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Ovine Observer

Sheep industry turn-off update

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Western Australia's total sheep and lamb turnoff for 9 months of 2025 reached 3.93 million head, representing a 19% decline year-on-year and tracking 7% below 2023 levels. Despite this reduction, slaughter volumes remain historically strong, particularly for adult sheep.

Domestic slaughter reached 3.41 million head, down 11% on the same period in 2024. Adult sheep slaughter totalled 1.37 million head, a 7% decrease, but remained high in a long-term context following 2 elevated years in 2023 and 2024. Lamb slaughter declined 13%, falling from 2.35 million in 2024 to 2.05 million in 2025, reflecting both a smaller 2024 lamb drop and the later seasonal flow of 2025 lambs.

Live export volumes totalled 267,200 head, an 8% decline from 2024. Kuwait remained the major destination, taking 101,200 head, though this was 27% lower than last year. Trade remained subdued following the northern hemisphere summer moratorium and slower-than-usual resumption of shipping activity.

Interstate transfers fell sharply to 251,900 head, a 66% reduction from the unusually large 748,900 head moved in 2024. Both categories declined, with adult sheep transfers down 82% and lamb transfers down 50%. Lambs comprised 74% of all east-bound movements.

Lamb slaughter accounted for 52% of total turn-off, sheep slaughter for 35%, live export for 7%, and interstate transfers for 6%. The substantial fall in interstate transfers was the major driver of the overall turn-off decline compared with 2024, when strong eastern demand absorbed a far larger share of WA supply.

Flock modelling indicates that the WA flock, estimated at 12.4 million head in mid-2022, has likely declined to between 8.6 and 9 million head by July 2025. Elevated turn-off across 2023–24, driven by seasonal pressure, low prices and uncertainty around the Australian Government's live export phase-out, contributed to the reduction. However, improving prices and stronger seasonal conditions through 2025 have slowed the sell-down, increasing the likelihood of stabilisation—or potential flock recovery—entering 2026 if favourable conditions continue.

	2022	2023	2024	2025	YOY change
Lamb slaughter	1.86	2.16	2.35	2.05	-13%
Sheep slaughter	0.77	1.39	1.48	1.37	-7%
Live export	0.29	0.49	0.29	0.27	-8%
Interstate transfer	0.09	0.18	0.75	0.25	-66%
Total	**3.02**	**4.22**	**4.87**	**3.93**	**-19%**

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Read the full report.

FutureSheep – What will pasture production look like in south-west Western Australia in 2050?

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Introduction

Climate change is expected to reduce rainfall and increase temperatures in south-west Western Australia, creating challenges for pasture-based livestock industries. Pasture growth in this region depends heavily on seasonal rainfall patterns, and any change in the timing or amount of rainfall has direct consequences for feed supply. Trends over recent decades already show declining rainfall and shorter growing seasons, and these are projected to intensify by 2050. This study used simulation modelling to estimate how future climate conditions may alter pasture yields and seasonal growth patterns across different rainfall zones, and to highlight the implications for livestock production and farm management.

Key findings

- Pasture production declines by 2050, with the most severe impacts in low-rainfall zones.
- Low rainfall farms (<400 mm annual) face the steepest losses (up to 20%), risking feed shortages.
- High rainfall farms (>600 mm annual) experience smaller declines (~6%) but still face shorter growing seasons.
- Rainfall decreases average 8% under moderate emissions and 13% under high emissions.
- The growing season shortens at all sites, with later breaks and an earlier finish to the season.
- Monthly growth patterns shift; wetter zones may gain some winter growth, but overall feed supply still declines.

Without adaptation, livestock systems will face reduced feed supply, less reliable pasture growth, and increased management challenges.

Materials and methods

Eight representative sites across WA's rainfall zones were chosen, ranging from low to high rainfall areas. The GrassGro™ model was used to simulate pasture growth for ungrazed annual pastures under both current climate conditions and projected 2050 conditions. Climate projections were based on 2 greenhouse gas pathways: RCP 4.5 (medium emissions) and RCP 8.5 (high emissions). Current CO_2 levels (395 ppm) were compared with projected 2050 levels (500 ppm under RCP 4.5 and 610 ppm under RCP 8.5). Simulations covered 20 years of daily weather data (2002–21), and model outputs were validated against satellite data (Pastures from Space™) from 2004–21 to confirm accuracy.

Results

Across all 8 sites, rainfall is projected to decline by 2050, with reductions averaging about 8% under RCP 4.5 and 13% under RCP 8.5. These declines in rainfall lead directly to lower pasture yields.

