



WOOL DESK REPORT - MAY 2007

FLOCK DEMOGRAPHICS AND PRODUCER INTENTIONS - RESULTS OF A NATIONAL SURVEY CONDUCTED IN FEBRUARY 2007

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The author would like to thank the sheep producers of Australia who participated in the survey reported here. Their contribution is sincerely appreciated.

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EXECUTIVE SUMMARY

This issue of Wool Desk Report presents the results of a survey conducted in February 2007 of 1810 Australian sheep producers. The survey was done to provide information to the Australian Wool Innovation Wool Production Forecasting Committee and to update the flock model that is used by the relevant state committees.

The producers surveyed collectively produced 27.3 million kilograms of wool from a total of 5.0 million adult sheep and 1.9 million lambs shorn during 2005/2006. This represented a sample size of 5.9 per cent of Australian wool production and 6.5 per cent of the adult sheep and lambs shorn during 2005/2006.

The key findings from the survey were

- 66 per cent of producers reported being in drought while a further 23 per cent reported conditions as below average;
- 70 per cent of producers reported that the seasonal conditions of February 2007 were worse than those of February 2006;
- 75 per cent of producers intended to maintain their current mix of wool and prime lamb production, while 11 per cent intended to move toward more prime lamb and 7 per cent toward more wool production;
- 58 per cent of all ewes are to be mated to Merino rams in 2007, down from 61 per cent in 2006. For Merino ewes, 69 per cent are to be mated to Merino rams in 2007;
- In 2006, the marking rate (lambs marked relative to ewes joined) for Merino lambs was 80 per cent, while the rate for Merino first cross lambs was 86 per cent; Merino second cross lambs, 83 per cent and meat breed lambs, 105 per cent;
- At the start of 2007, ewes accounted for 72 per cent of the national flock and 82 per cent of these ewes were pure Merino. Of the sheep over 12 months old, 78 per cent were ewes and 88 per cent were Merino.

The widespread drought being experienced by Australian farmers has resulted in a drop in sheep numbers and re-building the national flock once the drought has broken will require breeding over a number of years as there are few surplus sheep available for purchase.

The emphasis on prime lamb production in recent years appears to have reached a plateau. This is possibly due to a combination of good wool prices, the desire to maintain the number of self-replacing Merinos and the uncertainty caused by the current drought.

Merino sheep continue to provide the backbone of the Australian flock in terms of producing fine Merino wool and also prime lambs through the use of terminal sires.

METHODOLOGY

On behalf of Australian Wool Innovation (AWI) and the Australian Sheep Industry CRC (SCRC), Taverner Market Research Pty Ltd surveyed 1810 sheep producers across Australia during February 2007. The number of producers surveyed in each statistical division was determined by the relative proportion of wool producers in each area according to the AWI shareholder database. The statistical divisions represented 85 per cent of the Australian sheep population, as recorded in the 2001 Australian Bureau of Statistics (ABS) agriculture census. Each interviewee was asked to nominate the locality nearest their property and this information was then used to map the distribution of the wool producers surveyed (Figure 1).

