

Deer industry: Annual statistics review

Results and discussion

This article outlines the New Zealand deer industry as it stood at 30 June 2006 by combining the Industry Survey¹ with Statistics New Zealand's Agricultural Production Survey² (APS, see Point 6). The figures confirm much of what has been evident anecdotally and are consistent with last year's industry survey. The New Zealand deer industry has become smaller and is becoming more likely to enter a 'low production environment'.

1. Sample

The Industry Survey was mailed, then re-mailed to non-responders, then further non-responders were telephoned several times. The Industry Survey received 2,257 responses (2,830 were received in the 2005 survey) of producers who were farming deer as at 30 June 2006. Farmers exiting the industry and an increased reluctance to complete the Industry Survey in 2006 are likely influencing factors in the lower sample size.

2. Herd size and composition

The Industry Survey returns indicated the following herd size and composition mix as at 30 June 2006. The results have been extrapolated to Statistics New Zealand's figures to account for non-responders (APS data).

	Industry Survey ³	Extrapolation to Statistics NZ figures
Weaner hinds	249,414	306,454
R2 hinds	123,870	152,198
MA hinds	515,592	633,505
TOTAL HINDS	906,886	1,092,157
Weaner stags	253,553	311,542
R2 stags	68,745	84,467
MA stags	89,064	109,434
TOTAL STAGS	419,701	505,443
TOTAL DEER	1,334,808	1,597,600
Hinds calving (at 80% of R2 and MA hinds based on responses) ⁴	510,459	627,199

Table 1: Total deer numbers and hinds calving.

- The Industry Survey as at 30 June 2006 indicated a breeding herd (R2 and MA hinds) of 786,000. The APS counted hinds mated to June 2006 at 745,000.
- The Industry Survey counted 1.335 million deer from its 2,257 responses. This is 84% of the APS' reported deer farmed deer population of 1.598 million.
- The APS figures of fawns surviving to weaning as a percentage of hinds mated (which includes, non conception, pre and post natal losses) ranged from 72

At a glance...

- Breeding hind population: 786,000 as at 30 June 2006 (842,000 in 2005)
- Weaner base: 618,000 as at 30 June 2006 (670,000 in 2005)
- Expected weaner base: 564-621,000 as at 30 March 2006 (630-665,000 in 2005)
- Velvet herd (ma stags): 109,000 as at 30 June 2006 (116,000 in 2005)
- Producers' slaughter intentions: 639,000 deer to ye 30 June 2007 (ye 30 June 2006 717,000)
- Producers intended to slaughter 48,000 mixed aged stags to year ended June 2007 which indicated some intention to decrease velvet production (65,000 in 2005)
- Producers generally stuck to the intentions they indicated in the 2005 survey⁵:
 - In 2005, producers indicated that they intended to slaughter 717,000 deer to 30 June 2006. The actual figure was 737,000.
 - In 2005, producers indicated that they intended to reduce total deer numbers by 129,000. According to the APS, they decreased total deer numbers by 108,000.
 - In 2005, producers indicated that they intended to reduce hinds numbers by 80,000. According to the APS, producers decreased hinds mated by 76,000.

to 79% between 2002 and 2006. Applying this range to the breeding population available in the 2005 survey (738,000) indicates total expected weaners in the 2006 survey of between 604,000 and 662,000. The number of weaners indicated by producers in the Industry Survey was at the lower end of this range at 618,000, which is 74% of total breeding hinds.

- The 2006 potential breeding hind pool figure of approximately 786,000 has been calculated to have 80% available for calving, (or 627,000 hinds), 11% less than the 702,000 hinds calculated in 2005.
- If that figure reflects the 10% loss typically recorded in the DeerMaster project and various other recording systems, then 564,000 weaners are expected in March 2007.

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¹ The extrapolated Industry Survey results rely on the accuracy of the Agricultural Production Survey which in turn relies upon accurate completion by producers. The Industry Survey reports producers' intentions at the time they completed the survey. By their nature, intentions may change as industry conditions and other factors change.

² The Agricultural Production Survey is provisional. The provisional survey information provided on 12 December 2006 has a margin of error of 3-4% at a confidence level of 95%.

³ The total hind and stag numbers in the Industry Survey do not equal the sum of the different classes within each gender because in some cases respondents provided total stag and hind numbers only. Further, as some respondents only provided total deer numbers, the total stag and hind numbers do not equal the total deer numbers provided. The extrapolated figures use the relative % in each sex and class from the Industry Survey to estimate total herd composition.

⁴ Estimations based on past returns of calves born and weaned from hinds calving is 95% (i.e. 5% loss from birth to weaning).

⁵ This consistency may be less evident in the 2006 survey given that producers would not have known about the increase in the price of velvet and stronger venison schedule which occurred later in 2006.

