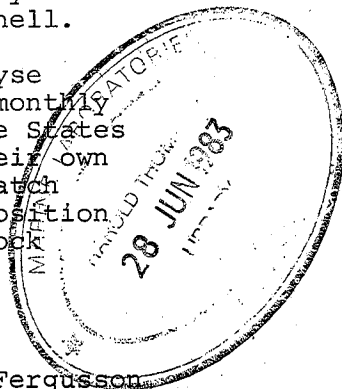
Economic Surveys

Economic surveys of the Tasmanian (Smith and Fergusson 1969) and Victorian (Anon. 1970) rock lobster fisheries were conducted for the years 1964/65 and 1962/63 - 1965/66, respectively. Results of more recent surveys (Anon. 1979, Sudmalis 1980), of the Tasmanian, Victorian and South Australian fisheries indicate that the fisheries have suffered an economic decline to the point where, on average, fishermen would earn more from other work and with their capital invested outside the fishery. The situation is worst in the eastern and western Victorian and southern South Australian zones.

Increases in costs, notably crew payments, fuel and insurances, exceeded price increases during the last decade.

Below-trend production in recent years, the absence of alternative fisheries and restrictions placed on the inter-related school shark fishery have also contributed to the deterioration in the economic state of the fishery.

It appears to be widely accepted that any strategy for restoring the economic viability of the fishery should include a reduction in the numbers of licensed boats, a redistribution of pots among the remaining fishermen and the removal of management policies and regulations which impede economically efficient operations (Anon. 1978, Sudmalis 1980).



The means by which these changes may be effected are evolving by consultation between the fishermen's organizations and the State fisheries authorities.

It appears that southern rock lobsters are being exploited on all the existing grounds off south eastern Australia and that the recent decline in catches from all zones has resulted more from decreased fishing effort than from changes in abundance. Assuming that this decline in effort is largely a result of deteriorating economic conditions in the fishery then the most realistic prospects for a recovery must rest with the current efforts to restructure the fishery.

Prospects

It appears that all the fishable grounds off south eastern Australia are being exploited and that there is little likelihood that increased annual effort would produce a sustainable increase in production.

Analyses of catch and effort statistics indicate a maximum sustainable yield of 1,600 tonnes for the Tasmanian fishery.

The maximum sustainable yield for the Victorian fishery is approximately 600 tonnes and it is expected that annual production will continue to vary between 250 and 400 tonnes.

South Australian management measures have stabilized that State's catch at 2,000-2,500 tonnes.

February 1981

Table 1

Provisional population parameter estimates for rock lobsters:

Von Bertalanffy growth parameters K, L_{∞}
 Legal minimal lengths LML (mm)
 Ages at first capture t (years)
 Total mortality Z
 Fishing mortality F
 Exploitation rates E

Locality	Sex	Parameter				
		K	L_{∞}	LML	t	Z*
<u>TASMANIA</u>						
East Coast	Male	0.12	158	110	10	1.35
	Female	0.14	117	105	16	0.77
Taroon	Male	0.12	153	110	7	-
	Female	0.27	111	105	12	-
Adventure Bay	Male	0.10	131	110	20	0.23
	Female	0.07	90	105		0.19
<u>S.E. SOUTH AUSTRALIA</u>						
	Male	0.14	202	98.5	5	-
	Female	0.22	143	98.5	6	-
<u>WESTERN VICTORIA</u>						
Cape Bridgewater (inshore, 0-45m)	Male	-	-	110	0.64	0.76
	Female	-	-	105	0.50	0.71
Offshore (80-120m)	Male	-	-	110	0.29	0.59
	Female	-	-	105	0.20	0.50

* based on Tasmanian estimate for natural mortality $M = 0.2$.

Table 2

Total annual southern rock lobster production, effort and catch per unit effort for south eastern Australia.

Year	Production (tonnes - live weight)	Effort (potlifts $\times 10^3$)	Kg per potlift
1964/65	4,275	2,697	1.59
1965/66	5,144	3,508	1.47
1966/67	5,403	5,133	1.05
1967/68	4,590	4,108	1.12
1968/69	4,676	4,613	1.01
1969/70	4,234	4,421	0.96
1970/71	4,596	4,309	1.07
1971/72	4,501	4,443	1.01
1972/73	5,246	4,668	1.12
1973/74	4,413	4,198	1.05
1974/75	4,002	3,817	1.04
1975/76	4,040	3,901	1.01
1976/77	3,665	-	-
1977/78	3,610	-	-
1978/79	3,501	-	-

Sources of the production and effort figures shown are the Australian Bureau of Statistics, Tasmanian Fisheries Development Authority, Victorian Fisheries and Wildlife Division and the South Australian Department of Fisheries.