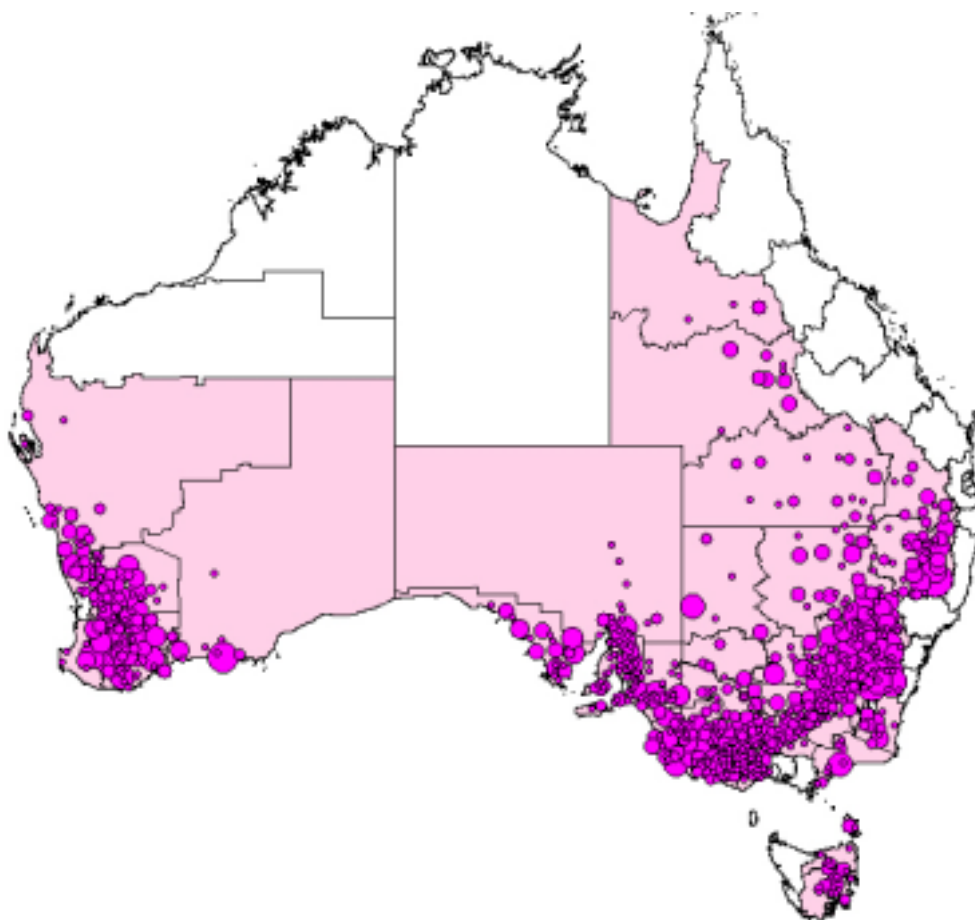


Figure 1. Distribution of the statistical divisions surveyed (shaded areas) and of the survey participants (dots). Larger dots indicate multiple producers from the same locality.

Only producers with 500 or more sheep on their property during 2005/2006 were interviewed and interviewers used a set of standard questions. All interviews were conducted via telephones.

Detailed flock composition was only collected from producers shearing 1200 or more adult sheep in 2006/2007. While this reduced the sample size for these measures to 1266 producers, it accounted for over 90 per cent of the adult sheep shorn by all producers surveyed.

RESULTS

SURVEY COVERAGE

The producers surveyed produced about 27.3 million kilograms of greasy wool during 2005/2006 and estimated production for 2006/2007 at 24.9 million kilograms. These figures were achieved from a combined total of 5.0 million adult sheep and 1.9 million lambs shorn in 2005/2006 and from an estimated 4.7 million adult sheep and 1.9 million lambs in 2006/2007. The data represent 5.9 per cent of the Australian wool production, and 6.5 per cent of the sheep and lambs shorn during 2005/2006.

Sheep shorn and bales produced

Each producer was asked how much wool they had produced, or would produce, and how many adult sheep and lambs had been or would be shorn during 2006/2007 (Table 1).

Table 1. Median values by State for wool produced and adult sheep and lambs shorn per producer during 2005/2006

	NSW	QLD	SA	TAS	VIC	WA	AUST
Wool production							
bales	50	88	45	66	52	84	57
kg greasy	8,450	15,400	8,010	11,040	8,940	14,700	9,890
Sheep shorn							
Adults	1500	2900	1200	2540	1800	2500	1800
Lambs	600	500	600	700	600	1075	700
No. of producers	640	74	281	42	395	364	1796

Flock and clip sizes varied between producers (Figures 2 and 3). While 91 per cent of producers were shearing between 500 and 16,000 adult sheep, the 1266 producers (70 per cent of producers) shearing 1200 or more adult sheep accounted for 91 per cent of the adult sheep shorn and 89 per cent of the wool produced by all 1810 producers surveyed.

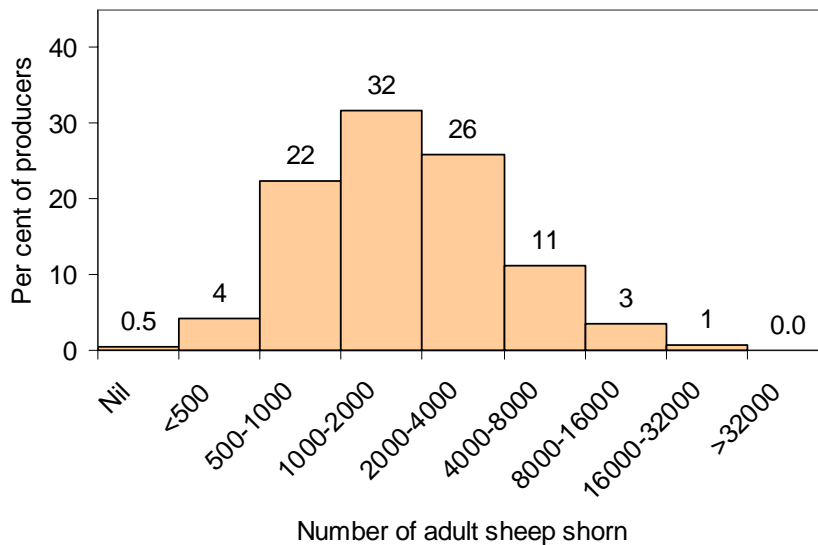


Figure 2. Size of the adult flock shorn per producer during 2006/2007. Data are from 1800 producers surveyed across Australia.

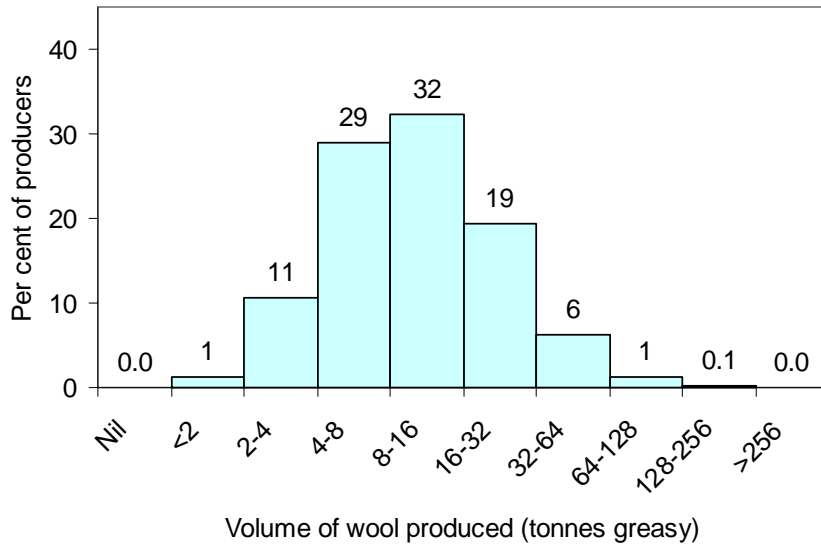


Figure 3. Volume of greasy wool produced (tonnes) per producer during 2006/2007. Data are from 1796 producers surveyed across Australia.

