

Overview

This chapter contains information on Victoria's primary industries. Topics covered include agriculture, fishing, forestry and mining.

The majority of agricultural data in the chapter are derived from the annual Agricultural Census. Readers should be aware that from 1993–94 the Agricultural Census included those establishments with an Estimated Value of Agricultural Operations (EVAO) of \$5,000 or more. In both 1991–92 and 1992–93 the scope of the census was establishments having an EVAO of \$22,500 or more. This change in scope of the Census means care should be taken when comparing results from census periods 1993–94 onwards with results of previous censuses.

Agriculture

The 1996–97 Agricultural Census included 36,656 establishments with agricultural activity. Average seasonal conditions were experienced across the State during the year, with good conditions occurring in the principal grain-growing regions of the Wimmera and Mallee. Accordingly, small increases were recorded in the average wheat yield in these regions compared to the yield in 1995–96. The dairy industry continued to make gains in production and the number of milk cattle increased by 6.1% over the year. There was a small decrease in meat cattle numbers during the year while sheep numbers rose marginally. The sheep industry experienced a continued downward trend in wool prices over the 1996–97 year. The bright side for the sheep industry rested in strong prices for the prime lamb sector. Overall, fruit and vegetable production increased over the previous season with a record high in the production of apples.

The total gross value of agricultural commodities produced was \$6.1 billion, a 5% decrease compared with the previous season. An increase in the value of livestock slaughterings and other disposals (up 4% to \$1.4 billion) offset, to some extent, the decreases recorded for the gross value of all crops (down 9% to \$2.5 billion) and value of livestock products (down 6% to \$2.1 billion). Mixed results in production and lower average unit values contributed to the fall in the value of crop production. Barley for grain and chick peas recorded the more significant falls in gross value. The decrease in value of livestock products was primarily due to a fall in the value of milk used for manufacturing.

Victoria compared with Australia

In terms of farm income, as measured in the Australian National Accounts, Victoria's share for the latest six year period (1992–93 to 1996–97) fluctuated markedly (table 14.1). The 1996–97 Victorian figure was \$1,613 million, which represented 29.7% of the total Australian farm income of \$5,431 million.

The Gross Value of Agricultural Commodities Produced (GVACP) provides a measure of the output from farming. In 1996–97, the GVACP for Victoria

was \$6,063 million, or 22% of the Australian total of \$28,090 million. In terms of value, Victoria produced 16% of Australia's crops, 23% of livestock slaughtered, and 37% of livestock products (wool, milk, eggs, and honey).

14.1 AUSTRALIAN NATIONAL ACCOUNTS, Farm Income

Year	Victoria	Australia	Victoria as a percentage of Australia
	\$m	\$m	%
1991-92	1 011	1 937	52.2
1992-93	1 220	3 134	38.9
1993-94	1 429	3 710	38.5
1994-95	816	2 064	39.5
1995-96	1 909	5 450	35.0
1996-97	1 613	5 431	29.7

Source: Australian National Accounts: State Accounts, Main Tables, (Cat. no. 5220.0.40.001).

14.2 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED

Particulars	Year ended 30 June						Victoria as a percentage of Australia 1997
	1992 \$m	1993 \$m	1994 \$m	1995 \$m	1996 \$m	1997 \$m	%
Crops	1 834.1	2 111.1	2 172.9	1 770.6	2 772.5	2 527.4	15.7
Livestock slaughterings and other disposals	1 282.5	1 271.5	1 485.8	1 375.4	1 370.6	1 419.6	22.9
Livestock products	1 705.5	1 824.9	1 877.8	2 001.4	2 251.8	2 115.5	36.8
Grand total	4 822.1	5 207.5	5 536.5	5 147.4	6 388.9	6 062.5	21.6

Source: Livestock Products, Australia (Cat. no. 7215.0).

Wheat

Wheat is still Victoria's largest crop in terms of area and production. In 1996-97, the area sown increased by 13% to 962,600 hectares with a corresponding increase in production to 2,262,300 tonnes (table 14.3). The average yield per hectare increased slightly to 2.4 tonnes per hectare from the figure of 2.3 recorded in 1995-96. Of the major cereals for grain, wheat accounted for 60% of the total production, with a gross value of \$485 million.

14.3 WHEAT FOR GRAIN

Season	Area	Production	Average yield per hectare
	'000 ha	'000 tonnes	tonnes
1991-92	664	1 150	1.7
1992-93	821	2 015	2.5
1993-94	780	2 022	2.6
1994-95	822	944	1.1
1995-96	853	1 921	2.3
1996-97	963	2 262	2.4

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Barley and oats

Barley is grown throughout the State, however production has been traditionally centred in two distinct areas where high quality grain is produced. The highest production is in the south-west of the Mallee Statistical Division and the adjacent north-western Wimmera Statistical Division. The second source of high quality barley grain is in an area between Melbourne, Geelong, and Bacchus Marsh in southern Victoria (table 14.4).