Annual southern rock lobster production, effort and catch per unit effort for Victoria, Tasmania and South Australia.

	Victoria			Tasmania			South Australia		
	tonnes - live weight	potlifts x 10 ³	kg per potlift	tonnes - live weight	potlifts x 10 ³	kg per potlift	tonnes - live weight	potlifts x 10 ³	kg per potlift
55	353	274	1.29	1685	1180	1.43	2237	1242	1.80
56	456	355	1.28	1935	1433	1.35	2753	1720	1.60
57	428	397	1.08	2138	1584	1.35	2837	3152	0.90
58	449	450	1.00	1981	1478	1.34	2160	2180	0.99
59	520	549	0.95	1867	1598	1.17	2289	2466	0.93
60	604	654	0.92	1552	1373	1.13	2078	2394	0.87
71	601	673	0.89	1687	1250	1.35	2308	2386	0.97
72	581	766	0.76	1703	1252	1.36	2217	2425	0.91
73	581	807	0.72	1954	1242	1.57	2711	2619	1.03
74	557	706	0.79	1514	1096	1.38	2342	2396	0.97
75	379	544	0.70	1593	1045	1.52	2030	2228	0.91
76	407	530	0.77	1385	1007	1.38	2248	2364	0.95
77	302	-	-	1472	1109	1.33	1891	2298	0.82
78	307	-	-	1446	1127	1.28	1857	2204	0.84
79	259	-	-	1565	1095	1.43	1938	2337	0.83
80	-	-	-	1337*	-	-	1971	1990	0.99

* Processors' figures only, final figures approximately 15% higher.

Table 4

Southern rock lobster production, effort and catch per effort from the western and eastern management zones and the totals for Victorian waters; figures for 1974/75 and 1975/76 are preliminary estimates.

Year	Western Zone			Eastern Zone			Total from Victorian waters		
	Catch kg live weight	Potlifts	kg/pl	Catch kg live weight	Potlifts	kg/pl	Catch kg live weight	Potlifts	kg/pl
1964/65	232,794	175,299	1.33	120,687	98,673	1.22	353,481	273,972	1.29
1965/66	324,887	250,248	1.30	130,885	104,977	1.25	455,772	355,225	1.28
1966/67	307,780	287,932	1.06	119,893	108,947	1.10	427,673	396,879	1.08
1967/68	371,860	372,956	1.00	77,357	76,553	1.01	449,217	449,509	1.00
1968/69	412,935	455,477	0.91	106,931	93,314	1.15	519,866	548,791	0.95
1969/70	429,928	495,281	0.87	174,279	158,893	1.10	604,207	654,174	0.92
1970/71	440,836	497,138	0.89	160,040	176,016	0.91	600,876	673,154	0.89
1971/72	458,227	582,741	0.78	123,171	183,039	0.67	581,398	765,780	0.76
1972/73	463,246	638,050	0.73	118,248	169,182	0.70	581,494	807,232	0.72
1973/74	428,999	554,562	0.77	127,714	151,738	0.84	556,713	706,300	0.79
1974/75	286,161	429,826	0.66	92,630	114,246	0.81	378,791	544,072	0.70
1975/76	302,686	406,135	0.75	103,878	123,368	0.84	406,564	529,503	0.77

Table 5

Southern rock lobster production; effort and catch per effort from the northern and southern management zones and totals for South Australia.

Year	Northern Zone			Southern Zone			Total		
	Catch kg live weight	Potlifts kg/pl	Catch kg live weight	Potlifts kg/pl	Catch kg live weight	Potlifts kg/pl	Catch kg live weight	Potlifts kg/pl	
1965/66	721,286	-	2,031,714	-	2,753,000	-	2,753,000	n.a.	
1966/67	621,303	-	2,215,697	-	2,837,000	-	2,837,000	n.a.	
1967/68	480,000	1.44	1,680,000	1,845,022	2,160,000	2,179,620	2,160,000	2,465,770	
1968/69	538,938	1.50	1,750,135	2,106,874	2,289,073	2,465,770	2,289,073	2,393,590	
1969/70	501,398	1.45	1,576,640	2,047,091	2,078,038	2,386,174	2,078,038	2,386,174	
1970/71	643,834	1.66	1,664,459	1,998,092	2,308,293	2,424,636	2,308,293	2,424,636	
1971/72	602,147	1.52	1,614,660	2,028,483	2,216,807	2,619,375	2,216,807	2,619,375	
1972/73	710,624	1.53	2,000,334	2,153,580	2,710,958	2,396,982	2,710,958	2,396,982	
1973/74	677,116	1.63	1,665,338	1,980,353	2,342,454	2,228,433	2,342,454	2,228,433	
1974/75	597,154	1.49	1,433,496	1,828,171	2,030,650	2,364,464	2,030,650	2,364,464	
1975/76	620,139	1.56	1,627,480	1,966,127	2,247,619	2,298,187	2,247,619	2,298,187	
1976/77	540,812	1.36	1,350,051	1,899,773	1,890,863	2,203,949	1,890,863	2,203,949	
1977/78	607,432	1.43	1,249,133	1,778,877	1,856,565	2,337,121	1,856,565	2,337,121	
1978/79	582,431	1.27	1,355,693	1,877,068	1,938,125	1,990,169	1,938,125	1,990,169	
1979/80	581,426	1.25	1,389,276	1,523,924	1,970,702	1,970,702	1,970,702	1,970,702	