At low rainfall sites, defined as those receiving less than 400 mm annually, pasture production shows the steepest declines, with reductions of around 20% under RCP 4.5. Under the more severe RCP 8.5 scenario, losses are even greater. The impact is not just on the total yield but also on the reliability of growth throughout the year. Nearly every month produces less pasture compared to the present climate, meaning feed shortages will become more frequent and more difficult to manage. The later onset of autumn rains delays the break of the season, while the earlier drying in spring brings forward the end of the growing period, leaving a wider feed gap between spring and summer.

High rainfall sites, those with more than 600 mm of annual rainfall, experience smaller reductions, around 6% under RCP 4.5, although the changes are still significant for farm systems. While the total amount of pasture produced falls less sharply, the distribution of growth shifts. In these zones, the growing season also compresses, with a later start and earlier finish. Interestingly, there is some evidence of slightly increased growth in winter and early spring as a result of warmer and milder conditions. However, these gains are outweighed by losses in late spring and autumn, meaning that the overall season is shorter and less reliable.

The compression of the growing season is a consistent outcome across all zones. The later seasonal breaks delay the availability of early pasture, forcing farmers to extend supplementary feeding in autumn, while the earlier finish in spring shortens the window for grazing high-quality feed. This seasonal shift reduces flexibility in livestock management, as the pasture supply becomes less aligned with animal nutritional requirements.

Discussion

The results highlight that south-west WA's grazing systems are heading toward reduced productivity and less reliable pasture growth under future climate conditions. For low rainfall areas, the scale of decline threatens the long-term viability of current production systems, as the drop in feed supply coincides with longer feed gaps and reduced seasonal flexibility. These changes will likely require major shifts in farm management, including a stronger reliance on supplementary feeding, changes to stocking rates, new feedbase options and possibly the reconsideration of enterprise mix in the driest regions.

In higher-rainfall zones, while the absolute declines are smaller, the compression of the growing season remains a serious challenge. Livestock will need to be managed within a shorter feed window, and producers may need to alter the timing of lambing or calving to better match the shifting availability of feed. The small increases in winter growth are not sufficient to compensate for losses later in the season, meaning that even these regions cannot rely on current systems without adjustment.

Overall, the findings underline the importance of proactive adaptation. Maintaining soil fertility and structure could help to maximise water-use efficiency, while the adoption of more drought-tolerant or summer-active pasture species may spread feed supply more evenly across the year. Forage crops and other non-traditional feed sources could play a growing role in bridging feed gaps. These system-level changes are likely to be essential for maintaining profitability and sustainability under the projected climate of 2050.

Conclusion

By 2050 without adaptation, it is likely that pasture yields in the cereal-livestock farming region of WA will be less and the growing season shorter. The severity of these changes will be far greater in rainfall environments receiving less than 400 mm of annual rainfall.

Acknowledgments

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Full paper

FutureSheep – What will pasture production look like in south-west Western Australia in 2050?

The number of offspring weaned from ewe lambs is affected differently by liveweight and age at breeding

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Introduction

Ewe lambs at 7 to 10 months of age can be bred with the objective of increasing lifetime reproductivity and farm profitability, although the number of weaned offspring is highly variable and generally poor when compared to older ewes. While it is well established that heavier ewe lambs at joining are more fertile, the individual contributions of age and liveweight to reproductive success, offspring survival, and ewe health are not clearly defined. The study aims to quantify the separate and combined effects of liveweight and age at breeding on the number of offspring weaned to further optimise ewe lamb management and breeding strategies.

Key findings

- Liveweight at breeding has a curvilinear effect on reproductive outcomes. Heavier ewe lambs wean more offspring but gains plateau at around 45 kg. Between 35–45 kg, each extra kilogram increases weaning rate by approximately 3%. Beyond 45 kg, further weight gain provides minimal benefit.
- Age at breeding has a linear effect on performance. Each additional day of age increases weaning rate by about 0.4%. Reproductive rate rises until around 8 months of age, then levels off. Older ewe lambs produce slightly heavier and more viable offspring.
- Liveweight and age effects are additive, not interactive. A 1 kg increase in liveweight has the same effect as being 7 days older at breeding. Both factors independently improve reproductive outcomes.
- Reproductive rate increases with both liveweight and age. The effect of liveweight is curvilinear (strong up to 45 kg, minimal beyond). The effect of age is curvilinear up to 8 months, after which further gains are negligible.
- Offspring birthweight and survival improve modestly with liveweight and age. A 10 kg increase in ewe liveweight raises lamb birthweight by 0.19 kg. An extra 30 days of age increases lamb birthweight by 0.14 kg. Offspring survival to weaning improves by around 4% for each month older the ewe is at breeding. Liveweight has only minor influence on survival once ewes reach 45 kg.
- Ewe mortality remains low across all ages and weights, exceeding 95% survival.
- Overall lamb survival is relatively poor, averaging 68%, with triplet lambs below 50% survival.
- Multiple-born ewe lambs (twins or triplets) outperform single-born ewe lambs in reproductive rate and weaning rate, despite being lighter at breeding.