Oats are sown for grain production, winter grazing, and hay production. A significant portion of the total production of oats is held on farms for future use, with the balance being used for compound/urban feed markets, milling, and export.

14.4 BARLEY AND OATS FOR GRAIN

Season	Barley			Oats		
	Area '000 ha	Production '000 tonnes	Average yield per hectare tonnes	Area '000 ha	Production '000 tonnes	Average yield per hectare tonnes
1991-92	534	898	1.7	183	300	1.6
1992-93	551	1 116	2.0	223	404	1.8
1993-94	639	1 386	2.2	186	362	2.0
1994-95	492	448	0.9	148	201	1.4
1995-96	628	1 342	2.1	187	392	2.1
1996-97	585	1 189	2.0	175	304	1.7

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Other crops

Other cereal crops are maize, millet and triticale (a wheat/rye hybrid). Production and area planted for them is small compared to major cereal crops of wheat, oats and barley. Triticale is a recent introduction to agriculture and has shown a steady growth in the area sown and production since 1992 (table 14.5).

14.5 OTHER CEREAL CROPS FOR GRAIN

Season	Maize		Millet		Triticale	
	Area '000 ha	Production '000 tonnes	Area '000 ha	Production '000 tonnes	Area '000 ha	Production '000 tonnes
1991-92	0.3	3.0	0.9	1.7	18.9	34.6
1992-93	0.4	2.8	0.8	1.6	22.6	50.0
1993-94	0.2	1.7	1.4	2.1	32.4	70.7
1994-95	0.7	5.1	1.7	2.6	47.0	66.2
1995-96	1.1	6.8	1.0	1.8	54.8	120.5
1996-97	1.0	6.5	2.5	4.1	93.0	167.2

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Oilseeds

Canola is the main oilseed crop grown in Victoria, with 92,200 hectares sown in 1996–97, an increase of 21% from 1995–96 (table 14.6). Canola production increased by 10% to 131,600 tonnes in 1996–97. Other main oilseed crops in 1996–97 were safflower, soybeans and sunflowers. Wimmera Statistical Division was the principal area for growing oilseed crops, accounting for 57% of the total oilseed crop area with a total of 64,800 hectares sown.

14.6 SELECTED OILSEEDS PRODUCTION

Season	Canola(a)		Safflower		Sunflower		Soybeans	
	Area '000 ha	Production '000 tonnes	Area '000 ha	Production '000 tonnes	Area '000 ha	Production '000 tonnes	Area '000 ha	Production '000 tonnes
1991–92	23.0	26.5	19.7	12.1	1.4	2.2	1.5	2.4
1992–93	18.5	23.5	15.4	12.3	1.2	1.8	1.2	2.5
1993–94	29.2	46.8	29.4	24.4	2.4	3.7	2.0	4.4
1994–95	74.5	56.7	17.7	8.2	0.9	1.5	1.8	2.3
1995–96	76.2	119.6	25.1	17.1	1.6	2.2	2.0	4.0
1996–97	92.2	131.6	18.0	8.8	1.4	1.7	1.8	4.0

(a) Rapeseed.

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Field and chick peas comprise the main legumes grown for grain in Victoria. In 1996–97 the area sown to both was slightly up on 1995–96. However, production declined for both crops with field peas (213,300 tonnes in 1996–97) decreasing by 18% on 1995–96 production and chick peas (171,900 tonnes in 1996–97) decreasing by 14%. The gross value of these crops in 1996–97 was \$52.7 million for field peas and \$48.5 million for chick peas.

Orchard fruit and nuts

In Victoria, the area planted with fruit, nuts, and berries in 1996–97 was 23,873 hectares, and the area of vineyards was 21,338 hectares. Although the total represented only about 2% of the total area under crops, fruit and grapes contributed 26% of the gross value of crops produced.

The main fruit-growing areas are in the Goulburn, Mallee, and Melbourne Statistical Divisions. There are other important, but smaller areas throughout the State, including areas in the Ovens-Murray, Wimmera and Loddon Statistical Divisions.

Apple production is still the most significant fruit crop in Victoria with a gross value of production of \$124.4 million. In 1996–97, a record crop of 119,000 tonnes was produced. Pears, oranges and peaches are the next most important orchard fruit grown. The total gross value of production of orchard fruit, including nuts, was \$375.1 million.

