IT'S EWE TIME

Lifting Flock Reproduction and Survival

Chris Shands DII Glen Innes

What are the issues?

- Declining numbers of sheep available for slaughter and export
- Maintain a ‘critical flock size’ for the industry to function
- Declining pasture base due to drought

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The comparison of two meats: 2009

	Beef	Lamb
• **Livestock price**	-5%	**+13%**
• **Export value**	-$529m	+$162m
	-12%	**+18%**
• **Domestic value**	+$173m	+$208m
	+3%	**+10%**

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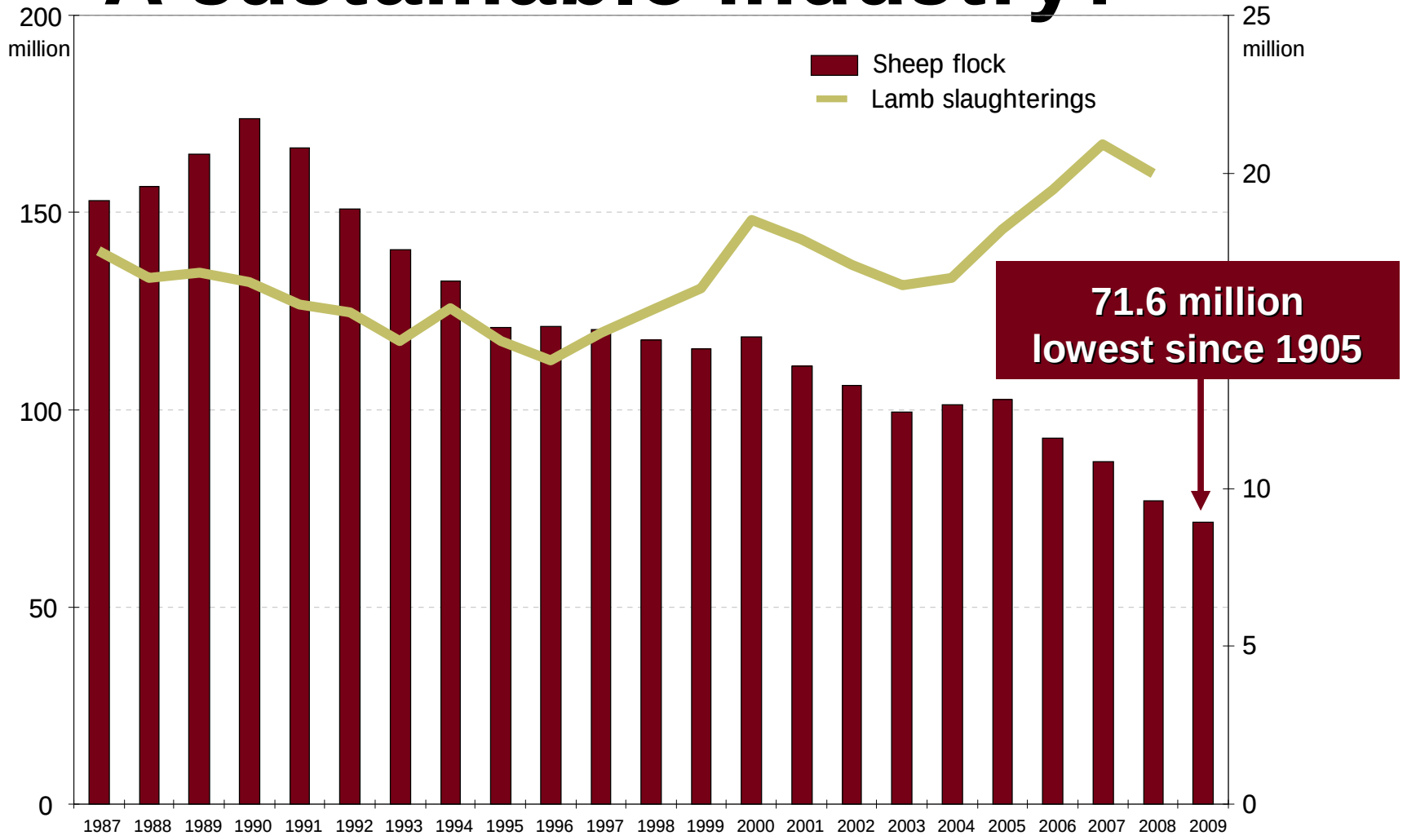
A sustainable industry?