Figure 4 plots median wool production against median number of adult sheep shorn for 2006/2007¹. The straight line of best fit ($R^2 = 0.82$) is also plotted.

Including lambs as 0.7 of an adult produced a slightly better fit ($R^2 = 0.85$). Using the combination of adults and lambs indicated that, across Australia, 232 adult sheep equivalents were shorn to produce one tonne of greasy wool. This value varied between states ranging from 202 adult sheep equivalents for South Australia to 211 for Queensland, 221 for Western Australia, 227 for New South Wales, 248 for Victoria and 274 for Tasmania.

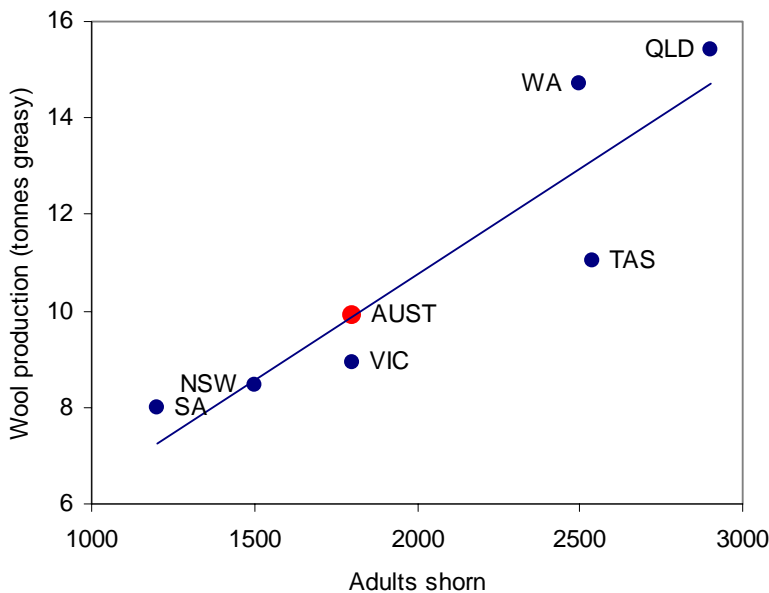


Figure 4 Relationship between median wool production (tonnes greasy) and median number of adult sheep shorn across Australia in 2006/2007

¹ Wool production, adult sheep and lambs shorn in 2006/2007 include producer estimates of expected wool production and sheep shorn to the end of June 2007.

On-Farm Situation

Current on-farm conditions

Quarterly meetings of state AWI Wool Production Forecasting committees record current conditions on farms and assess these conditions relative to the same time in the previous year.

Surveyed producers were asked to rate current conditions as either 'above average', 'average', 'below average' or 'drought'. Figure 5 combines the producer responses while the results for each state are presented in Figure 6. Eighty nine per cent of producers rated farm conditions as being 'below average' (23 per cent) or 'drought' (66 per cent). New South Wales, Victoria and Tasmania each recorded 'drought' for in excess of 70 per cent of producers. Western Australia recorded the lowest percentage of producers in 'drought' (36 per cent) but 46 per cent of producers in this state rated conditions as 'below average'.

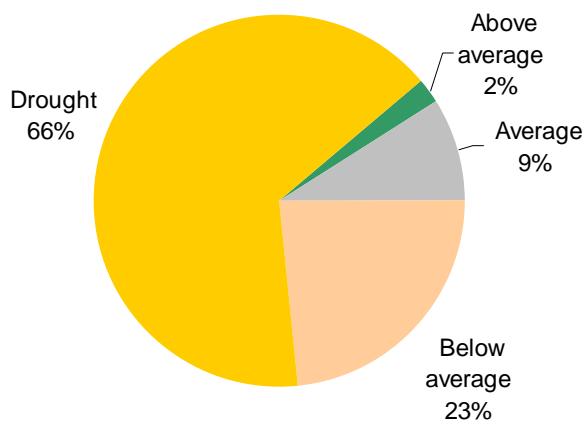


Figure 5. Farm conditions at the time of the survey (February 2007). Results for all of Australia.