Almonds are the most significant nuts grown in Victoria, with production in 1996–97 increasing by almost 28% to 3,731 tonnes (table 14.7). Almonds are mainly planted in the northern area; walnuts and chestnuts in situations with deep soil in the north-east, the Dandenongs and Gippsland; and hazelnuts on shallower soils in the north-east and Dandenongs.

14.7 ORCHARD FRUIT AND NUT PRODUCTION

Type of fruit	Year ended 31 March		
	1995	1996	1997
	tonnes	tonnes	tonnes
Almonds	2 805	2 907	3 731
Apples	98 971	78 988	118 968
Apricots	10 649	7 026	8 935
Cherries	2 391	2 353	2 007
Grapefruit	n.a.	n.a.	3 044
Lemons and limes	6 088	4 829	6 371
Mandarins	3 830	4 963	5 320
Nashi	5 910	6 036	4 596
Nectarines	6 175	6 919	7 033
Olives	n.a.	n.a.	240
Oranges	84 253	72 358	88 963
Peaches	34 354	36 353	43 487
Pears	132 786	135 189	146 060
Plums and prunes	4 312	3 756	4 618

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Small fruit

Climatic requirements have restricted the commercial production of strawberries, and cane and bramble fruits in particular, to the cooler southern regions of Victoria. Consequently most of this fruit is grown in the Dandenong Ranges and the Mornington Peninsula areas, which are relatively close to the Melbourne markets. In recent years, fruit growers in other parts of the State, principally Goulburn, Ovens-Murray and Gippsland, have diversified into strawberries, raspberries and kiwi fruit, particularly for the fresh fruit market.

14.8 SMALL FRUIT PRODUCTION

Type of fruit	Year ended 31 March		
	1995	1996	1997
	tonnes	tonnes	tonnes
Strawberries	2 921	3 279	3 376
Kiwi Fruit	2 731	2 063	2 255
Raspberries	224	220	208
Blueberries	n.a.	n.a.	98

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Grapes

Grape growing, particularly for winemaking, is extensive throughout Victoria. The Mallee Statistical Division is the principle grape-growing region, with most vines being grown under irrigation. Ovens-Murray and Goulburn Statistical Divisions are also major grape-growing regions—irrigation is used extensively in both areas. The increasing interest in wine grapes over recent years has resulted in the establishment of many vineyards of varying sizes throughout the State.

Grape production decreased by 23% in 1996–97 over 1995–96 to 329,687 tonnes with a gross value of production of \$214.7 million, or 30% of the Australian gross value of \$721.5 million (table 14.9).

14.9 VITICULTURE, Area and Production

Season	Bearing	Non-bearing	Winemaking	Drying and table(a)
	ha	ha	tonnes	tonnes
1991-92	18 490	981	104 398	294 514
1992-93	19 049	1 014	118 452	192 448
1993-94	19 535	1 511	167 083	192 150
1994-95	18 989	2 603	137 613	139 822
1995-96	19 821	3 267	199 141	227 550
1996-97	21 338	4 018	181 772	147 915

(a) Production for drying is estimated as fresh weight equivalent of dried weight.

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

14.10 AREA OF GRAPEVINES AND PRODUCTION, By Variety—1996-97

Variety	Area planted		Production tonnes	Average yield(a) tonnes/ha
	Not yet bearing ha	Bearing ha		
Red grapes				
Cabernet Franc	3	83	623	7.5
Cabernet Sauvignon	606	1 006	8 679	8.6
Currant (including Carina)	28	512	9 056	17.7
Frontignanc Red	0	0	0	0.0
Grenache	5	83	1 051	12.7
Merlot	300	195	1 617	8.3
Muscat Hamburg	0	0	0	0.0
Pinot Noir	182	420	n.a.	n.a.
Shiraz	699	1 055	9 061	8.6
Ruby Cabernet	81	110	n.a.	n.a.
Other red grapes	201	1 221	18 197	14.9
<i>Total red grapes</i>	<i>2 104</i>	<i>4 683</i>	<i>48 283</i>	<i>10.3</i>
White grapes				
Chardonnay	884	2 457	32 050	13.0
Chenin Blanc	7	111	2 317	20.9
Colombard	46	276	8 321	30.2
Doradilo	0	42	1 111	26.6
Muscat Gordo Blanco	75	1 022	23 636	23.1
Riesling	10	360	4 610	12.8
Sauvignon Blanc	119	229	2 548	11.1
Semillon	203	153	2 450	16.0
Sultana	413	10 382	189 134	18.2
Traminer	0	45	445	9.8
Waltham Cross	3	337	4 075	12.1
Other white grapes	154	1 240	10 706	8.6
<i>Total white grapes</i>	<i>1 914</i>	<i>16 655</i>	<i>281 403</i>	<i>16.9</i>
Total	4 018	21 338	329 687	15.5

(a) Yield is production per hectare of bearing vines.

