



meatup FORUM

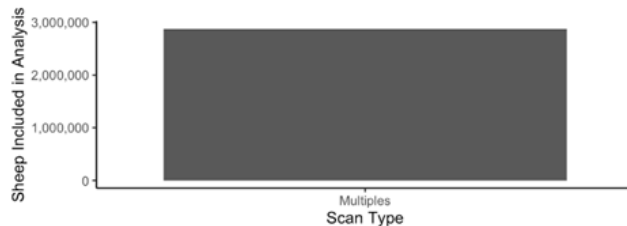
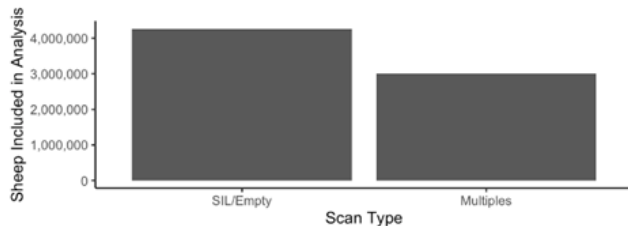
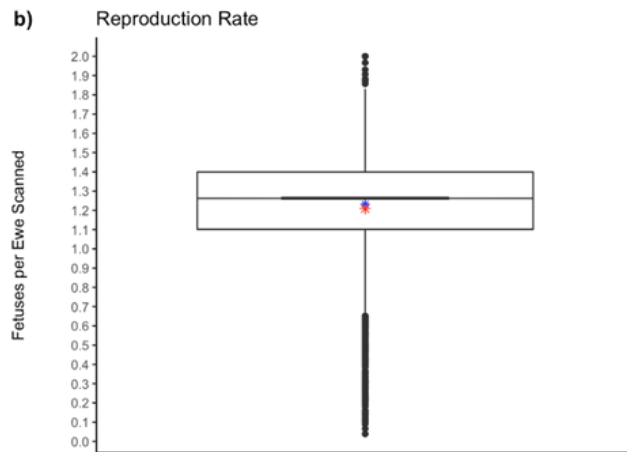
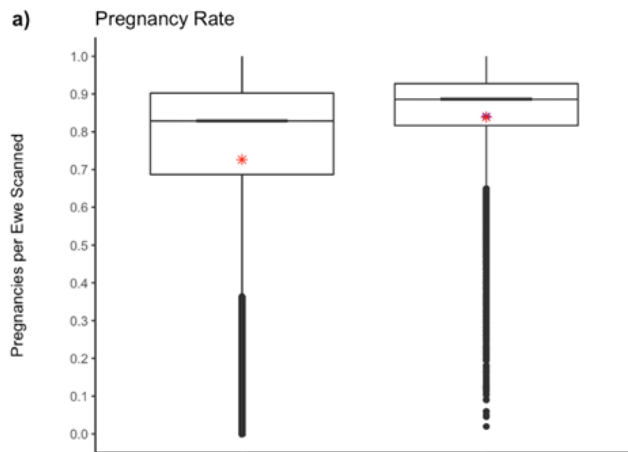
**For the latest in red meat research and development
Cooma, NSW – 13 May 2026**

Maiden ewe fertility

Gordon Refshauge
SheepMetriX

National pregnancy rates?

