

CHAPTER 6

KANGAROO INDUSTRIES

Introduction

6.1 In this chapter, the Committee outlines the structure and nature of the commercial kangaroo industry. It examines shooters, chiller operators and fauna dealers who comprise the three main areas of the industry. Some attention is also given to the trade in kangaroo products both within Australia and overseas. The management system within which the industry works in four States is discussed in Chapter 5. As pointed out in that chapter and elsewhere in the report, there are both similarities and differences among the four kangaroo management programmes. These are reflected in the way the industry operates in each of those States.

6.2 The NSW NPWS commissioned the CSIRO to do a study of the kangaroo industry which resulted in a four volume report. Detailed information about the operation of the industry in that State is therefore publicly available. Some of that information is reproduced in this report. The Committee has also gathered information from evidence given and documents provided to the Committee about the industry in all five States.

6.3 Although the report of the CSIRO consultants deals only with New South Wales, it is the only detailed survey of the kangaroo industry in any State. It does provide an insight into the way the industry works and the relationships among the various parts of the industry.

6.4 In New South Wales all operators in the industry have to be licensed by the NSW NPWS. Licensees are required to submit

regular returns to the Service detailing their operations. Table 6.1 shows the number of licensed operators in the kangaroo industry in New South Wales from 1980 to 1984. Because some licensed operators were inactive, these statistics are only indicative of the size of the industry.

Table 6.1 Number of Licensed Operators in the NSW
Kangaroo Industry 1980-84

Type of Operator/Licence	1980	1981	1982	1983	1984
Fauna dealer processor	8	9	10	8	9
Chiller operator	n.a.	n.a.	n.a.	73	64
Skin wholesaler	n.a.	21	27	29	19
Skin dealers	120	103	120	131	88
Retailers	120	126	140	143	149
Trappers (shooters)	1184	720	571	349	234

Source: Information derived from NSW NPWS Annual Reports and Records cited in G.J. Morris and M.D. Young: 'Second Report on the Economic and Administrative Influences on Kangaroo Management in NSW - The Fauna Dealers', October 1985, p.33.

6.5 Morris and Young commented:

The number of skin wholesalers remained fairly steady until 1984. The late 1983 management decisions to remove almost all skin endorsements from most trappers' licences virtually eliminated the supply of skins from N.S.W. with the consequence that 34% (10) skin wholesalers did not renew their licences. This situation also applies to the skin dealers with a similar drop in the number of licensed skin dealers from 131 in 1983 to 88 in 1984, a

drop of 33%. The number of 'non-active' skin dealers was 13 in 1984, with another 27 submitting 'nil-returns' for part of the year. The number of licensed retailers has also remained steady.¹

Number of Kangaroo Shooters in Australia

6.6 All professional kangaroo shooters have to be licensed under State legislation by the respective State fauna authority.

6.7 There are two types of licence in New South Wales: a resident licence, which restricts a shooter to a particular property, and a general licence. There are no limits on the number of resident licences issued but there are for general licences.

6.8 In 1983, there were 349 licensed shooters in New South Wales. In August 1984, 375 were licensed. On the basis that shooters who killed more than 2500 kangaroos a year were full-time shooters and those who killed fewer were part-time, in 1983 there were 59 full-time and 290 part-time shooters. The remaining 73 shooters shot no kangaroos.²

6.9 Young and Delforce published details of the number of licensed shooters in New South Wales between 1976 and 1983. These details are shown in Table 6.2.

Table 6.2 Number of Licensed Kangaroo Shooters in New South Wales
as at 31 December, 1976-1983

<u>Year</u>	<u>Number of Licensed Shooters</u>
1976	222
1977	225
1978	320
1979	1501
1980	1184
1981	720
1982	571
1983	313

Note: In 1983, the total comprised 111 resident licences and 202 general licences.

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo Trappers and Chiller Operations', July 1984, Table 2.4, modified by Committee.

6.10 In Queensland, there were 1431 licensed shooters in 1983 of whom ten per cent were full-time shooters. No definition of a full-time shooter in Queensland was given.³

6.11 In Western Australia, there were 136 licensed shooters in August 1984, made up of 90 within the red kangaroo management programme and 46 within the grey kangaroo management programme. All grey kangaroo shooters were part-time and most red kangaroo shooters had supplementary income, usually station work.⁴

6.12 In South Australia, there were 188 licensed shooters in 1983-84, of whom 30 'could be considered full-time in 1984'.⁵

6.13 In Tasmania, 384 shooters were licensed for the commercial killing of wallabies in 1983, all of whom were 'considered to be part-time operators, most being either

landowners or their employees who hunt, on average, only four days each month'.⁶

6.14 The Committee took evidence from kangaroo shooters in Western Australia and spoke at informal meetings with shooters in New South Wales and Queensland. Their basic conditions, working arrangements, problems and aspirations were generally similar, even though management programmes, environment and other factors varied from State to State, and among regions within a State.