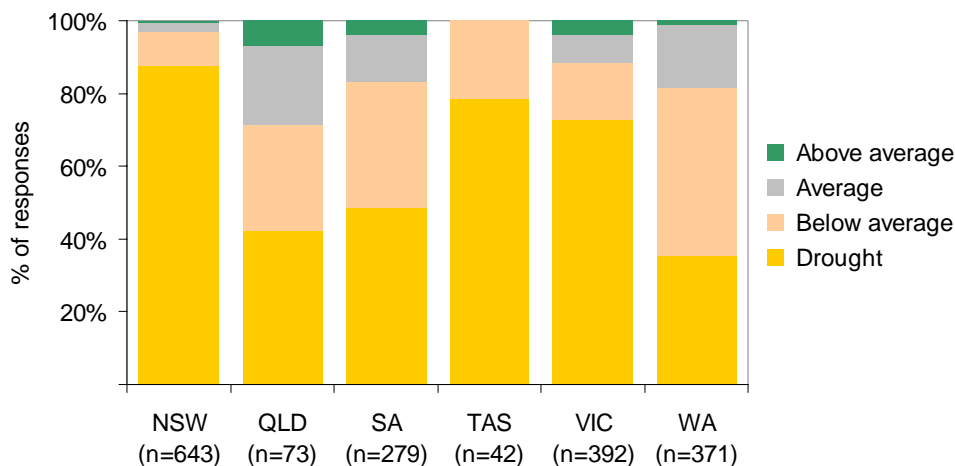


Figure 6. Farm conditions at the time of the survey (February 2007) for each state as assessed by the respondents.

Figures 7 and 8 show that the majority of producers across Australia (79 per cent) rated conditions in February 2007 as being worse than those in 2006. However Queensland went against this trend with 49 per cent of producers surveyed considering 2007 conditions better than those of 2006.

More than three quarters of all Australian producers stated they were experiencing drought or below-average conditions and that 2007 conditions were worse than those of the same time during 2006 (Table 2).

Overall, conditions were considered 'poor' and as having become worse during the past 12 months.

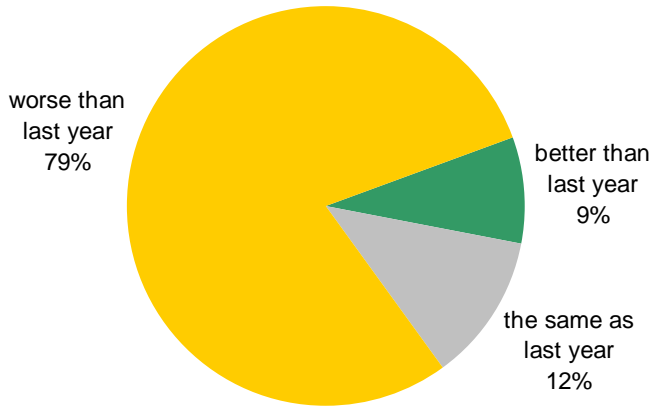


Figure 7. Conditions at the time of the survey (February 2007) compared to conditions at the same time in 2006. Results for all of Australia.

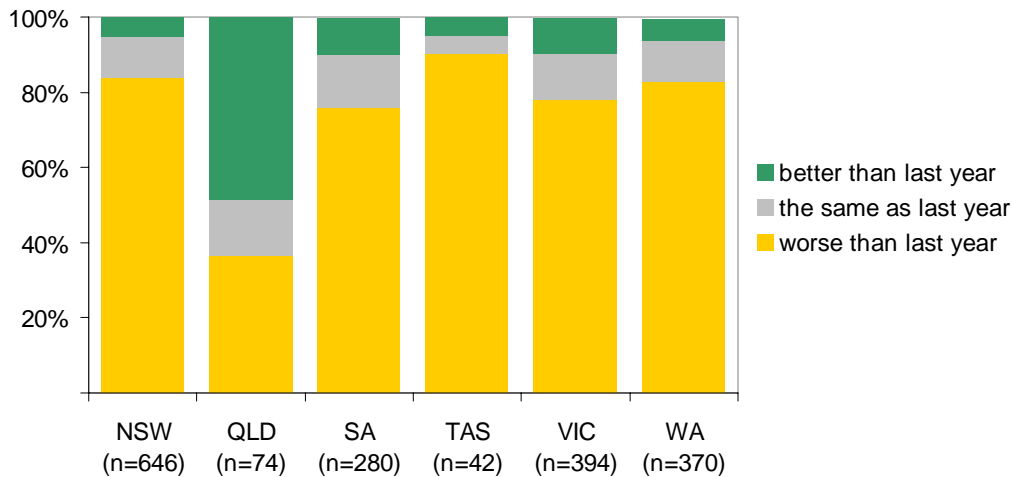


Figure 8. Conditions at the time of the survey (February 2007) compared to conditions at the same time in 2006. Results for each state.

Table 2. Proportion of producers (per cent) who considered conditions in February 2007 were 'above average', 'average', 'below average', or 'drought', and who rated current conditions 'better', 'the same' or 'worse' than conditions during February 2006.

compared to conditions at the same time last year are:	Current conditions			
	above average	average	below average	drought
better	2	3	2	2
the same	0	3	3	5
worse	0	3	18	59

Changes to enterprise mix

As the relative profitability of various enterprises change, producers respond by adjusting their mix of wool and prime lamb production or by shifting to other enterprises. Surveyed producers were therefore asked if they were planning to change their mix of wool and prime lamb production during the financial year 2007/2008. Across Australia, three quarters of all producers expected to maintain their current mix. Eleven per cent of producers indicated they would be moving toward more prime lamb production while slightly fewer (seven per cent) indicated they would be aiming for more wool production (Figure 9).