Source: ABARE Australian Commodity Statistics 2007
Principal Agricultural Commodities, Australia (Preliminary) 2008-09 (cat no. 7111.0)

What can you do?

Lamb Birth weight

- **Increase conception rates**
  - Targeted nutrition and condition score weaning to joining
  - Genetics
- **Increase lamb survival**
  - Targeted nutrition and CS* during late pregnancy
  - Improved pasture utilisation
  - ***Pregnancy scanning***
  - Select the best performing ewes
- **Increase weaner survival**
  - Increase weaner weight
  - Target a post weaning Growth rate e.g 1kg gain/ month
  - Weaner health

Lifetime reproductive performance

Component of reproduction	Ewes ranked on lifetime reproduction rate			
	Lowest 25%	2nd quartile	3rd quartile	Highest 25%
Ewe fertility	55%	78%	88%	95%
Litter size	1.28	1.34	1.42	1.64
Lamb survival	**47%**	**74%**	**83%**	**90%**
Lambs weaned per ewe joined	**0.30**	**0.72**	**1.00**	**1.39**

Lamb survival rates for ewes SIL @130%

Survival rate	Ewes joined	Scan dry	Scan single	Marked single	Scan twin	Marked twin	Total marked lambs	Overall lamb survival
Common rate 80% single 40% twin	100	5	60 ewes	48 lambs	35 ewes 70 lambs	28 lambs	76	58%

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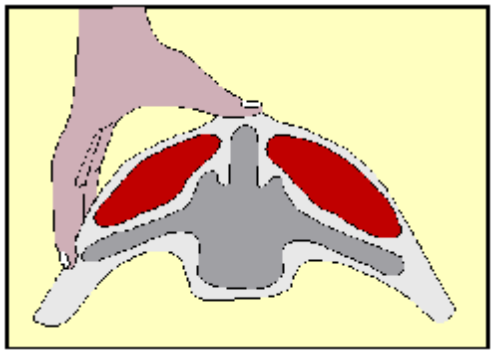
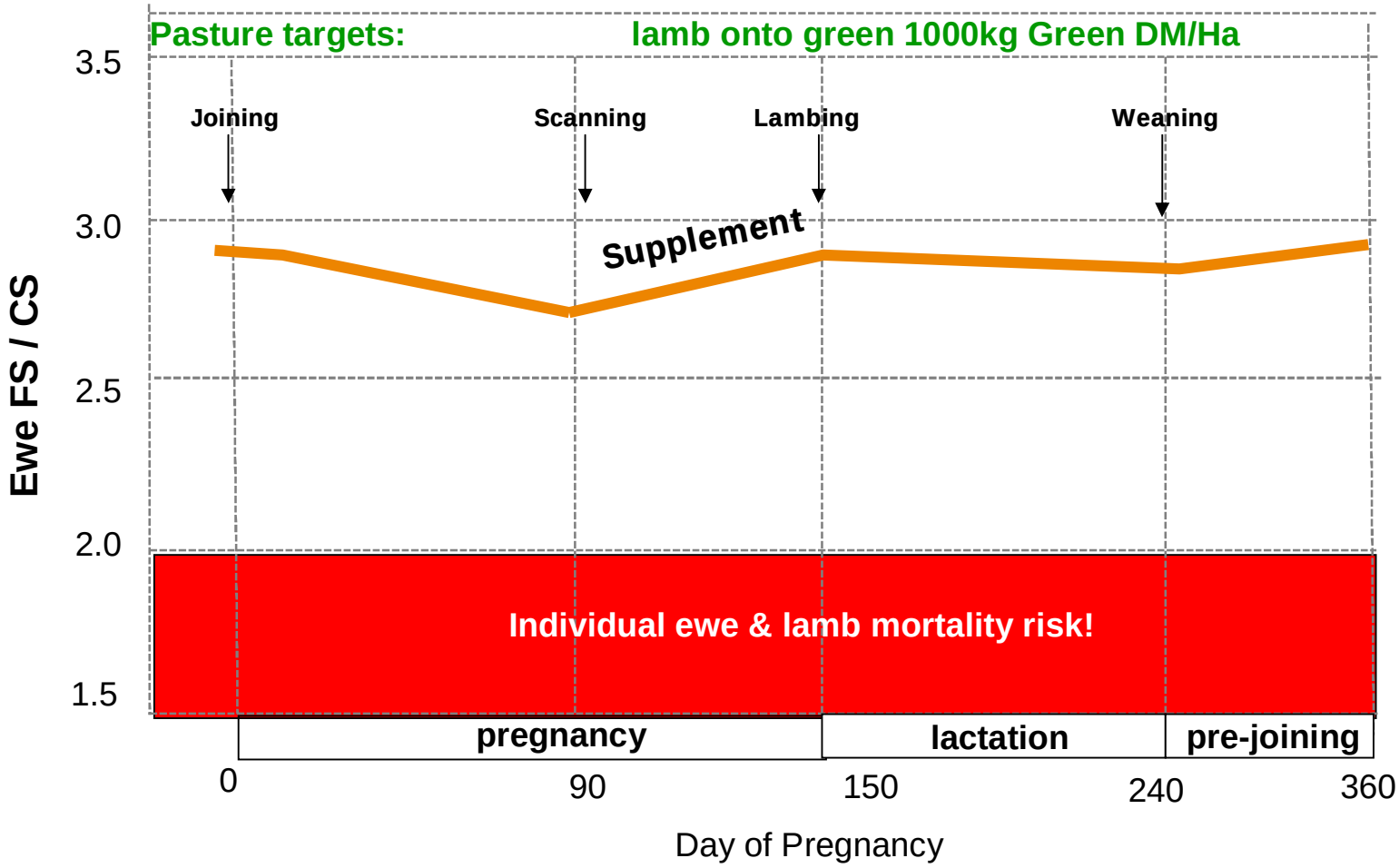
Common rate 80% single 40% twin	100	5	60 ewes	48 lambs	35 ewes (70 lambs)	28 lambs	76	58%
Target rate **90% single** **70% twin**	**100**	**5**	**60 ewes**	**54 lambs**	**35 ewes (70 lambs)**	**49 lambs**	**103**	**79%**