Kangaroo Shooters in New South Wales

6.15 One of the reports of the CSIRO consultants dealt with shooters and chiller operators. The study gives a detailed profile of kangaroo shooters (referred to as trappers in legislation in New South Wales), not only of their socio-economic circumstances but also of their attitude to and operation of kangaroo killing.

6.16 Young and Delforce, who undertook the study, described their sampling techniques as follows:

NPWS records indicate that within the entire commercial harvesting area there were 313 trappers licensed on December 30th, 1983. Of these, 79 were active and delivering kangaroo carcasses to the 24 registered chiller sites included in the survey. Thus, assuming that the survey is representative of the entire population, it is estimated that in the quarter ending December 1983 approximately 133 trappers of the 313 licensed trappers in N.S.W. were active. As Table 3.1 implies, a significant proportion of the estimated 180 inactive trappers are most likely to be resident trappers who only hold a licence to take kangaroos from a specific property.

A better guide to the sample proportion for licensed trappers seems to be the percentage of the total N.S.W. commercial harvest of

kangaroos for the financial year ending 30th June 1983 represented by the 52 of the 60 licensed trappers surveyed who provided estimates of their harvest in that year. NPWS records suggest that 607,023 kangaroos were harvested in that period. The combined harvest of the respondents is estimated to be 258,587 kangaroos. Thus, the licensed trappers interviewed accounted for 43% of the total number of kangaroos taken during that financial year.⁷

6.17 Of the 60 shooters (all male) included in the survey, 58.3 per cent were raised within 100 kilometres of their base. A majority was aged between 30 and 39 years (53.3 per cent) with another 28.3 per cent aged between 20 and 29 years. About two-thirds (68.30 per cent) were married or lived in defacto relationships while 26.7 per cent had never married. Most (97.6 per cent) of those living in permanent relationships had at least one child and 87.8 per cent of spouses did not have a job.

6.18 Within the survey sample, 46.3 per cent of shooters left school between the ages of 13 and 15 years and 46.3 per cent between 16 and 18 years of age. This was 'not significantly different from comparable male workers'. Most shooters combined kangaroo shooting with either the shooting of other animals or another job or both. Details are shown in Table 6.3.

Table 6.3 Kangaroo Shooters - Combined Employment

<u>Type of Employment</u>	<u>Percentage</u>
Only shoots kangaroos	1.8
Also shoots other animals	26.8
Also has a non-shooting job	10.7
Also shoots other animals and has a non-shooting job	60.7
	<u>100.0</u>

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo trappers and Chiller Operators', July 1984. (Part of Table 5.3).

6.19 In their Final Report, Young and Morris commented:

Most of the kangaroo shooters considered it important to have an alternative source of income and 69% gave these alternate sources higher priority. Diversification in income source is essential for the financial well being of kangaroo shooters as it appears to enable them to modify their shooting effort in response to variations in kangaroo populations, seasonal and market conditions. These characteristics suggest that professional kangaroo shooters are able to withstand periodic quota reductions, etc. without undue hardship. This is particularly important for them as short-term climatic conditions such as heavy rain can make it impossible to shoot for several weeks.^{7A}

6.20 Most shooters had spent at least four years as a kangaroo shooter. Details are shown in Table 6.4.

Table 6.4 Licensed Shooters' Shooting Experience

<u>Years of Experience</u>	<u>Percentage</u>
1 to 3	25.0
4 to 8	51.7
10 to 27	23.3
	<u>100.0</u>

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo trappers and Chiller Operators', July 1984. (Part of Table 5.6).

6.21 Shooting accuracy of licensed shooters improved with experience in the industry. The shooters were asked the number of clean hits from 100 shots. They provided information reproduced in Table 6.5.

Table 6.5 Stated Accuracy of Licensed Shooters

<u>Number of clean hits from 100 shots</u>	<u>Years of Experience</u>		<u>Total</u>
	<u>1 - 3</u>	<u>4 or more</u>	
70-79	33.3	9.5	14.8
80-89	33.3	19.0	22.2
90+	33.3	71.4	63.0
	<u>99.9</u>	<u>99.9</u>	<u>100.0</u>

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo trappers and Chiller Operators', July 1984. (Part of Table 6.8).