Table 6

Prices paid to rock lobster fishermen and Consumer Price Index 1967/68 to 1979/80.

Year	Price to fishermen (\$/kg - live weight)				Index of prices to fishermen Australia	CPI(a)	
	SA	VIC	TAS	AUST		All groups	Food group
1967/68	1.41	1.47	1.58	1.62	100	100	100
1968/69	1.52	2.02	2.04	2.04	126	103	101
1969/70	1.54	1.85	1.75	1.72	106	106	103
1970/71	2.01	2.20	2.18	2.18	135	111	107
1971/72	2.38	2.49	2.58	2.59	160	118	112
1972/73	2.14	2.48	2.31	2.35	145	126	120
1973/74	2.36	2.79	2.50	2.55	157	142	143
1974/75	2.51	3.30	2.28	2.45	151	166	157
1975/76	2.85	4.02	2.99	3.28	202	187	172
1976/77	3.47	5.46	3.99	4.50	278	213	192
1977/78	3.82	5.12	4.21	4.55	281	233	213
1978/79	4.25	4.82	4.53	4.79	296	252	238
1979/80(b)	4.85	5.34	5.18	5.50	340	278	271

(a) CPI calculated using 1967/68 as base year. Actual CPI for 1967/68 for weighted average of six State capital cities were: All groups 103.3 and Food group 104.7.

(b) Prices to fishermen are preliminary estimates by Fisheries Division, Commonwealth Department of Primary Industry.

Table 7 Summary of main management measures operating in the southern rock lobster fishery zones.

Area limits:	South Australia		Victoria		Tasmania
	Fish N zone only	Fish S zone only	Fish W zone only	Fish E zone only	Fish any area in Tasmanian zone
Closed seasons:	♂ June 1-Oct 31 ♀ June-Oct 31	♂ May 1-Sept 30 ♀ June-Oct 31	♂ Oct 1-31 ♀ June 1-Oct 31	♂ Sept 1-Oct 31 except NW waters Oct 1-31 and King Is - nil	♀ June 1-Oct 31 except King Is June 1-Nov 30
Legal minimum length (total carapace length):	♂ & ♀ 9.85cm		♂ 110 mm ♀ 105 mm	♂ 110 mm ♀ 105 mm	
Pot limits:	1 pot per 305 mm boat length plus 10	1 crew: 1 pot per 305 mm boat length plus 20. 2 or more crew: 1 pot per 305 mm boat length plus 40	1 crew: 1 pot per 305 mm boat length plus 20. 2 or more crew: 1 pot per 305 mm boat length plus 40	1 pot per 305 mm	Limit based on boat length or tonnage. Total pot ceiling of 10,000
Gear specifications:	Buoys diameter 20 cm and marked with boat registration number	Buoys diameter 20 cm and marked with boat registration number	Buoys marked with boat registration number	Buoys marked with boat registration number	Escape gap (5.7 x 25 cm, at least 7 cm above bottom)
Amateur limits:	Divers 5 per day, no spearing; 3 pots per boat.	Divers 5 per day, no spearing; 3 pots per boat.	Divers 4 per day, no spearing; 2 hoopnets per person, 6 rock lobsters per day.	Divers 4 per day, no spearing; 2 hoopnets per person, 6 rock lobsters per day.	Divers 5 per day, no spearing; 4 hoopnets, 1 pot per person 5 rock lobsters per day.

Additional: Limited entry policies apply in all zones. Berried females are protected at all times. In general, Commonwealth regulations in proclaimed waters conform to adjoining State's regulations.

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