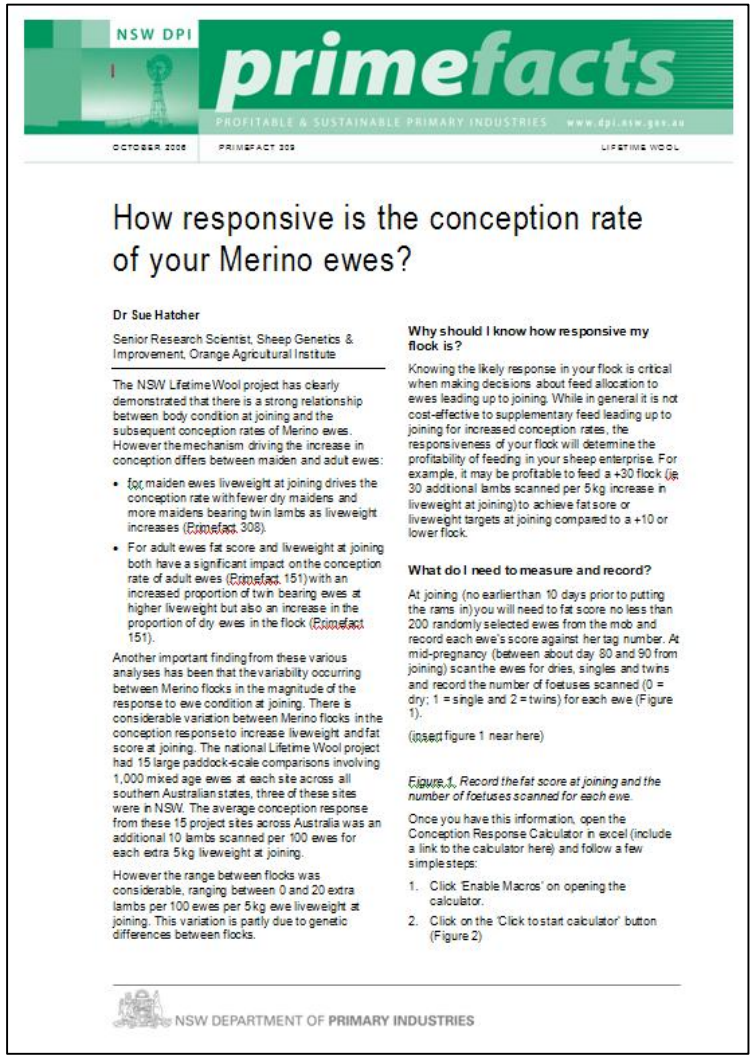
Active management is needed!