Source: Agstats on Floppy Disk (Cat. no. 7117.0).

Wine exports

Exports of Victorian sparkling and table wines totalled over \$121.4 million in 1997–98 (table 14.11). The United States of America was the main destination for wine exported from Victoria, receiving \$43.0 million in 1997–98, most of which was comprised of red table wine (\$25.6 million) and white table wine (\$13.6 million). Other major export destinations for wine exported from Victoria in 1997–98 were United Kingdom (\$29.1 million), Canada (\$8.9 million) and Japan (\$7.3 million).

14.11 EXPORTS OF SPARKLING AND TABLE WINES

	Quantity		Value (f.o.b.)	
	1996–97	1997–98	1996–97	1997–98
	'000 litres	'000 litres	\$'000	\$'000
White table wine	5 743	6 412	31 990	37 356
Red table wine	6 992	9 292	49 126	72 971
Table rose	9	10	25	79
Sparkling wine	461	579	4 219	7 097
Fortified wine	106	193	836	1 675
Other wine	137	201	1 115	1 509
Vermouth and other flavoured wine	59	60	963	751
Total	13 507	16 747	88 274	121 438

Source: Unpublished data, Fastraccs.

Vegetables

Most of the fresh vegetable production in Victoria is located in the Melbourne, Central Highlands, Gippsland, East Gippsland and Goulburn Statistical Divisions.

Potatoes, the most significant vegetable produced, are grown mainly in the Melbourne (at Toolangi and Koo-wee-rup), Central Highlands (around Ballarat), and Gippsland (Thorpdale) Statistical Divisions, with additional areas around Warrnambool, the Bellarine Peninsula, Colac, and the Otway Ranges. The gross value of potato production in 1996–97 was \$123.5 million. The total gross value of vegetable production was \$445.1 million, which was up 10% on the previous year.

The tomato industry in Victoria is predominantly processing-oriented with most of the crop produced in the irrigated areas between Shepparton and Rochester in northern Victoria. Total production of tomatoes in 1996–97 was 167,563 tonnes, with a value of \$36.6 million (table 14.12).

14.12 VEGETABLES FOR HUMAN CONSUMPTION

Type of vegetable	Area sown			Production		
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
	ha	ha	ha	tonnes	tonnes	tonnes
Beetroot	75	66	51	879	824	664
Broccoli	2 923	3 304	3 384	14 583	17 349	19 198
Cabbages	750	864	691	27 875	30 603	23 221
Carrots	2 253	2 736	2 620	74 637	91 123	99 274
Cauliflowers	1 264	1 249	1 243	19 638	20 780	17 409
French beans	655	672	633	2 575	2 220	2 038
Green peas	293	181	157	699	407	221
Lettuce	1 639	2 071	1 969	34 155	45 785	36 557
Onions	512	545	529	15 427	17 604	15 615
Parsnips	238	284	286	3 843	6 708	7 238
Potatoes	10 135	11 457	11 352	279 876	355 649	315 727
Pumpkins	394	374	313	6 271	5 772	4 595
Tomatoes	2 812	2 991	2 661	139 541	171 805	167 563

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

Livestock and livestock products

Sheep numbers, including lambs, increased by almost 2% to 22.3 million head in 1996-97 (table 14.13). The number of sheep slaughtered increased by 11% over 1995-96, whilst the number of lambs slaughtered decreased marginally (table 14.14). The number of live sheep exported from Victorian ports was 835,900 with a value free on board of \$29.7 million. Numbers of cattle and pigs have remained relatively steady as have the numbers slaughtered.

14.13 SELECTED LIVESTOCK NUMBERS

Season	Cattle			Sheep	Pigs
	Dairy	Beef	Total		
	'000	'000	'000	'000	'000
1991-92	1 422	2 152	3 574	24 782	431
1992-93	1 463	2 226	3 689	23 552	423
1993-94	1 585	2 604	4 189	23 439	460
1994-95	1 622	2 663	4 285	21 361	439
1995-96	1 682	2 714	4 396	21 974	459
1996-97	1 784	2 627	4 411	22 325	485

Source: AgStats on Floppy Disk (Cat. no. 7117.0).

14.14 LIVESTOCK SLAUGHTERED

Types of livestock	1994-95	1995-96	1996-97
	'000	'000	'000
Sheep	3 513.8	2 519.3	2 806.6
Lambs	6 358.7	5 991.8	5 978.9
Cattle and calves	2 097.9	2 132.9	2 373.2
Pigs	1 191.3	1 160.2	1 197.3

Source: Livestock Products, Australia (Cat. no. 7215.0).