6.22 Apart from being better marksmen, the more experienced shooters also had a higher net average income from kangaroo

shooting. Shooters with three years or less experience obtained a net average income of \$6261 compared with \$10 413 earned by shooters with four or more years experience.

6.23 With regard to sex and size preferences, 53.8 per cent of the shooters replied that they shot bucks first, irrespective of weight between bucks and does. A few shooters said that they did not shoot any does or not does with visible young. The heaviest kangaroo, irrespective of sex, was the choice of 46.2 per cent of shooters as the first target.⁸

6.24 Most shooters (87.9 per cent) did not share properties with other shooters and of those, 68.6 per cent gave the reason for not sharing as 'not practical' and a further 13.7 per cent replied that the landholder wanted them only.

6.25 The shooters were questioned about their willingness to move, either permanently or temporarily, to another area if kangaroo densities in their own areas were too low to sustain commercial shooting. The answers are contained in Table 6.6.

Table 6.6 Willingness of Shooters to Move to Another Area
with Kangaroos 200 km away if Local Kangaroo
Densities Temporarily Too Low

<u>Shooter mobility</u>	<u>Percentage</u>
Move there permanently	21.1
Go temporarily until local numbers build up again	19.3
Stop shooting until local numbers build up again	17.5
Give up kangaroo shooting	33.3
Other	3.5
Don't know	5.3
	100.0

Cross-tabulations of Shooter mobility

East/West division *	<u>East (%)</u>	<u>West (%)</u>
Move permanently or temporarily	28.6	56.3
Would not move	71.4	43.7
	100.0	100.0

Town/property division **	<u>Town (%)</u>	<u>Property (%)</u>
Move permanently or temporarily	39.0	66.7
Would not move	61.0	33.3
	100.0	100.0

* An arbitrary division by Young and Delforce of the commercial kangaroo shooting area of New South Wales into east and west divisions.

** Shooters based in towns or on properties.

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo Trappers and Chiller Operators', July 1984 (Table 5.11).

6.26 Young and Delforce explored the direct and indirect influences which chiller operators and fauna dealers had on shooters.

6.27 Twenty-one shooters in the sample were also chiller operators. Of the remaining 39 shooters, 53.8 per cent (20 shooters) said that chiller operators did influence the operations of shooters. Fifteen of the 20 shooters said that chiller operators influenced their operations by imposing delivery quotas, three said 'no more kangaroos for a while', one said he had carcasses rejected at the chiller and the last said that kangaroos were not collected when the chiller was full.

6.28 In a separate study of chiller operators, 70.8 per cent of 23 chiller operators believed that they did not influence shooters. However, 16.7 per cent said they imposed quotas on shooters, 8.3 per cent said that they pressured shooters to kill kangaroos at times when they would not normally have operated.

6.29 Fauna dealers influenced shooters' operations through the prices offered for carcasses or by imposition of quotas on chiller operators who in turn imposed quotas on shooters. A majority of shooters (56.9 per cent) thought that prices at the time of the survey were unfair and most of those shooters (87.9 per cent) thought so because the prices were too low for the costs that the shooters faced in shooting kangaroos.

6.30 A majority of shooters (63.3 per cent) operated in an area where there was only one shooter while 36.7 per cent of shooters operated where there were two shooters. A majority of shooters (55 per cent) had a desire for more licensed fauna dealers but there was no correlation with the number of fauna dealers in their areas. Although it is reasonable to assume that most of the shooters desiring more competition were probably in areas with only one dealer, that was not made clear in the study. Asked why they wanted more fauna dealers, the most common replies

were to get a better price (43.8 per cent), 'more competition is a good thing' (25.0 per cent) and a 'new dealer may take carcasses when present ones do not want them' (15.6 per cent).

6.31 In private discussions with shooters in New South Wales and Queensland, the Committee was told of dissatisfaction with prices offered by dealers resulting from the lack of competition in a zone where there was a single fauna dealer. Lack of competition also allowed fauna dealers to impose quotas on chiller operators and to delay collections of carcasses from chillers.

6.32 The Committee was impressed with the professionalism of the shooters with whom they talked and accompanied on shoots. Their marksmanship and efficiency were very good. The Committee is aware that not all shooters would reach their standards and this is borne out in the reports of Young, Morris and Delforce and of RSPCA Australia. Nevertheless, professional shooters overall are regarded by the Committee as the best-equipped people to shoot kangaroos if shooting has to be done.