Set some ewe condition score targets

for late winter lambing



How responsive is my flock?



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OCTOBER 2008 PRIMEFACT 309 LIFETIME WOOL

How responsive is the conception rate of your Merino ewes?

Dr Sue Hatcher

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The NSW Lifetime Wool project has clearly demonstrated that there is a strong relationship between body condition at joining and the subsequent conception rates of Merino ewes. However the mechanism driving the increase in conception differs between maiden and adult ewes:

- for maiden ewes liveweight at joining drives the conception rate with fewer dry maidens and more maidens bearing twin lambs as liveweight increases (Primefact 308).
- For adult ewes fat score and liveweight at joining both have a significant impact on the conception rate of adult ewes (Primefact 151) with an increased proportion of twin bearing ewes at higher liveweight but also an increase in the proportion of dry ewes in the flock (Primefact 151).

Another important finding from these various analyses has been that the variability occurring between Merino flocks in the magnitude of the response to ewe condition at joining. There is considerable variation between Merino flocks in the conception response to increase liveweight and fat score at joining. The national Lifetime Wool project had 15 large paddock-scale comparisons involving 1,000 mixed age ewes at each site across all southern Australian states, three of these sites were in NSW. The average conception response from these 15 project sites across Australia was an additional 10 lambs scanned per 100 ewes for each extra 5kg liveweight at joining.

However the range between flocks was considerable, ranging between 0 and 20 extra lambs per 100 ewes per 5kg ewe liveweight at joining. This variation is partly due to genetic differences between flocks.

Why should I know how responsive my flock is?

Knowing the likely response in your flock is critical when making decisions about feed allocation to ewes leading up to joining. While in general it is not cost-effective to supplementary feed leading up to joining for increased conception rates, the responsiveness of your flock will determine the profitability of feeding in your sheep enterprise. For example, it may be profitable to feed a +30 flock (ie 30 additional lambs scanned per 5kg increase in liveweight at joining) to achieve fat sore or liveweight targets at joining compared to a +10 or lower flock.

What do I need to measure and record?

At joining (no earlier than 10 days prior to putting the rams in) you will need to fat score no less than 200 randomly selected ewes from the mob and record each ewe's score against her tag number. At mid-pregnancy (between about day 80 and 90 from joining) scan the ewes for dries, singles and twins and record the number of foetuses scanned (0 = dry; 1 = single and 2 = twins) for each ewe (Figure 1).

(insert figure 1 near here)

Figure 1. Record the fat score at joining and the number of foetuses scanned for each ewe.

Once you have this information, open the Conception Response Calculator in excel (include a link to the calculator here) and follow a few simple steps:

1. Click 'Enable Macros' on opening the calculator.
2. Click on the 'Click to start calculator' button (Figure 2)

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- Developed a simple procedure using:
  - condition /fat score at joining
  - pregnancy scanning info
  - computer based calculator

Source: Lifetime Wool

How does Scanning help?

- **Scan for pregnant (wet) or non-pregnant (dry)**
  - options: re-join, run as dry or sell

- **Scan for litter size- single or twin bearing**
  - Scan for twins if more than 10%

  Options: manage each group differently

  *feed twinners in late pregnancy to optimise lamb birth weight

  *lamb twinners together in mobs of **250**

  *control predators

Best use of pregnancy scanning information

- **Remove worst performers**
  - Dry ewes & those that fail to rear a lamb
- **Retain the best performers for longer**