Sheep and wool

At 31 March 1997, the Victorian sheep population was 22 million head, well below the 1971 peak of 34 million head (table 14.13). Sheep numbers are widely distributed throughout the State. The Western District Statistical Division holds 29% of the States, sheep flock. The other significant Statistical Divisions are Wimmera (16%) and Central Highlands (15%). Total wool production in 1996–97 increased by 13% to 145,200 tonnes, with a gross value of \$513 million (table 14.15).

14.15 TOTAL WOOL PRODUCTION

Season	Clip tonnes	Stripped from or exported on skins (greasy) tonnes	Total quantity (greasy) tonnes
1991–92	116 574	28 791	145 365
1992–93	117 520	27 554	145 082
1993–94	110 035	14 500	124 535
1994–95	123 303	14 827	138 130
1995–96	115 672	12 857	128 529
1996–97p	131 682	13 524	145 206

Source: *Agriculture, Australia* (Cat. no. 7113.0).

Mutton and lamb production

Mutton, the meat from adult sheep, is mainly produced from sheep which are surplus to the wool industry; consequently production patterns correspond closely to expansions and contractions in that industry. In 1996–97, mutton production was 55,545 tonnes, up 8% on the previous year's figure of 51,317 tonnes.

Prime lamb producers are found throughout the State. However, early to mid-season producers are distributed in a broad band across northern Victoria, including some irrigated areas. In addition, a considerable number of early lambs are brought from southern New South Wales for slaughter in Victoria. Mid to late-season producers are located mainly in the Western District, Central Highlands, Gippsland, and parts of the Ovens-Murray Statistical Divisions. In 1996–97, 111,403 tonnes of lamb meat were produced.

Meat cattle

The Victorian environment is very favourable for beef production with cattle able to graze on pasture throughout the year. The herd is spread throughout the State, with the Western District, Goulburn, Ovens-Murray, East Gippsland and Gippsland Statistical Districts being the major regions. In 1996–97, there were 373,818 tonnes of beef and 14,293 tonnes of veal produced.

Dairy

Victoria is the largest producer of dairy products in Australia. In 1996–97, 62% of milk and about 85% of dairy exports came from Victoria and were valued at \$1.55 billion. The majority of exports are in the form of bulk commodities of skim milk powder, butter and cheese. Proportionally, milk used for manufacturing is utilised as follows: cheese 36%; skim milk powder and butter 40%; whole milk powder 14%; casein/butter 3%; and other dairy products 6%.

14.16 SELECTED DAIRY STATISTICS

Season	Total establishments with milk cattle no.	Dairy cattle		Whole milk intake by factories(a) million litres
		In milk and dry '000	Total '000	
1994-95	8 367	1 113.1	1 621.7	5 114
1995-96	8 471	1 160.8	1 681.8	5 482
1996-97	8 585	1 228.9	1 783.6	5 622

(a) Data is for year ended 30 June.

Source: *Agriculture, Victoria* (Cat. no. 7113.2); *Livestock Products, Australia* (Cat. no. 7215.0); *Australian Dairy Corporation*.

Pigs

Pig farming has been undergoing rapid change over the last few years, with many smaller producers leaving the industry. The number of commercial establishments with pigs declined by 9%, from 613 in 1996 to 556 in 1997. At the same time, the number of pigs in Victoria has risen by 6% to 485,200 pigs, and the average number of pigs per establishment has risen by nearly 17% from 748 to 873.

Poultry

In 1996-97, Victorian egg production for human consumption was 44.7 million dozen, 25% of the total Australian production. The gross value of production was \$57.8 million.

At 31 March 1997 there were 3.4 million hens for egg production held on farms, including replacement and breeding stock. The average size of farms was 22,000 hens, although there are many larger farms with up to 40,000 plus layers. The main areas for commercial egg production are centred on the outskirts of the Melbourne Statistical Division; other significant regions are the Goulburn, Barwon, Gippsland and Loddon Statistical Divisions.

In 1996-97, there were 86.7 million chickens slaughtered for human consumption (table 14.17). The total dressed weight was 129,930 tonnes (table 14.18). The gross value was \$240.7 million or 23% of the Australian total of \$1,053.3 million.

14.17 POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION

Year ended 30 June	Chickens (i.e. broilers, fryers, or roasters) '000	Other fowl and turkeys '000	Ducks and drakes '000
1992	73 921	1 938	735
1993	78 615	1 391	830
1994	85 798	1 782	821
1995r	77 193	1 374	935
1996	85 411	1 789	1 246
1997	86 733	1 652	1 551

Source: *Unpublished data, Livestock Products, Australia Survey*.