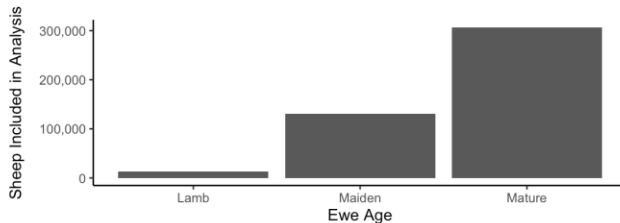
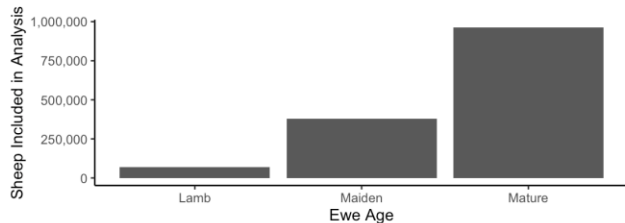
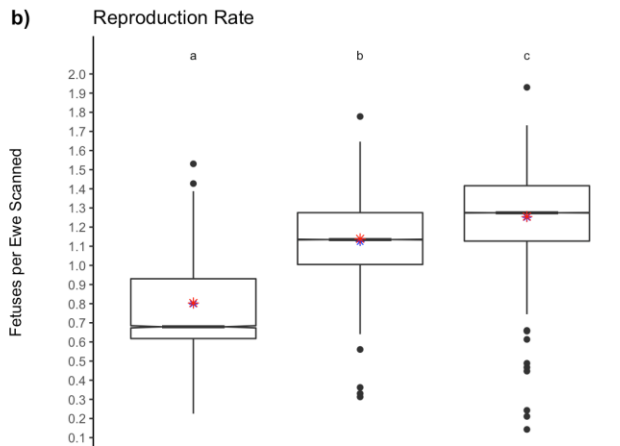
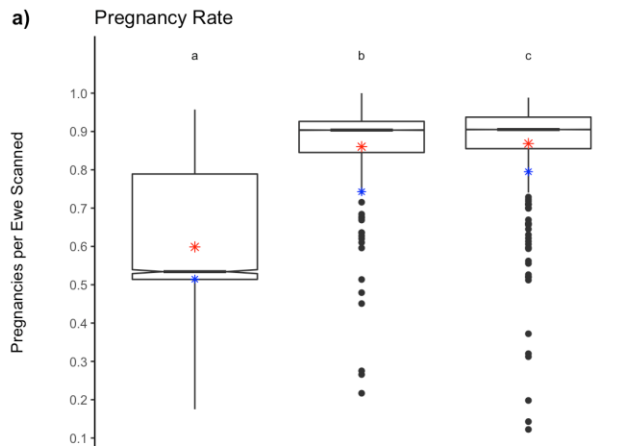
Refshaug et al. (2024). *Sci Rep* 14, 17781



- **14 yr timeline**
- **7.44M ewes**
- **Av. pregnancy rate 76%**
- **Av. Scanning rate 121%**
- **1/3 of ewes $\leq 70\%$**
- **2/3 of ewes $\leq 90\%$**