  Above average reproduction rate

  Fewer maidens in the flock
- **Allows you to manage flock segments differently**

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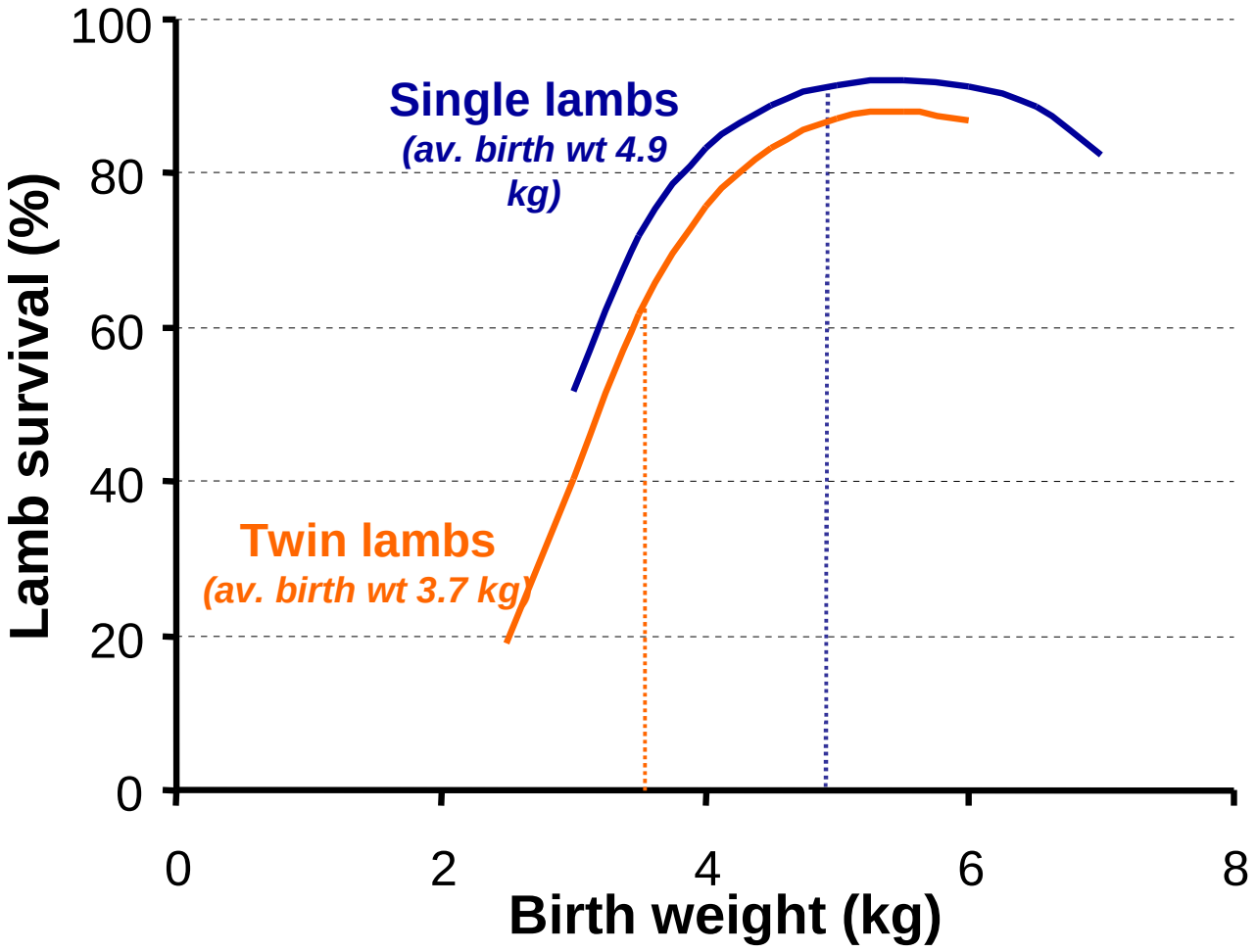
Lamb Survival Indicator Worksheet

Number of ewes joined.....		A
Number of lambs scanned.....		B
Scanning percentage (B ÷ A x 100) =.....		
Number of lambs marked.....		C
Marking percentage (C ÷ A x 100) =.....		
Survival % scanning to marking (C ÷ B x 100) =.....		

Lamb Survival Indicator Worksheet

Number of ewes joined.....	350	A
Number of lambs scanned.....	465	B
Scanning percentage (B ÷ A x 100) =.....	133	
Number of lambs marked.....	332	C
Marking percentage (C ÷ A x 100) =.....	95%	
Survival % scanning to marking (C ÷ B x 100) =.....	71%	