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- Using Statistics New Zealand figures at 75% overall weaning or 75% achievement of reproductive potential, 590,000 weaners are expected to be weaned in March 2007; and
- At 79% achievement, 621,000 weaners would be expected.

3. Intentions

3.a Herd growth or reduction

Respondents provided an indication as to intended changes in hind and stag numbers in their herd. This was expressed either as a change in deer numbers or % changes. Responses were converted to animal numbers and these results are shown below.

INTENTIONS	Stags		Hinds		Stags and hinds
	Number of respondents	Number of deer	Number of respondents	Number of deer	
Intentions to increase	240	11,846	351	20,704	
Intentions to decrease	553	(43,087)	647	(97,803)	
Net change indicated (decrease)		(31,241)		(77,099)	(108,000)
Extrapolated		(37,391)		(92,278)	(129,669)

Table 2: Intentions to increase or decrease herd size.

This intention to decrease deer numbers is very consistent with 2005, which also indicated an intention to decrease by 129,000 deer. This would be a further decrease in the total population of farmed deer of 8% to 1.468 million. Some producers may have changed their intention given higher producer returns for venison and velvet.

There were 154 survey responses which indicated an intent to exit the deer industry entirely. In addition, 42 intended to exit hinds only and 39 intended to exit stags only. The proportion of those intending to exit entirely comprises 7% of all respondents (in comparison to 9% in 2005).

3.b Producers' intentions to slaughter

	Survey	Extrapolated
Hinds for slaughter <2 yo	151,026	180,759
Hinds for slaughter >2 yo	96,042	114,950
Stags for slaughter < 2 yo	191,800	229,561
Stags for slaughter > 2 yo	39,961	47,828
	533,614	638,670

Table 3: Producers' slaughter intentions between June 2006 and June 2007.

NB: care should be taken in using the figures for hind and stag figures by age. Some 55,000 animals intended for slaughter were not broken down by age. Therefore, the individual classes will be understated.

Extrapolated intended total production of 639,000 deer to June 2007 indicates slowing production levels. But given producers indicated an intention to continue killing capital

stock (see 3a) slowing production is likely to be due to fewer deer being available for slaughter given the slaughter of capital breeding stock which has already occurred. This is consistent with Deer Industry New Zealand's Herd Model.

3.c Farms with deer on them

	2002	2003	2004	2005
Classified as deer farms	2,277	2,085	1,741	1,641
Farms with deer (not specialising)	2,058	1,932	2,195	2,121
TOTAL	4,335	4,017	3,936	3,762

Table 4: New Zealand farms with deer. Source Statistics New Zealand, APS 2005

Between 2002 and 2005 (latest available), 573 farms no longer have deer on them. This is a reduction of 13%. There are 636 fewer farms which are classified as deer farms (farms for which income from deer is the largest source of income).

The Industry Survey indicated that 36% of respondents earned 90% of revenue from deer, or deer comprised 95% of livestock.

4. Farm size and composition

No. of animals on farm	Number of farms	% of farms of those responding	% of deer represented on these farms	Cumulative number of deer in each range (ascending)
0-50	251	11%	1%	100%
51-150	474	21%	3%	99%
151-250	347	15%	5%	96%
251-500	469	21%	13%	91%
501-1,000	422	19%	23%	78%
1,001-2,000	213	9%	22%	55%
2,001-3,000	44	2%	8%	33%
3,001-4,000	12	1%	3%	25%
4,001-5,000	9	0.40%	3%	22%
5,001-10,000	12	1%	6%	19%
>10,000	4	0.18%	13%	13%

Table 5: Herd size distribution among survey respondees.

- Herd size is very similar to the 2005 survey.
- The average herd size is 560 in comparison to 583 in 2005. The decrease is consistent with producer intentions in 2005 and subsequent APS figures.
- The average size of farms with deer on them is 660 hectares, of which an average of 143 hectares are deer fenced (22% of the property). This is similar to 2005 and is an indication of the prevalence of mixed farming operations and therefore the ability of most farms to move in and out of deer depending on their circumstances.

5. Production

Aside from the Industry Survey, venison production statistics over time give an indication of changes within the national herd. If one assumes that the velvet herd remains relatively constant over time⁶, it is logical that the difference between

⁶ Clearly this is a large assumption. For example, at present velvet production is decreasing, and there was a significant decrease in the late 1990s following the Asian Economic Crisis. However, the purpose is to provide a 'rough guide'.

hind and stag production is an *approximate* indicator of changes to capital stock. That is, if more hinds are being slaughtered than stags, it is a basic indicator of a reduction in capital stock and *vice versa*.

Table 6 below shows production for the year ended September 1994 to 2006. This is also shown graphically in Figure 1.