6.33 The difference between full-time and part-time shooters is blurred. Young and Delforce in their study found that only one shooter in their sample derived all his income from kangaroo shooting. The other shooters had varying proportions of income obtained from various sources. The Committee decided to regard full-time shooters as those whose main source of income is obtained from kangaroo shooting and who shoot kangaroos on a regular basis.

6.34 In some areas, there are not enough kangaroos to warrant a full-time shooter operating either for meat or skins. A part-time shooter will probably operate more effectively and humanely than a landholder licensed to kill kangaroos.

6.35 Although there were slight differences among the States, fauna authorities generally only checked whether an applicant for a kangaroo shooter's licence had a current firearm licence and had any criminal record. For applicants renewing a licence, a State NPWS might also check the previous year's shooting record. In New South Wales, for example, a shooter with a general licence has to take 500 kangaroos in a year before his licence is renewed.

6.36 The then Australian Bureau of Animal Health recommended to the Committee that an applicant for renewal of his licence should be required to obtain from a registered medical practitioner a statement that he had satisfactory eyesight and did not suffer 'any obvious physical or psychological disorders which could affect his ability to cull kangaroos in a professional manner'.⁹

6.37 Other prerequisites for issue of a kangaroo shooter's licence were suggested to the Committee, namely, that an applicant pass tests of marksmanship, species identification and detailed knowledge of the Code of Practice, as well as own an appropriate firearm.

6.38 The Kangaroo Industries Association of Australia, which represents fauna dealers but not shooters, had no objection to such prerequisites being implemented.¹⁰ However, fauna authorities and shooters argued that such prerequisites were not necessary. In their view, any shooter who did not shoot accurately would never survive in the industry, particularly in States where the carcass trade predominated. Fauna dealers would only tolerate a small percentage of carcasses which were not shot in the head. Fauna dealers would also not accept carcasses of species which were protected from commercial shooting.

6.39 The Committee does not wish to impose an unnecessary administrative burden on fauna authorities or on shooters. There

is a necessity, however, to protect kangaroos from inexperienced shooters or those who do not have an acceptable degree of marksmanship. Although poor marksmanship might result in the economic demise of a shooter, avoidable suffering by kangaroos might have occurred in the interim period. In addition, in States where there is a significant amount of skin-only shooting, often accompanied by no financial disincentive for body shooting, poor marksmen might opt to aim at the larger target of chest, spine or hip. This often does not necessarily result in instantaneous loss of consciousness as required by the Code of Practice. RSPCA Australia found, in its study on cruelty to kangaroos, that conservatively, 19 per cent of kangaroos were not head shot in one State. For these reasons the Committee **RECOMMENDS** that all new applicants for a kangaroo shooter's licence pass a test of marksmanship before being issued with a licence. In addition, the Committee **RECOMMENDS** that commercial shooters applying for a renewal of a licence, and who did not kill at least five hundred kangaroos under the kangaroo management programme in the preceding year, pass a test of marksmanship before being issued with a licence.

6.40 These recommendations should not add much to the workload of fauna authorities because regular licensed shooters would not be affected. There are precedents for successful completion of a test before issue of a licence. For example, every person who is licensed to drive a motor vehicle on a public road is required to have passed a driver's test before being issued with a licence.

6.41 Although one expects a professional shooter to own an appropriate firearm when applying for a kangaroo shooter's licence, it is possible that a part-time shooter, who opportunistically seeks to enter the industry in a period of high skin prices, might not own an appropriate firearm. In Chapter 5, the Committee recommended that an applicant for a kangaroo shooter's licence provide proof to the fauna authority that he is

the owner of an appropriate firearm before he is issued with a licence. This additional procedure is unlikely to cause any undue inconvenience to the authority or the shooter.

6.42 In some areas of some States it is not practicable to shoot kangaroos for meat. There is also a limitation on the size of the market for kangaroo meat. Consequently, some shooters are licensed to kill kangaroos for their skins alone.