Lamb birth weight drives survival

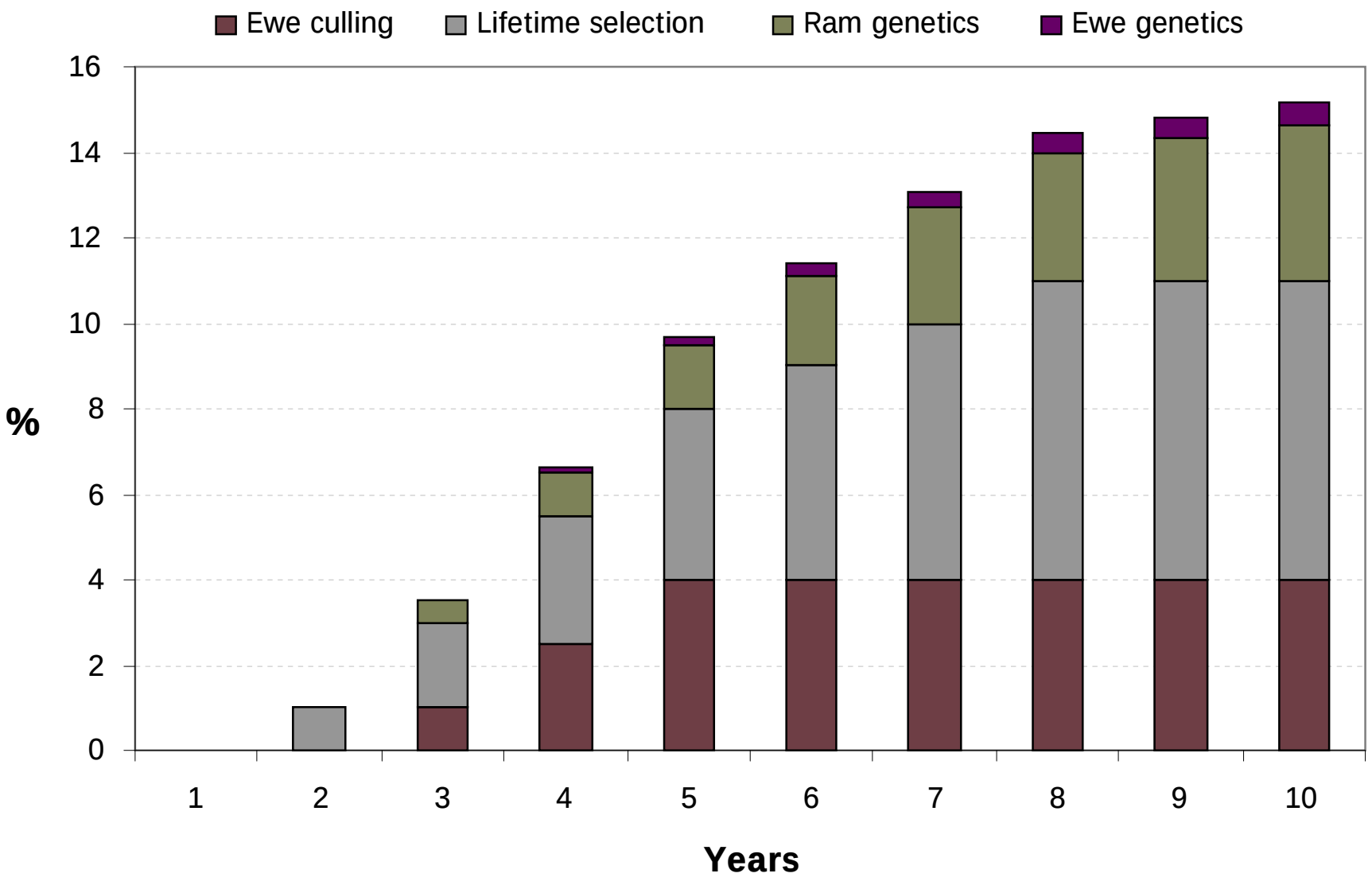


Source: lifetimewool

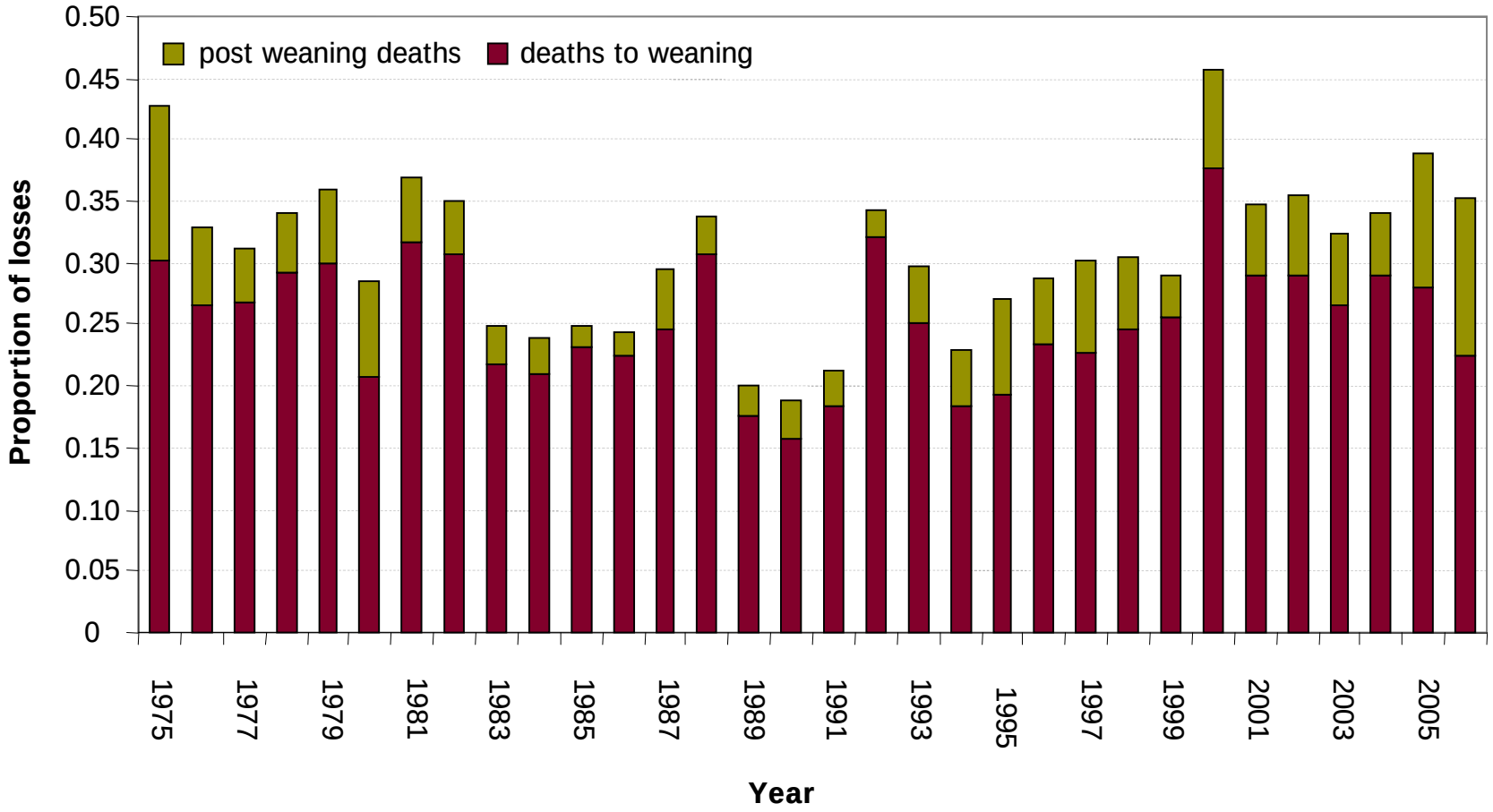
Benefits of better ewe nutrition

- **Maintain ewe production**
  - wool production and quality
- **Reduce ewe mortality**
  - fewer lambing difficulties
  - reduce the risk of pregnancy toxaemia
- **Optimise progeny production**
  - increase lamb birth weights and survival
  - improve wool production and wool quality
- **Save feed**
  - only feed those ewes that require it
  - provide flexibility if the season collapses