Materials and methods

The study uses data collected between 2009 and 2017 from 2 large commercial sheep farms — Cashmore Park in Victoria and Oaklea Genetics in South Australia. More than 11,500 maternal composite ewe lambs are included, representing a range of breeds including Coopworth, White Suffolk, Poll Dorset, Border Leicester, Texel, East Friesian, Romney, and Finn.

Ewe lambs are naturally mated for 42 days and monitored from breeding through pregnancy, lambing, and weaning. Ewe lambs averaged 228 days old (7.5 months) and 40.2 kg at breeding, with most ranging between 35 and 45 kg and 6 to 9 months of age.

Data collected include liveweight, age, fertility rate, reproductive rate (foetuses per 100 ewes bred), weaning rate (offspring weaned per 100 ewes bred), offspring birthweight, offspring survival, and ewe mortality. Statistical analysis is conducted using Restricted Maximum Likelihood and Generalised Linear Mixed Models (GENSTAT software), with both linear and quadratic effects of age and liveweight tested. Birth type, year, and sire are included as additional factors.

Results

The analysis shows that both liveweight and age at breeding significantly influence reproductive performance, offspring outcomes, and ewe survival, although their effects differ in nature and magnitude.

Ewe lambs heavier at breeding display higher reproductive and weaning rates, but the relationship plateaus at approximately 45 kg. Beyond this threshold, additional weight yields minimal improvement. The relationship between liveweight and reproductive rate is curvilinear, whereas age demonstrates a linear relationship with weaning rate, increasing steadily across the range from 6 to 9 months.

Liveweight and age exert additive effects on reproductive performance rather than interacting with one another, indicating that both factors independently contribute to reproductive outcomes.

Offspring birthweight and survival also increase with both liveweight and age, although these effects are small. Lambs from older or heavier ewes are heavier at birth and more likely to survive through to weaning.

Ewe survival remains high (above 95%) across all categories of age and liveweight. However, overall offspring survival averages 68%, with significantly lower survival among triplet-born lambs.

Multiple-born ewe lambs (those born as twins or triplets) outperform single-born ewe lambs in reproductive rate and weaning rate despite being lighter at breeding.

Discussion

The results demonstrate that ewe lambs that are both heavier and older at breeding wean more offspring, supporting the hypothesis that both factors are important but operate through different mechanisms. Liveweight primarily enhances reproductive rate — heavier ewe lambs conceive more successfully — while age primarily improves offspring survival through greater maternal maturity and better mothering ability.

A target breeding weight of around 45 kg is identified as optimal for ewe lambs, as performance gains beyond this point are minimal. Breeding ewe lambs earlier can still be effective if they achieve adequate growth before mating; however, reducing breeding age

by one month requires approximately 30% faster growth rates to maintain comparable weaning outcomes.

The relatively small influence of pre-breeding liveweight on lamb survival highlights the importance of nutrition and management during pregnancy and lambing. Older ewe lambs likely produce more milk and show stronger maternal behaviour, which enhances offspring survival. Despite variations in reproductive performance, ewe mortality remains low, indicating that breeding younger or lighter ewe lambs does not pose welfare risks when managed correctly.

Conclusion

Both liveweight and age at breeding are major determinants of reproductive performance in ewe lambs but affect different aspects of success. Heavier ewe lambs conceive more successfully and have higher reproductive rates, while older ewe lambs produce heavier and more viable offspring. The effects are additive, allowing flexibility in management and nutrition planning.

The study identifies 45 kg liveweight and 8 months of age as practical breeding targets for optimal results. Since lamb survival remains relatively low, the authors recommend further research into management practices during pregnancy and lambing to improve offspring outcomes.

This large-scale, multi-year study provides clear, evidence-based guidance for sheep producers, highlighting how careful management of growth and breeding age can enhance productivity and animal welfare across Australian sheep systems.

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Full paper

The Number of Offspring Weaned from Ewe Lambs Is Affected Differently by Liveweight and Age at Breeding

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