Ewe age

Refshauge et al. (2024). *Sci Rep* 14, 17781



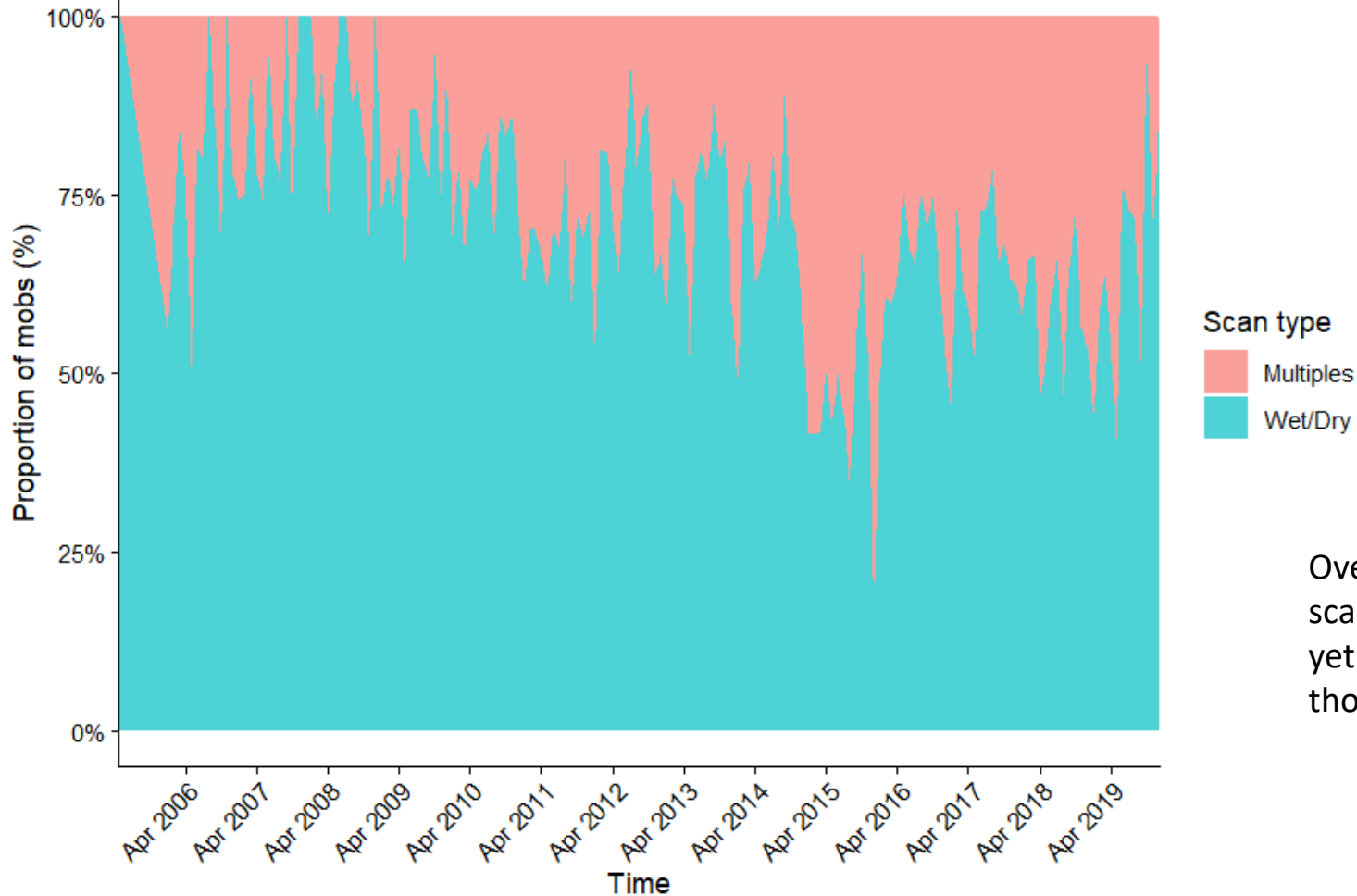
Fertility

Lambs 51%
Hoggets 78%
Mature 79%

Fecundity

Lambs 81%
Hoggets 115%
Mature 126%

Proportion of mobs scanned for multiples



Overall ~ 30% of mobs scanned for multiples, yet ~ 40% of ewes are in those mobs

Background thinking

- Does it matter what your reproduction rate is if your farm is fully stocked?
- Surplus animals offer cash flow, genetic gain and product quality improvement
- For self-replacing flocks, net reproduction rate needs to be sufficiently high to enable a stable flock structure, after which surplus animals can be found.

Flock structure model

- An exercise using MS Excel to develop a model to assess effect of culling % on flock structure.
- What % of ewes can be culled before I draw down on breeding ewes?
- Should I cull my empty, dry and lambed and lost ewes or should I give any of them a second chance?
- Your weaning rate affects how many ewes are surplus

The guts of the flock structure model

Conditions:

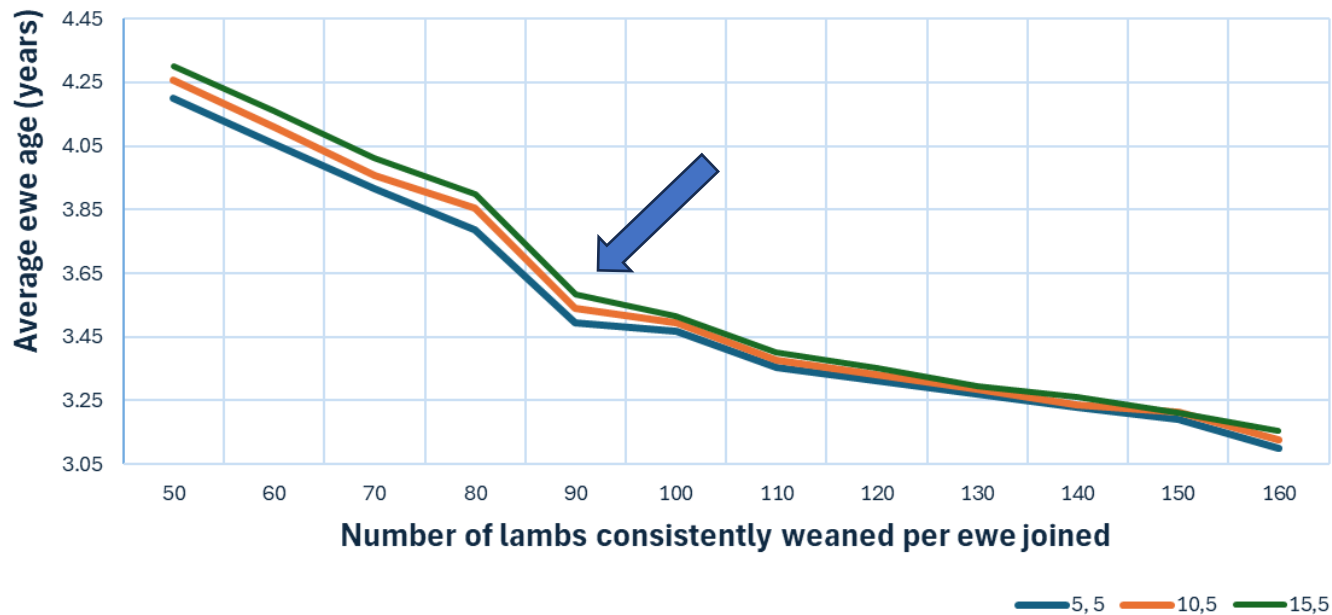
- Modelled for 7 years
- Target 100% of ewes mated, either breeding from 6 or 7 y.o. ewes
- Ewe mortality set at 5%
- Adjust maiden and adult ewe reproduction rates (fertility, litter size, lamb survival) to stabilise NLW/EJ
- Adjust maiden and adult ewe classing rates to stabilise flock structure
- Tweak the culling rates for 3 levels of weaner mortality (5%, 10%, 15%)