Tasmania recorded the highest proportion of producers intending to change towards wool or prime lambs (Figure 10).

The three largest wool producing states – New South Wales, Victoria and Western Australia – reported minimal numbers of producers intending to move away from wool and lamb production and toward other enterprises: New South Wales (six per cent of producers surveyed), Victoria (five per cent) and Western Australia (five per cent).

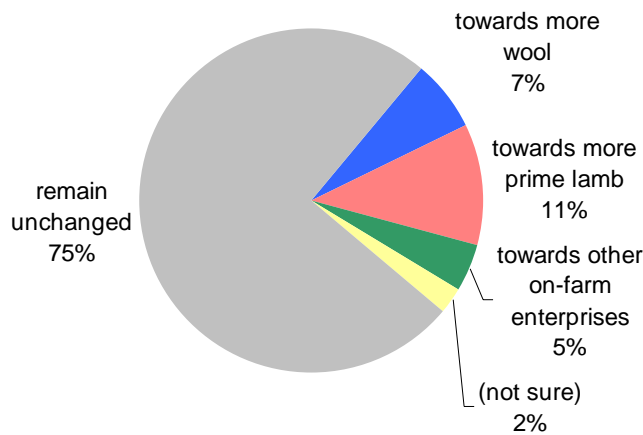


Figure 9. Proportion of Australian producers (per cent) intending to move toward 'more wool', 'more prime lambs', 'other on-farm enterprises' or remain unchanged during 2007/2008.

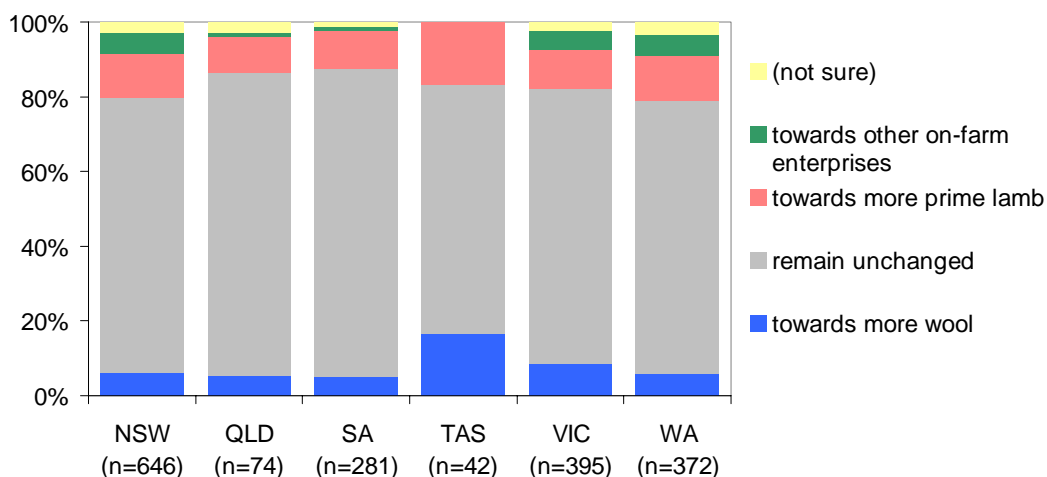


Figure 10. Proportion of producers (per cent) by state intending to move toward 'more wool', 'more prime lambs', 'other on-farm enterprises' or remain unchanged during 2007/2008.

FLOCK DEMOGRAPHICS

Ram choice

The Australian sheep flock is dominated by Merino sheep, which produce the world's largest supply of high-quality, fine wool. Merino rams are used where the emphasis is on wool production and to produce Merino replacements. Terminal sires are joined to Merino ewes to produce prime lambs, with some of the Merino first cross ewes being retained and mated to produce second cross Merino lambs for the meat market.

The choice of ram breed influences the type of lamb that can be turned off and the number of Merino sheep available as replacements. Wool quality and quantity differs between breeds with Merino sheep producing more and finer wool than cross breeds. Genetic progress in wool traits will be impeded when a proportion of the flock is mated to non-Merino rams, because the selection pressure on wool traits will be reduced.

Producers were asked how many ewes they joined to Merino and other rams in 2006 and their breeding intentions for 2007. These results are shown in Table 3 combined with data from 2004 (Curtis and Croker, 2005) and 2005 (Curtis unpublished). Producers in each state indicated they intended to join slightly fewer ewes to Merino rams in 2007 than they had in 2006 (Figures 9 and 10). Only South Australian producers intended to join proportionally more ewes to Merino rams in 2007 than they had in 2004 and 2005.

Part of the reason for the increase in the number of ewes joined to non-Merino rams is that there are more non-Merino ewes in the flock now. Only a small proportion of the non-Merino ewes are joined to Merino rams.

Table 3 Proportion (per cent) of ewes joined to Merino rams in 2004, 2005 and 2006, and intended to be joined in 2007. Number of responses relates to the 2006 and 2007 data.

State	2004	2005	2006	2007	Number of responses
NSW	62	61	57	55	646
QLD	92	87	79	73	74
SA	55	54	61	58	281
TAS	66	61	56	51	42
VIC	53	50	51	47	395
WA	69	68	69	67	372
AUST	63	61	61	58	1810

For 2007, the data were further split by ewe type (Table 4). The proportion of Merino ewes joined to Merino rams was higher in all states than the proportion of non-Merino ewes joined to Merino rams. According to farmer intentions, few non-Merino ewes, including Merino first cross (1X) and second cross (2X) ewes, will be joined to Merino rams in 2007.