6.43 Young and Morris commented on skin-only shooting:

Skin shooters need little capital to enter the industry and tend to do this largely when skin prices are high. They leave as soon as prices fall and when the quality of the available skins declines. The variability of prices paid for carcass shot kangaroos is much less than those paid to skin shooters. Skin shooting is frequently an opportunistic operation, which works against the interests of professional shooters and others whose future depends upon the maintenance of an abundant kangaroo population. By precluding skin shooting from most areas, profits to those who have permanent investments and commitments to the industry will be higher and consequently their demands for permission to take additional kangaroos during periods of low population less.¹¹

They also stated:

If short term entry to the industry is permitted during periods of high skin prices and easy shooting then the industry must be expected to take a short term exploitive attitude and the kangaroo population suffer accordingly. The prohibition of skin shooting makes all the industry's activities much easier to predict.

As noted in the Market Report many of the Industry's present supply problems have been caused by the expansion of skin shooting in Queensland. But more importantly, skin

shooting is extremely difficult to monitor and is open to abuse.¹²

The two authors recommended against skin-only shooting in all areas except where it is impossible to shoot kangaroos for their carcasses.

6.44 In South Australia there is little skin-only shooting. The SA NPWS told the Committee that skin-only shooting was virtually only allowed in the west of the State where there were no processors. In 1984 only 600 out of 99,274 kangaroos were killed for their skins only.

6.45 RSPCA Australia found that New South Wales, with the highest percentage of head shot kangaroos (95 per cent), had virtually no skin-only shooting.

6.46 The Committee **RECOMMENDS** that commercial shooters kill kangaroos for the carcasses and not for their skins only, except where the relevant fauna authority considers a carcass trade is impracticable and authorises skin-only killing.

Chiller Operators

6.47 Young and Delforce did an economic study of chiller operators in New South Wales. In their sample of 24 operators, 23 were male. Most of the operators (70.8 per cent) were under forty years of age and a majority (54.2 per cent) originated in the area of their operations. Another 12.5 per cent originated elsewhere in New South Wales. With regard to family structure:

Most are either married (70.8%) or living in a de facto relationship (4.2%) of these, most (87.8%) had been married for five years or more and all have children.¹³

6.48 Twenty of the operators responded to questions on educational background. Of these, 71.5 per cent had left school by the age of 15 years.

6.49 Incomes and costs of the chiller operators in the 1982-83 financial year are set out in Table 6.7.

Table 6.7 Chiller Operators' Incomes from all Sources and Costs Incurred in Earning Income

<u>Income from chiller operation</u>	Average (\$)	Range (\$)
Gross income from chiller operation	4,443	0 - 20,533
Less total costs of chiller operation	1,463	0 - 8,020
Net income from chiller operation	2,980	-1,580 - 12,513
<u>Net income from shooting*</u>	8,491	0 - 27,207
<u>Net income from other non-shooting occupations</u>	5,423	0 - 34,615
TOTAL NET INCOME 1982/83	16,894	4,026 - 34,615

* Sixteen of the chiller operators who could provide financial information were also licensed shooters.

Source: M.D. Young and R.J. Delforce: 'An Economic and Social Survey of Licensed Kangaroo Trappers and Chiller Operators', July 1984. (Table 4.10, modified slightly)

6.50 The two authors examined the other sources of income received by the operators. They wrote:

Most (83.3%) chiller operators are also licensed kangaroo trappers. With few exceptions, these respondents started off as licensed trappers and later took over the operation of the relevant chiller(s) after several years of trapping experience. In addition, many said they have trapped other animals for commercial gain in the last three years (or less) - namely foxes (for 66.7% of respondents), rabbits (20.8%), feral pigs (8.0%), feral cats (8.0%) and feral goats (8.0%). The majority (75.0%) said that they had had a non-trapping job in the last three years or less. A considerable diversity in the type of other job(s) was reported, with no more than three respondents having the same non-trapping job. Overall, only one respondent (4.2%) was a full-time chiller operator in that he had no other job or trapping activity; 20.8% also trapped kangaroos or other animals, 12.5% also had a non-trapping job(s) and 62.5% also both trapped kangaroos or other animals and had a non-trapping job.¹⁴

6.51 Young and Delforce examined the mobility of operators by asking whether they would be prepared to move 200 kilometres away to an area where there would be enough kangaroos to sustain their chiller operations. It was implied in the question that the existing area would not be viable for a chiller at least for the time being.

As this was a rather hypothetical question qualified responses were expected, and were given, in many cases. Nearly 30% would move there permanently, while most others would either give up operating their chiller(s) (25.0%), stop operating until numbers locally built up again (25.0%) or go there until numbers built up again locally (12.5%). The reasons stated by those who would not move were mainly that they either had personal ties to the local area and did not want to move, or it would be hard to secure enough properties or trappers in the new area in order to operate their chiller(s), or that current licensed trappers would be unwilling to move there.¹⁵

6.52 Both from the answers to the question on mobility and from the other information obtained from chiller operators, it is clear that most of them would not leave their local areas permanently and more than half would not go elsewhere even temporarily to operate a chiller.