The main broiler production centres are located on the Mornington Peninsula, in areas east and south-east of Melbourne, the Geelong area, and the Goulburn Statistical Division—near the processing works and the main centres of consumption. Most of Victoria's production is consumed locally.

14.18 DRESSED WEIGHT(a) OF POULTRY SLAUGHTERED(b)

Year ended 30 June	Chickens (i.e. broilers, fryers, or roasters) '000 kg	Other fowl and turkey '000 kg	Ducks and drakes '000 kg
1992	107 049	3 565	1 399
1993	114 587	2 474	1 567
1994	123 529	3 170	1 547
1995	109 515	3 661	1 751
1996	127 736	4 164	2 326
1997	129 930	4 772	2 893

(a) Dressed weight of whole birds, pieces, and giblets intended for sale as reported by producers.
 (b) Fresh: sold immediately after slaughter or chilled for sale soon after. Frozen: frozen hard for storage of indefinite duration.

Source: *Unpublished data, Livestock Products, Australia Survey.*

Apiculture

Honey production in Victoria was 4,403 tonnes in 1996–97 (table 14.19). The bulk of the honey produced is sold to large processors who clarify and pack it.

14.19 HONEY PRODUCTION

Year ended 30 June	Apiarists no.	Beehives no.	Honey tonnes	Beeswax tonnes
1992	118	56 540	3 579	56
1993	129	57 562	3 160	65
1994	322	88 742	4 905	194
1995	294	82 704	3 302	58
1996	254	81 506	4 415	80
1997	212	77 434	4 403	76

Source: *AgStats on Floppy Disk (Cat. no. 7117.0).*

Victorian fisheries

Statistics relating to the Victorian fisheries catch are produced by the Marine and Freshwater Resources Institute on behalf of Victorian Fisheries. Data are supplied by licensed commercial fishers, the Melbourne Fish Market and selected fish processors.

As at August 1997, there were 872 personal fishing licences and 974 boat licences valid in Victoria.

The value of the annual fisheries catch decreased by 7% in 1996–97 compared to 1995–96. This was mainly due to commercial scallop production falling from 2,657 tonnes to 575 tonnes, with a corresponding drop in value from \$5.3 million to \$1.2 million (table 14.20). The population of scallops can be quite unstable and may vary markedly from year to year.

14.20 ANNUAL FISHERIES CATCH, Landed Commercially(a)

	Production, live weight			Value		
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
Fish	tonnes	tonnes	tonnes	\$'000	\$'000	\$'000
Abalone	1 412	1 440	1 437	44 339	35 756	37 891
King crab	54	41	62	768	535	1 723
Rock lobster	512	483	458	15 904	14 116	14 547
Scale fish	6 162	6 090	4 494	11 401	12 955	10 321
Scallops	497	2 657	575	1 002	5 313	1 150
Squid	1 317	94	75	1 899	405	327
Shark	1 416	1 512	1 154	8 172	9 746	7 807
Other	227	201	179	1 018	686	568
Total	11 597	12 518	8 434	84 503	79 512	74 334

(a) This information is based on mandatory fishing returns submitted by commercial fishers. The figures do not take into account returns not received or processed.

Source: Victorian Fisheries, Department of Natural Resources and Environment.

Aquaculture is a growing industry in Victoria, worth approximately \$18.5 million in 1996-97. Production of trout and atlantic salmon comprise the largest component (\$10 million) of this sector, followed by eels (\$3.3 million), hatchery (\$2.0 million) and mussels (\$1.8 million).

In 1996-97, over 4,000 tonnes of processed seafoods (valued at \$122 million) were exported from Victoria. This included some seafood landed in other States and shipped out through Victorian facilities. These exports were dominated by rock lobster and abalone, which constituted over 80% of total exports. The major countries buying seafoods exported from Victoria were Hong Kong, Japan, Singapore, Taiwan and the United States of America.

Forestry

Forests are an important sustainable natural resource, providing a wide range of essential products and benefits to the community. Farm forestry is becoming increasingly important as a commercial source of timber, with a broad range of programs operated by government and private agencies to promote landcare and reforestation on Australian farms. In 1995, the National Plantation Inventory Project established that 215,380 hectares of plantation existed in Victoria (in estates of 1,000 hectares or more). Within these plantations, 91% of trees were coniferous species and 9% broadleaf species.