Queensland continues to record the highest proportion of ewes joined to Merino rams reflecting the emphasis on wool production in this state. At the other extreme, Victorian producers joined only 51 per cent of their ewes to Merino rams in 2006, reflecting their greater emphasis on prime lamb production.

Table 4. Proportion (per cent) of ewes by breed that were joined or are intended to be joined to Merino rams for lambing in 2007

State	Merino ewes	Merino 1X ewes	Merino 2X/meat breed ewes	Number of responses
NSW	68	7	8	646
QLD	75	20	0	74
SA	71	11	6	281
TAS	67	3	3	42
VIC	63	4	10	395
WA	71	13	10	372
AUST	69	8	8	1810

Time of lambing

The distribution of the 'month lambing commences' for Merino ewes and Merino first cross (1X) ewes for each state is shown in Figure 11. The sample size for Merino first cross ewes was small compared to Merino ewes and this may account for some of the differences between breeds. There were insufficient data to produce meaningful distributions for second cross Merino/meat breed ewes. A more detailed analysis of time of lambing is in preparation for a future issue of Wool Desk Report.

Marking percentage

Marking percentages were recorded for Merino lambs (Merino ewe x Merino ram), Merino first cross (1X) lambs (Merino ewe x non Merino ram), Merino second cross (2X) lambs (Merino first cross ewe x non Merino ram) and meat lambs (meat breed ewe x meat breed ram) (Table 5). The sample size is very small for some combinations that are not common.

Table 5. Marking percentages by state for different lamb production systems in 2006. Numbers in blue refer to the number of survey respondents in each state.

State	Mo lambs		1X lambs		2X lambs		Meat lambs	
	%	Number	%	Number	%	Number	%	Number
NSW	77	425	83	328	79	20	99	50
QLD	64	48	71	19	74	2	110	1
SA	90	204	92	147	83	14	117	23
TAS	83	34	94	25	85	3	114	6
VIC	80	234	87	230	100	8	109	39
WA	81	305	84	203	74	9	97	18
AUST	80	1,250	86	952	83	56	105	137

Marking percentages for Merino lambs tended to be lower than those for Merino first- and second-cross lambs. Meat breed lambs had the highest marking percentage.

Table 6 summarises the marking percentages recorded for Merino ewes joined to Merino rams in 2004 (Curtis and Croker, 2005), 2005 (Curtis unpublished) and 2006 (Table 5).

Table 6. Marking percentages by state for Merino ewes joined to Merino rams in 2004, 2005 and 2006.