Fauna Dealers

6.53 In New South Wales, a fauna dealer may be licensed by the NSW NPWS to deal in either skins or carcasses. The former has to buy most of his skins from another State as few shooters have had their licences endorsed for skins only.

6.54 The fauna dealer processor buys carcasses from a chiller operator and transports them to his processing works. In times of short supply, a fauna dealer may buy carcasses from other fauna dealers or from interstate.

6.55 Table 6.8 shows the importation of kangaroo products into New South Wales from 1980 to 1984.

Table 6.8 Import of Kangaroo Products into N.S.W. 1980-1984

Product	Year				
	1980	1981	1982	1983	1984
Skins - Grey	406,193	250,300	713,635	439,910	420,880
Skins - Red	329,013	157,200	351,915	251,202	374,030
Skins - Other	95,492	20,000	60,978	27,000	29,703
Skins - Total	830,698	427,500	1,126,528	708,112	824,613
Whole Carcasses	25,000	47,000	0	-	212,000(b)
Meat (kg)	767,200	900,000	330,000	512,000(a)	923,000

Footnotes: (a) Meat and carcass figure not separated

(b) 1984 whole carcass figure given in kg and number of carcasses assuming average carcass weight 20 kg.

Source: G.J. Morris and M.D. Young: 'Second Report on the Economic and Administrative Influences on Kangaroo Management in NSW - The Fauna Dealers', October 1985, p. 53 (compiled from NSW NPWS records).

6.56 The carcasses are dissected, boned and packaged and the meat is then generally despatched to the pet food market. Some meat is sent to South Australia or overseas for human consumption. Health regulations prohibit the sale of kangaroo meat for human consumption in New South Wales.

6.57 The skins from the carcasses are sold to skin wholesalers, skin dealers or to the skin market. A majority of the skins are exported in either a pickled or a salted form.

6.58 There were nine fauna dealer processors in New South Wales in 1984. The industry was, however, dominated by three, who accounted for between 81 and 88 per cent of the kangaroos killed in New South Wales over the preceding five years. Those percentages would have been higher if kangaroos bought from interstate had been added.

6.59 At the time of the study by Morris and Young, there were no cross-company links by directors or by shareholders among the fauna dealers. There were, however, links between two New South Wales fauna dealers and two in Queensland. Stock was moved between the two States to take up supply and market opportunities. These fauna dealers developed a much broader approach to the industry than their competitors.

6.60 In May 1985 the operating level of the processing works ranged from 100 to 4500 carcasses per week. The annual capacity varied from 24 000 kangaroos to 52 000 kangaroos. This gave the industry in the State a total capacity of approximately 1 280 000 carcasses per annum. This is 1.5 times the maximum quota ever allocated to New South Wales.

6.61 In New South Wales, where most kangaroos shot commercially are intended for the carcass trade, there is a need to maintain supplies of kangaroo meat to the pet food trade. Morris and Young reported:

All the fauna dealers, and in particular the bigger dealers, stressed the importance of maintaining supplies of meat to the pet food market. The fauna dealers considered that the overall competitiveness of the pet food market and the ready availability of substitutes made it extremely important to maintain supplies to

the market to maintain customer loyalty. This perception has influenced their activities in many ways including their placement and operation of chillers, the amount of meat purchased from interstate and other fauna dealers, and the amount of meat kept in storage.¹⁶

Markets for Kangaroo Products

6.62 There are two main products derived from kangaroos shot commercially: meat and skins. Most of the meat is sold to the pet food market in Australia. A small amount is sold for human consumption in South Australia, Tasmania and Western Australia. The sale for human consumption is prohibited in the other States.

Kangaroo Meat Market

6.63 Some kangaroo meat is exported, either for human consumption or for pet food. Virtually no kangaroo meat is now included in canned pet food because of campaigns against such use by animal welfare organisations. Kangaroo meat is sold either fresh, which is preferred, or frozen to the pet food market.

6.64 Kangaroo skins are sold mainly as leather, rather than as fur. There is both an Australian market and an overseas market. Morris and Young examined the markets for kangaroo products in their study of economic and administrative influences on kangaroo management in New South Wales. This study gave some important insights into the kangaroo industry and the factors which influence the annual commercial kill in that State.