	Total	Stags	Hinds	Hinds less Stags
1993	420,374	248,878	171,088	77,790
1994	351,699	180,803	170,665	10,138
1995	408,678	181,212	227,133	-45,921
1996	309,066	184,295	123,995	60,300
1997	311,749	222,324	89,425	132,899
1998	407,405	271,690	135,715	135,975
1999	420,337	245,676	174,661	71,015
2000	404,471	230,898	173,573	57,325
2001	508,995	286,320	222,675	63,645
2002	464,620	288,576	176,044	112,532
2003	550,263	297,056	253,207	43,849
2004	683,234	343,312	339,922	3,390
2005	762,427	364,484	397,943	-33,459
2006	735,936	345,232	390,704	-45,472
TOTAL	6,739,254	3,690,756	3,046,750	644,006
		55%	45%	

Table 6: Production for YE Sept 1994-2006

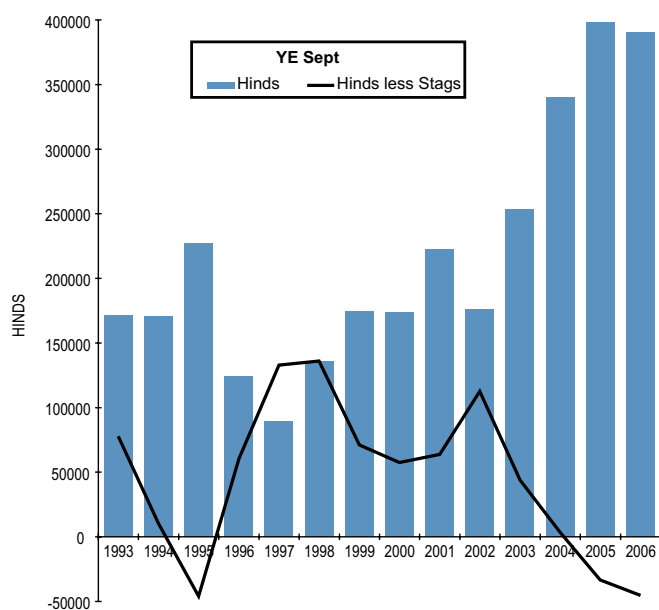


Figure 1: Hind production and stag less hind production.

And the winners are...

The Branch with the largest proportion of producers who returned the mailed survey was Wairoa. They have been sent a cheque for \$1,000 towards Branch activities. Don and Mary McLeod of Nelson won the draw of producers who completed the survey. They have also been sent a cheque for \$1,000. Our congratulations to the Wairoa Branch and the McLeods.

The last significant retention of hinds was in 2002 when 113,000 fewer hinds were slaughtered than stags. Since then, this has decreased to (45,000) despite a large increase in stag kill.

6. Statistics New Zealand's Agricultural Production Survey

For completeness, Statistics New Zealand's provisional results from its APS are reprinted below.

Deer Numbers ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾					
	Year to 30 June		At 30 June		Year to 30 June
	Female deer mated ⁽⁵⁾		Total deer		Fawns born on the farm ⁽⁶⁾
Series ref: AGRA	SARCZZZ		SAGXZZZ		SAR3ZZZ
2002	891,300		1,647,900		654,700
2003	885,600		1,689,400		670,400
2004	867,900		1,756,888		699,700
2005	821,200		1,705,100		648,400
2006	745,000	P	1,597,600	P	591,200 P

(1) There was no agriculture production survey conducted in 1997, 1998 and 2001. In 2000 the survey related only to horticulture. In 1994 and 2002, an agricultural census was conducted.

(2) The population for the 2002 Agricultural Production Census and subsequent surveys differs from that of previous agricultural censuses and surveys. Figures from 2002 onwards may not be directly comparable with previous years.

(3) Estimates have been rounded to the nearest 100.

(4) Changes were made to the question design in the 2004 and 2005 Agriculture Production Surveys. Figures for 2004 and 2005 may not be directly comparable with those from previous years.

(5) Number of female deer mated and still on the farm at 30 June.

(6) In 2005 and 2006, data relates to fawns born on the farm that were alive at four months. In 2003 and 2004, data relates to fawns weaned on the farm. In 2002, data relates to fawns born on the farm.

Symbols: P provisional

Table 7: Statistics New Zealand deer herd figures from Agricultural Production Survey.

Thanks!

Deer Industry New Zealand sincerely thanks producers for completing the survey. We hope you find this information useful and that you examine the numbers so that you form your own view on industry prospects. We welcome your comments and any discussion. Contact Mark O'Connor, Deer Industry New Zealand, PO Box 10-702, Wellington or mark.oconnor@deernz.org.

Further information

- Last year's Annual Industry Survey Results: www.deernz.org/resources
- Statistics New Zealand's Agricultural Production Survey: <http://www.stats.govt.nz/agriculture>, then click on Agricultural Production Survey
- 2005 Deer Monitoring Report: <http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/index.htm>, then click on 'deer'.