14.21 NATIVE FOREST AREAS, By Forest Type

Dominant canopy species	Victoria	Australia	Victoria as a percentage of Australia
	'000 ha	'000 ha	%
Eucalypt	6 845	124 463	5.5
Acacia	17	12 299	0.1
Meleleuca	18	4 093	0.4
Rainforest	3	3 583	0.1
Mangrove	5	1 045	0.5
Callitiris	37	867	4.3
Other	360	9 487	3.8
Total	7 285	155 385	4.7

Source: Bureau of Resource Sciences.

At June 1997, almost 94% of Victoria's 7.3 million hectares of native forest comprised eucalypt species. The majority (6.2 million hectares) of Victorian native forest was publicly owned with 2.7 million hectares (44% of publicly owned native forest) located in nature conservation reserves, 3.3 million hectares (53%) managed by State forest authorities for various uses, including wood production, and 0.2 million hectares located on other Crown land.

Mining

Mining has played a significant part in Victoria's economic development since the discovery of gold in central Victoria in 1851.

Much of Victoria's industry, transport and infrastructure, including the growth of towns such as Bendigo, Ballarat and Melbourne itself, can be traced back to the impetus of the discovery and mining of gold and other minerals.

Today, mineral exploration and extraction remains a significant component of Victoria's economic activity; in particular, the extraction of oil and natural gas from the rich Bass Strait off-shore fields.

In 1996–97, the Victorian mining industry contributed 14.3% of the Australian mining component of Gross Domestic Product (GDP) at factor cost. In the same period, the mining industry accounted for 2.3% of Victoria's Gross State Product at factor cost. The mining component of GDP includes the extraction of minerals occurring naturally as solids, such as coals and ores, liquids such as crude petroleum, and gases such as natural gas.

In 1996–97, Victoria's main mining outputs were oil and gas from Bass Strait, gold from mining ventures in central Victoria and brown coal for use in the power stations of La Trobe Valley.

14.22 MINING, Summary of Operations

Year	Establishments at June 30 no.	Employment(a) no.	Wages and salaries(b) \$m	Turnover \$m	Stocks		Purchases, transfers in, selected expenses \$m	Value added(c) \$m
					Opening \$m	Closing \$m		
1991-92(d)	11	1 031	124.5	3 630.6	46.1	61.5	170.9	3 475.1
1992-93	116	2 108	90.1	4 310.5	82.7	65.5	332.6	3 960.7
1993-94(d)(e)	29	2 225	139.6	4 082.6	46.9	43.8	328.5	3 750.9
1994-95(d)(e)	25	2 036	139.5	3 434.6	41.4	52.3	253.1	3 178.8
1995-96(d)(e)	22	1 900	115.3	3 275.6	51.6	51.6	236.5	3 039.1
1996-97	25	1 971	122.2	3 307.7	52.0	61.0	243.5	3 073.2

(a) At 30 June, including working proprietors. (b) Excludes drawings of working proprietors. (c) Value added is calculated by adding to turnover the increase (or deducting the decrease) in value of stock and deducting the value of purchases and selected items of expense. All components needed to calculate value added are only collected triennially. (d) The 1990-91, 1991-92, 1993-94 and 1994-95 (truncated) censuses differ from previous mining censuses in that the construction materials and other non-metallic minerals industries have been excluded. (e) Includes brown coal mining operations of the former State Electricity Commission of Victoria.

Source: Australian Mining Industry (Cat. no. 8414.0).

At 30 June 1997, 1,971 people were employed in the mining industry in Victoria, 1,341 in coal and metal ore mining (68%) and 630 in oil and gas mining (32%) (table 14.23).

Overall there was an increase in employment of 4% in the industry. This increase occurred in the oil and gas mining sector, which rose 16.7%, offsetting a fall in employment within the coal and metal ore mining sector of 1.4%.

The oil and gas mining sector showed a far higher level of concentration of employment than coal and metal ore mining. The three establishments in this sector employed an average 210 workers each, whilst the 22 coal and metal ore mining establishments employed an average of 61 workers each.

14.23 MINING INDUSTRY EMPLOYMENT

Items	Unit	Coal mining and metal ore mining		Oil and gas extraction		Total coal mining, oil and gas extraction, and metal ore mining	
		1995-96	1996-97	1995-96	1996-97	1995-96	1996-97
Establishments at 30 June	no.	22	22	3	3	22	25
Employment at 30 June							
Males	no.	1 302	1 288	510	590	1 812	1 878
Females	no.	58	53	30	40	88	93
Persons	no.	1 360	1 341	540	630	1 900	1 971
Persons employed per establishment	no.	75.8	61.0	180.0	210.0	86.8	79.0
Employees working below ground	no.	116	88	0	0	116	88
Wages and salaries	\$m	78.1	77.8	37.2	44.4	115.3	112.2

Source: Australian Mining Industry (Cat. no. 8414.0).