6.65 Morris and Young investigated the factors which affected the demand and supply of kangaroo products. They set out the following factors which affected the supply of kangaroo meat to the pet food trade:

- . the price of kangaroo meat;
- . long-term environmental conditions over the year, such as seasonal conditions which affect numbers in the population;
- . comparative environmental conditions in Queensland and N.S.W. both in the long and short term;
- . short-term environmental conditions within any one year such as localized wet weather which disperses the kangaroo population and creates accessibility problems for shooters;
- . the impact of NPWS regulatory mechanisms and ANPWS export restrictions; and
- . availability of shooters.¹⁷

6.66 The factors which affect demand for kangaroo meat for the pet food trade are:

- . the price of kangaroo meat;
- . the price of substitutes; and
- . consumer preferences.¹⁸

6.67 Morris and Young considered that environmental factors were the main determinant of the area from which kangaroos are killed to satisfy the pet food market. In wet conditions, kangaroos are not dependent on particular water supplies or feed and disperse, making it difficult for a shooter to find them. In dry periods, kangaroos are more visible and, additionally, there is greater pressure from landholders to keep kangaroo populations under control to minimise damage done to properties. All of eastern Australia is unlikely to experience the same conditions for any length of time, and the fauna dealers will buy carcasses from dealers in areas where kangaroos are plentiful, either within the State or interstate, to meet contractual requirements with the pet food industry.

6.68 Because the price of kangaroo meat had been relatively stable for some years, Morris and Young indicated that increased supply would probably deflate prices. This would provide a disincentive to increase supply, unless new markets were found for additional kangaroo meat.

6.69 Until recently, the quota in New South Wales had not been reached. However, the quota has since been exceeded and in 1984, the NSW NPWS took steps to limit the kill in some areas because, according to the results of aerial surveys, the density of kangaroos had fallen below one per square kilometre. In this way, the supply of kangaroo meat has been affected by government action.

6.70 The setting of a quota is not the only government action which can affect supply. The number of licensed shooters in an area is restricted. Chiller sites also have to be approved by the NSW NPWS. The Service can therefore restrict shooting in particular areas and encourage it in others.

6.71 With regard to demand factors, kangaroo meat competes with substitutes in the pet food market. Morris and Young argued that demand for kangaroo meat is price elastic. In other words, kangaroo meat is competing with substitutes on the basis of price.

6.72 Morris and Young estimated that between 68 and 77 per cent of the 'total potentially available pet meat taken within the State is consumed in N.S.W., primarily in Sydney'. They also estimated that consumption of kangaroo meat in the State ranged between 4388 and 10 756 tonnes a year, which is between 84 and 124 tonnes a week.

6.73 Morris and Young reported that, based on information received from fauna dealers, Sydney was the largest market for kangaroo meat in Australia (three fauna dealers estimated 30

tonnes a week for Sydney while one fauna dealer estimated the consumption to be about 120 tonnes a week). The Melbourne market was estimated at between 30 and 40 tonnes a week and the Brisbane market at between 10 and 15 tonnes a week. Morris and Young were not able to obtain data to substantiate these figures.

6.74 As there has been no commercial shooting in Victoria for some years, kangaroo meat is imported into the State mainly from New South Wales, Queensland and South Australia.

6.75 The four largest fauna dealers indicated that there was not the demand to increase supply of kangaroo meat. The four small dealers believed that there was scope to expand present markets and there was potential for new markets. Three of these dealers had established new local markets of about 10 tonnes a month.

6.76 In New South Wales the annual number of kangaroos killed commercially depends largely on economic and climatic factors, except when government restrictions are imposed on the industry. The fauna dealers are dependent on demand from the pet food market for kangaroo meat and, from the dealers' point of view, it is essential to maintain continuity of supply of meat to that market. Some of the larger dealers keep up to two weeks supply frozen in case the supply of carcasses runs short.

6.77 Any significant reduction in the market would force the fauna dealers to impose restrictions on chiller operators and, in turn, on kangaroo shooters.

6.78 Under normal conditions, the number of kangaroos shot commercially in New South Wales depends on market factors, not on the level of damage done to properties by kangaroos. Despite pressures from landholders, kangaroo shooters will only kill kangaroos if they can sell them to chiller operators and fauna

dealers. It is pointless to kill kangaroos if demand for their skins or meat is non-existent.