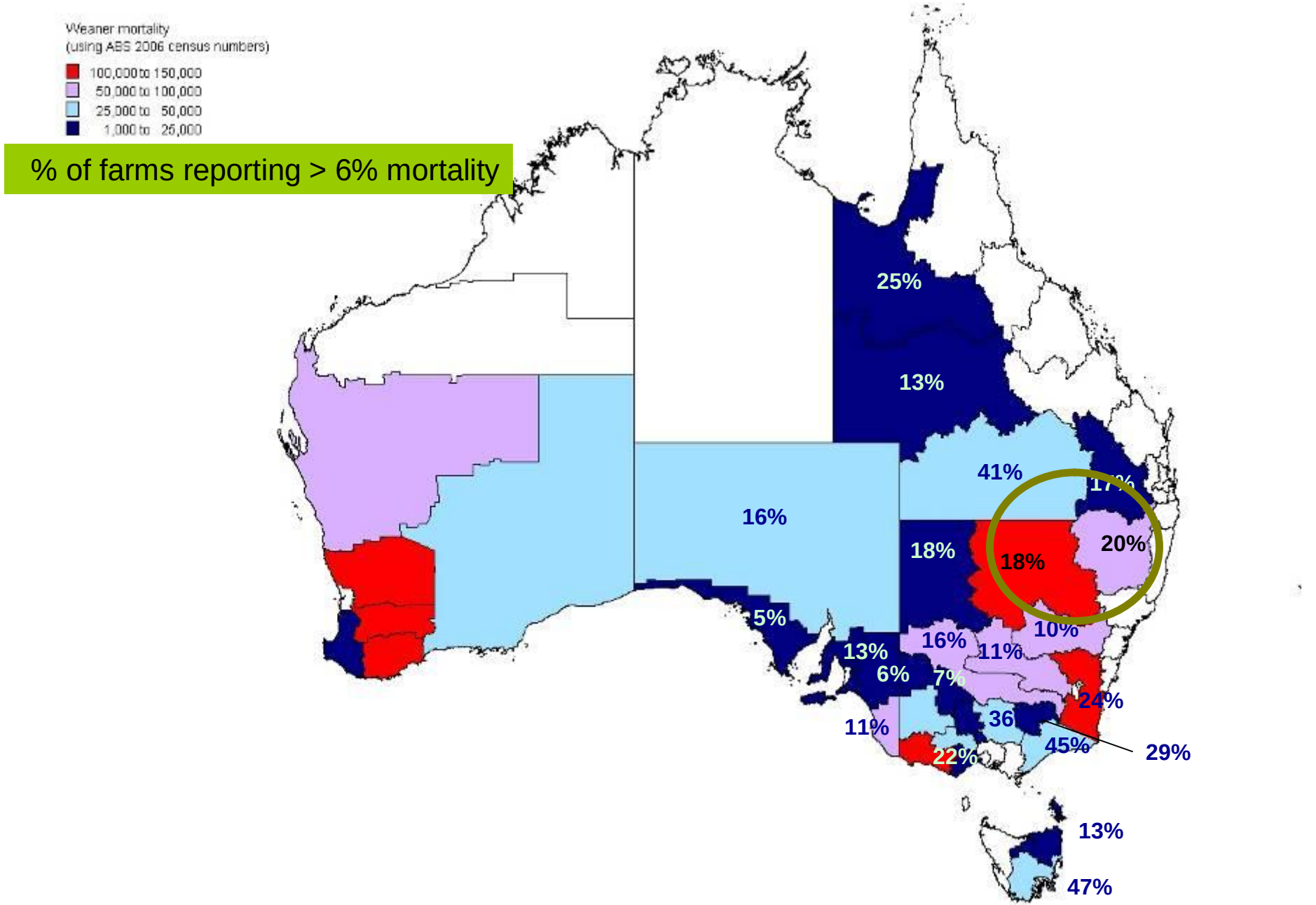
Gains in NRR from within flock selection



Most lamb losses occur pre weaning



Source: Pope and Atkins 2009



Sheep CRC and Wool Service Desk

Why manage weaners?

- More surplus sheep to $ell.
- More replacements– genetically more productive.

- Opportunity cost- a dead weaner costs a lot.
- Better maiden ewe performance.
- Welfare - is it acceptable to the consumer?
- Less susceptible to a range of health issues.

What can be done?

- Try to keep pasture digestibility high
- Teach them to feed with their mothers before weaning and use the ration they are likely to be fed in future
- Aim to get weaners to grow at .5 to 1kg/month until above 25 kg
- Manage internal parasites-use effective drenchs!
- Don’t forget water quality.

What else happening?

- Working with pregnancy scanning industry –

Managing Scanned Ewes Workshops

- Training courses for producers
  - ‘Lifetime Ewe Management’
  - ‘High Performance Weaners’

Sponsored by CRC and RIST

Summary

Know the nutritional needs of the flock

Aim to maintain Fat/Condition Score Targets-

- *At joining select twin lambing paddocks*
- *good seasons keep the weight off the singles*
- *every season feed the twinners for 3 weeks before lambing*

Adopt Selective culling

Develop an annual program