Brown coal

Most of Australia's measured resources of brown coal are located in Victoria's La Trobe Valley. Brown coal production in Victoria for 1996-97 was 60.8 million tonnes. This was 12% higher than the figure of 54.3 million tonnes recorded in 1995-96.

Metallic minerals

Victorian gold production has increased dramatically from a low base of 41 kilograms in 1979–80. In 1990–91, Victorian production peaked at 4,863 kilograms of gold bullion (doré) and one tonne of gold concentrate, valued at \$70.9 million. Gold production then fell by over 30% in 1991–92 before rising to around 4,000 kilograms in 1992–93. Production increased by nearly 10% between 1993–94 and 1994–95, from 3,984 kilograms to 4,370 kilograms. It has increased a further 11% during 1995–96 to 4,838 kilograms, nearly equal to the 1990–91 peak. Although a slight decrease in production was reported in 1996–97 (down 3% to 4,710 tonnes), the growth trend is expected to continue with a number of mining projects coming on-stream.

Gypsum and kaolin are the other significant contributors to Victorian mineral production. However, both show a high degree of variability in year-to-year production figures. In 1996–97, 501,495 cubic metres of gypsum and 114,778 tonnes of kaolin were produced (table 14.24).

14.24 MINERALS PRODUCED

Mineral	Unit	1994–95	1995–96	1996–97
Oil and gas(a)				
Crude oil-stabilised (includes condensate)	megalitres	14 350	12 260	11 930
Natural gas	gigalitres	2.6	2.3	2.1
Liquefied petroleum gas(a)(b)	giga cubic metres	6.8	6.7	6.0
Industrial minerals				
Bauxite	'000 tonnes	2	1	3
Gypsum	cubic metres	193 100	198 667	501 495
Kaolin	'000 tonnes	80	55	115
Brown coal	'000 tonnes	49 922	54 281	60 795
Gold	kilograms	4 319	4 838	4 710

(a) Oil and gas figures are for Bass Strait only. (b) Excludes refinery production.

Source: *Australian Mining Industry* (Cat. no. 8414.0); *Department of Natural Resources and Environment: Minerals and Petroleum Victoria, Statistical Review*.

Oil and gas production

The Bass Strait oil field is one of only three off-shore oil and gas fields in Australia, the other two being in the Timor Sea and North-West Cape, both in Western Australia. Victoria has a very much smaller on-shore oil and gas field in the Otway region, but its production is negligible compared with Bass Strait. In 1996–97, Victoria's Bass Strait produced 11,930 megalitres of crude oil, and 2,100 gigalitres of natural gas.

14.25 REFINING CAPACITY—At 1 December 1995

Refining company	Location	Capacity b/sd(a)
Mobil Refining Australia Pty Ltd	Altona Vic. (1949)	108 000 (or 5 013 000 tonnes/year)
Shell Refining (Australia) Pty Ltd	Geelong Vic. (1954)	110 000 (or 5 343 000 tonnes/year)

(a) b/sd: barrels per stream day. Barrels per day are multiplied by 46.42 to convert to tonnes per year.

Source: *Australian Institute of Petroleum Ltd: Oil and Australia Statistical Review, 1997*.

The total Australian refining capacity as at 31 December 1994 was 813,000 barrels per stream day or 38,194,000 tonnes per year. The Australian lubricating oil refinery capacity at the same date was 15,000 barrels per stream day or 695,000 tonnes per year. Refineries do not

operate at 100% capacity for 365 days per year, with maximum operating capacity generally around 85–88% of designed capacity. Actual capacity at any given time depends on the type of crude oil being processed.

14.26 ESTIMATED HYDROCARBON RESERVES, Bass Strait

	Unit	At 30 June		
		1995	1996	1997
Crude oil and condensate	gigalitres	110.0	110.2	106.2
Natural gas	giga cubic metres	135.3	130.8	130.7
LPG	gigalitres	34.9	33.5	32.4

Source: Department of Natural Resources and Environment, Victoria: Minerals and Petroleum Victoria, Statistical Review.

References

Data sources

The majority of agricultural statistics in this chapter is derived from the Agricultural Census conducted at 31 March each year.

EVAO is an aggregation of derived values for all crop and livestock activity for each unit. It should be noted that EVAO is applicable only for industry coding and size valuation purposes. It is not an indicator of receipts obtained by units, nor of the actual value of agricultural commodities produced by these units.

Gross value of production is the value placed on production at the wholesale prices realised in the market place.

ABS sources

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