6.79 The Queensland Fauna Dealers Association, in its written submission to the Committee, commented along similar lines:

To date the major difficulty has been that the industry has been unable to market enough kangaroo products to enable it to provide service to all who would legally kill kangaroos.¹⁹

6.80 Because the fauna dealers have not been able to respond at times to requests from the Queensland NPWS to increase the kill, as a result of a lack of markets for kangaroo meat or kangaroo skins, the Service has taken other action. The Queensland Fauna Dealers Association submitted to the Committee:

The industry is also subjected to sometimes damaging policies aimed at satisfying the more significant rural pressure groups. When kangaroos pester farmers and/or graziers the industry has been called upon to buy more kangaroos and new licenses have been issued. These policies have never achieved the objectives intended but they have given temporary relief to politicians from the landholders' complaints. Those in the industry always suffer losses at these times, and most of the new operators quickly disappear.²⁰

6.81 The Committee asked the Director of the Queensland NPWS about putting pressure on the industry at times in response to complaints from landholders about kangaroo damage. The Director told the Committee:

Yes, there could be instances where, because the market price for skins or meat is low, the industry is not buying skins or carcasses from shooters and yet we are having complaints from landholders about kangaroo populations. Having investigated the matter and having responsibility for the welfare of kangaroos

and not the industry, we have no hesitation in leaning on the industry.²¹

Kangaroo Skin Market

6.82 Most kangaroo skins are used for leather rather than for fur. The kangaroo skin has a high tensile strength and is light in weight. It is used for footwear, particularly sporting footwear, and for specialty leather goods. Between 1980 and 1984, an average of about 68 per cent of skins from kangaroos killed in New South Wales or imported into that State from another State were exported to various countries.²² The number of skins exported annually during that period went from a low of 507,504 skins in 1980 to a high of 1,185,351 in 1982.²³ This indicates the volatility of the overseas skin market. Kangaroo skin is competing with a number of substitutes despite its inherent qualities.

6.83 Morris and Young commented, in relation to the market in New South Wales, that:

From the figures available it appears that N.S.W. consumption of kangaroo skins has varied dramatically over the past five years but on average only 30% of the total number of potentially available skins appear to have been utilized in N.S.W.

From discussions with fauna dealers, skin wholesalers and skin dealers it is estimated that current demand for kangaroo skins from local manufacturers is in the order of 250,000 per year and that they have the capacity to use up to 500,000 per year.²⁴

6.84 The export of kangaroo skins to the United States of America had been declining from 1964-65 until the imposition of a ban on exports in 1973. The imposition of the ban, according to Morris and Young, might not have had quite the impact that has been attributed to it.

6.85 Morris and Young asked the fauna dealers about the effects of the ban on their operations. Only three of the eight fauna dealers were in business at that time. Morris and Young commented:

At the time only a few fauna dealers had significant contracts to supply the U.S.A. market and these dealers were obviously affected by its closure. For the industry as a whole it appears that in the short term skin prices dropped in response to an increase in the availability of skins previously exported to U.S.A. In the longer term, however, the closure of the U.S.A. market appears to have had no significant effects as the market has shifted to Europe.²⁵

6.86 They also commented on the effect of a closure of the European market to kangaroo skins.

Six of the eight fauna dealers interviewed considered that the closure of the European markets would have a devastating impact on the industry as a whole in particular on the market for skins. Two of the dealers were of the opinion that the effect on the industry would be irreversible while the other four dealers were more optimistic and considered that new markets could be developed.²⁶

6.87 From the information supplied by the CSIRO consultants, and in evidence to the Committee, there are four main factors determining the size of the annual commercial kill in the mainland States - the weather, the demand for kangaroo products, pressure from landholders and government restrictions.

6.88 Under 'normal' conditions, the size of the commercial kill is largely governed by the market within quotas imposed by government. Until recently, the size of the kill was well below the level of the quota. In dry seasons, with less food available, competition between kangaroos and livestock increases and

kangaroos also become more visible. Consequently, there is more pressure from landholders on the fauna authority and directly on shooters to kill more kangaroos. This pressure from landholders is exemplified in the political row which arose out of the level of the Queensland quota for 1986 and 1987 when the Queensland Government's proposed quota was reduced by the Federal Government. At one stage, landholders threatened to have a concerted and massive kill of kangaroos to support their State Government's proposed quota.

6.89 Regular killing reduces the number of kangaroos that there would otherwise be. This reduces the pressure on farmers, particularly in times of drought. On the other hand, if kangaroos are killed solely because of their numbers rather than to mitigate actual or potential damage, it is probable that some of them will be killed unnecessarily.