State	2004	2005	2006
NSW	74	77	77
QLD	68	65	64
SA	82	79	90
TAS	82	74	83
VIC	78	78	80
WA	81	87	81
AUST	77	79	80

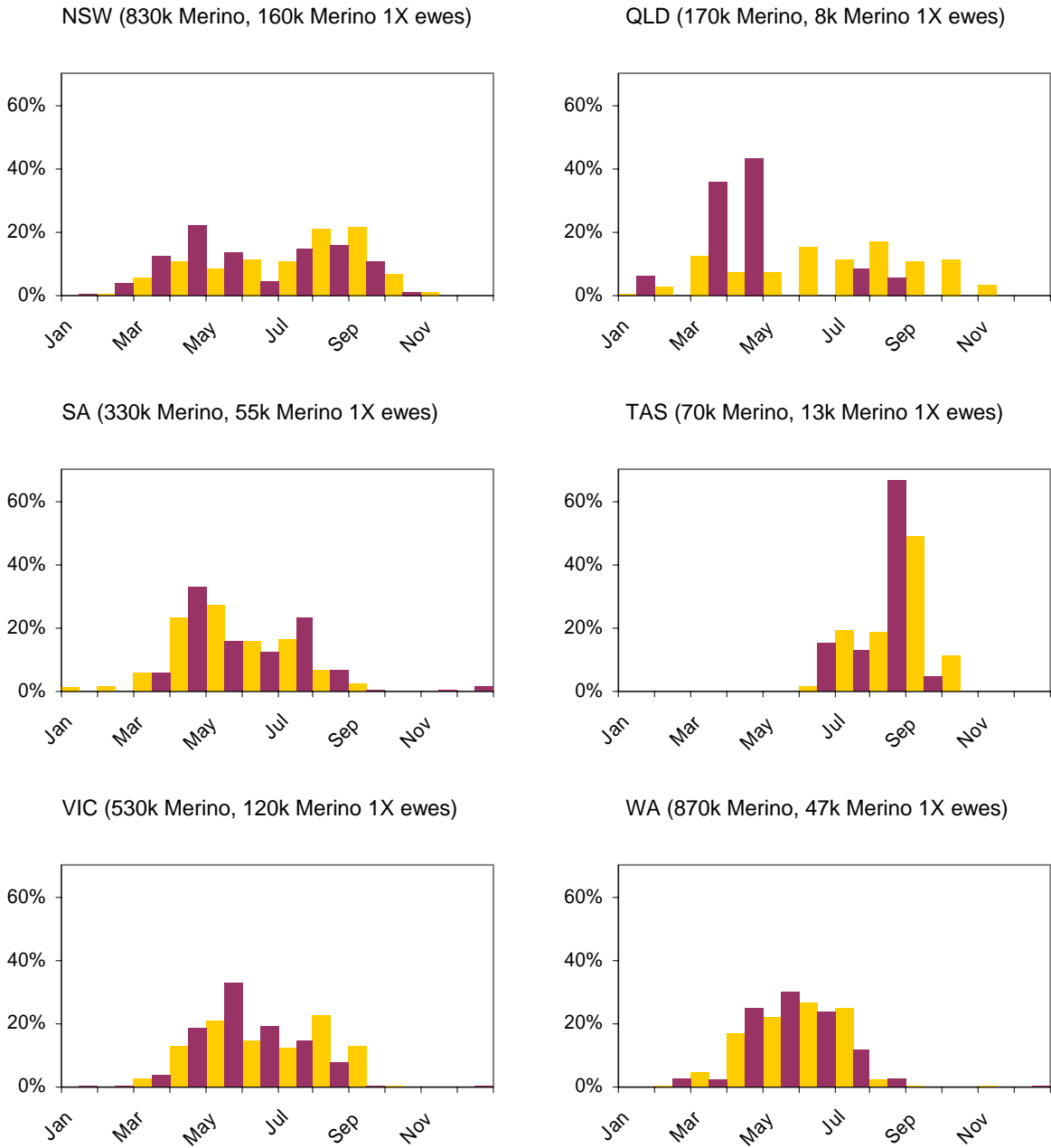


Figure 11. Month lambing commences by state for Merino (■) and Merino first-cross (■) ewes weighted by number of ewes to be joined in 2007. The number of Merino and first-cross Merino ewes included in the distributions are shown as thousands (k).

Flock composition

Flock composition on farms at 1 January 2007 was split by breed (Merino, Merino first-cross and Merino second-cross/meat breeds), by sex (ewes and wethers) and by age (lambs, hoggets and adults). Sheep born in 2006 were classified as lambs while those born in 2005 were classified as hoggets and those born before 2005 were classified as adults.

Merino sheep dominated the flock in all states, averaging 82 per cent of the flock across Australia (Table 7a). Queensland and Western Australia exceeded the Australian average. Second-cross Merinos and meat sheep breeds were most prevalent in Tasmania, South Australia and Victoria.

Ewes made up 72 per cent of the Australian flock (Table 7b) with the percentage for individual states ranging from 58 per cent in Tasmania to 80 per cent in South Australia.

At the beginning of 2007, just over 50 per cent of the flock were adults (born before 2005) (Table 7c). Differences in age distribution between the states were mostly small. Western Australia recorded the lowest proportion of adults (49 per cent) and Queensland the highest (60 per cent), five percentage units above the next highest state.

Table 7. Flock composition (per cent) at 1 January 2007 summarised by (a) breed, (b) sex and (c) age class for each state and Australia-wide.

(a)				(b)		
State	Merino	Merino 1X	Merino 2X or meat breed	State	Ewes	Wethers
NSW	80	15	5.3	NSW	73	27
QLD	95	5.4	0.2	QLD	61	39
SA	78	14	8.0	SA	80	20
TAS	79	13	8.3	TAS	58	42
VIC	77	15	7.8	VIC	66	34
WA	87	11	1.3	WA	75	25
AUST	82	13	4.7	AUST	72	28

(c)			
State	Lambs	Hoggets	Adults
NSW	31	16	52
QLD	22	19	60
SA	32	17	51
TAS	30	17	53
VIC	26	19	55
WA	33	18	49
AUST	30	18	52

The proportion of lambs in the flock at 1 January 2007 was influenced by several factors including the 2006 lambing rate (see 'marking percentage' in Table 5); conditions available to finish lambs; market price for lambs; the number of replacement lambs required; time of lambing (Figure 11); and, most importantly, the date the lamb count was recorded. Since lamb finishing has rarely been completed before the end of the calendar year, the contribution of lambs to the flock is probably exaggerated in the current survey particularly for Merino wether lambs and non-Merino lambs of both sexes.

If lambs are excluded from the flock composition analysis, the pure Merino component of the flock rises to 88 per cent (Table 8a) and ewes to 78 per cent of the flock (Table 8b).

Table 8. Flock composition (per cent) excluding lambs at 1 January 2007 summarised by (a) breed, and (b) sex for each state and Australia-wide

(a)				(b)		
State	Merino	Merino 1X	Merino 2X or meat breed	State	Ewes	Wethers
NSW	87	10	2.3	NSW	81	19
QLD	97	3.1		QLD	63	37
SA	83	12	5.0	SA	89	11
TAS	87	9	3.9	TAS	61	39
VIC	82	12	5.1	VIC	70	30
WA	94	6	0.7	WA	84	16
AUST	88	9	2.7	AUST	78	22

A complete flock composition (breed by sex by age) for each state and Australia-wide is given in Appendix 1, Table 9.

DISCUSSION

Seasonal conditions

Across all states, seasonal conditions were recorded as below average with two-thirds in drought. With the exception of Queensland, conditions were worse in the past 12 months than the previous 12 months. The difference between the current drought and the drought of 2002 is that it extends across all the major wool-producing areas of Australia. Consequently there is little opportunity for agistment and feed prices are high. The duration of the drought has resulted in most on-farm feed reserves being consumed and surplus stock has gone to slaughter rather than to regions with more favourable conditions.

Enterprise mix

The survey results indicate that the rate of change of enterprise mix is slowing with 75 per cent of producers intending to make no change to their enterprise mix during 2007 (Figure 9) and only a small reduction in the proportion of ewes intended to be joined to Merino rams in 2007 (58 per cent) compared to 2006 (61 per cent) (Table 3).

Reasons for the more stable enterprise mix could include recent movements in wool and prime lamb prices and the cloud of uncertainty imposed by adverse seasonal conditions. It is important to note that any further increase in the use of terminal sires will impact on the capacity of the Merino flock to be self-replacing and on culling options and hence genetic gain on-farm.

Time of lambing

Tasmania has the most compact lambing period of all the states with virtually all lambing occurring during late winter or spring. The three southern states, Western Australia, South Australia and Victoria, continue to have the majority of lambs born before mid-year, despite research showing many benefits from later lambing!

Flock composition

Merino sheep continue to dominate the Australian flock. Of all sheep over 12 months of age, 88 per cent are Merinos. The high proportion of Merinos in the national flock reflects the critical role this breed plays in the fine wool, live export and sheep meat industries.

At the start of 2007, ewes accounted for 78 per cent of all Australian sheep over 12 months old. This is little changed from the 79 per cent recorded for 2005 by Curtis and Croker (2005).

Ram choice

Choosing a ram breed to join to Merino ewes must meet the dual objectives of providing sufficient Merino replacements to cover deaths, cullings and sales and of producing a desired number of prime lambs. Joining too many Merino ewes to non-Merino rams will reduce the capacity of the Merino component of the flock to be self-replacing. The tipping point for Merino versus non-Merino ram usage is difficult to define because it depends on many factors including reproduction, death and sale rates, the age at which ewes are culled and flock breed composition (i.e. use of Merino first-cross and even Merino second-cross ewes). The issue is further complicated when terminal sires are opportunistically joined to Merino ewes to take advantage of prime lamb market conditions.

Flock outlook

The consequences of increasing the number of ewes that are joined to non-Merino rams needs to be interpreted in the context of the current flock composition. Poor seasonal conditions across most of Australia and culling to cut costs have resulted in a national flock dominated by ewes (72 per cent). The general practice when culling ewes is to remove the oldest cohorts first, after culling wethers and unsuitable sheep. It is therefore reasonable to expect that the 2007 sheep flock has proportionally more ewes of younger age than before drought conditions commenced, suggesting a resilient sheep population capable of rebuilding quickly.

Given a return to reasonable seasonal conditions rapid rebuilding of the national flock is to be expected, although this is likely to occur through breeding rather than re-stocking. Compared to previous droughts, the current drought has occurred across most of Australia and many producers have already reduced their flocks to a bare minimum. As a result, there will be fewer sheep available for rebuilding flocks out of sale yards and producers who have fed stock through the drought are unlikely to dispose of stock when conditions improve.

REFERENCE

Curtis, K. and Croker, K. (2005) Wool Desk Report – September 2005. Department of Agriculture WA, Issue no. 006. ISSN: 1449-2652. www.agric.wa.gov.au

APPENDIX 1

Table 9. Flock composition (per cent) at 1 January 2007 by breed, sex and age for each state and Australia-wide. In this table, lambs are sheep born in 2006, hoggets are sheep born in 2005 and adults are sheep born before 2005.

			NSW	QLD	SA	TAS	VIC	WA	AUST
Merino	Ewes	Lambs	11.3	9.7	13.1	9.3	8.8	14.4	11.6
		Hoggets	9.6	10.8	11.4	8.3	9.0	11.6	10.2
		Adults	38.1	36.6	38.2	25.7	31.3	40.8	36.9
	Wethers	Lambs	8.1	8.8	8.7	8.6	7.6	10.6	8.8
		Hoggets	4.3	6.9	3.4	6.1	6.1	4.8	5.0
		Adults	8.1	21.7	3.6	20.5	14.3	5.1	9.4
First cross Merino	Ewes	Lambs	4.4	1.8	3.2	3.8	3.5	4.2	3.9
		Hoggets	1.7	0.7	0.8	1.4	1.9	0.8	1.3
		Adults	4.8	1.5	6.9	4.7	6.2	2.3	4.4
	Wethers	Lambs	3.6	1.2	2.5	2.9	2.5	3.4	3.0
		Hoggets	0.4	0.1	0.2	0.3	0.6	0.3	0.4
		Adults	0.2	0.1	0.1		0.5	0.3	0.3
Second cross Merino or meat breed	Ewes	Lambs	2.0	0.1	3.3	2.9	2.2	0.5	1.6
		Hoggets	0.3		0.7	0.4	0.8	0.1	0.4
		Adults	1.1		2.5	1.9	2.3	0.4	1.2
	Wethers	Lambs	1.8	0.1	1.2	2.7	1.8	0.3	1.2
		Hoggets	0.1		0.2	0.4	0.4		0.2
		Adults			0.1		0.3		0.1
Number of responses			425	61	143	31	266	311	1237