Key observations from the modelling

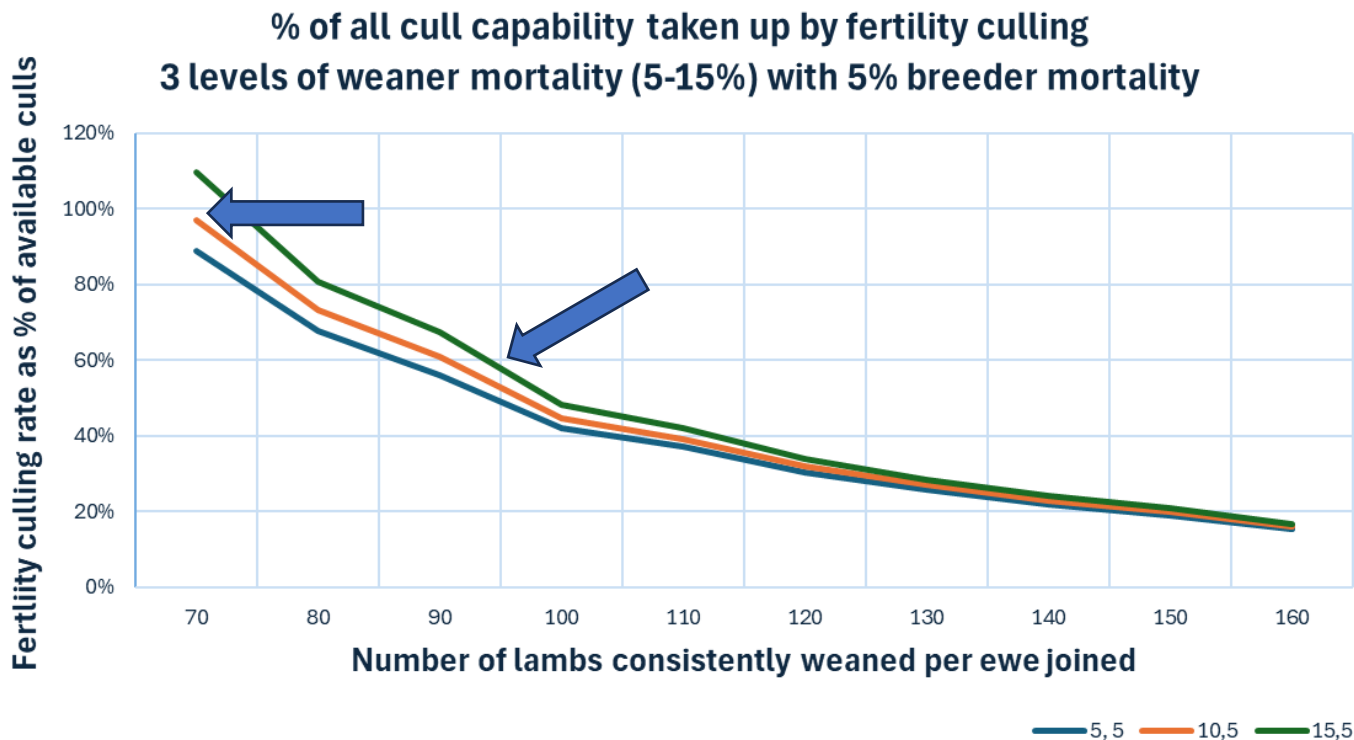
- Very low rates of NLW means:
 - Few ewes can be culled
 - Older ewes are retained, ↑ flock age, ↓ decreasing genetic gain
 - Can't cull on first time fail
- Due to lower maiden reproduction rates, not culling enough maidens lowers NLW (*there needs to be some balance*)
- You can't cull first time fail until NLW/EJ exceeds **70%**, at which point very little culling pressure is available for non-reproduction traits

Average age of the flock

Ewe age and Flock weaning rate.
3 levels of weaner mortality (5-15%) with 5% breeder mortality

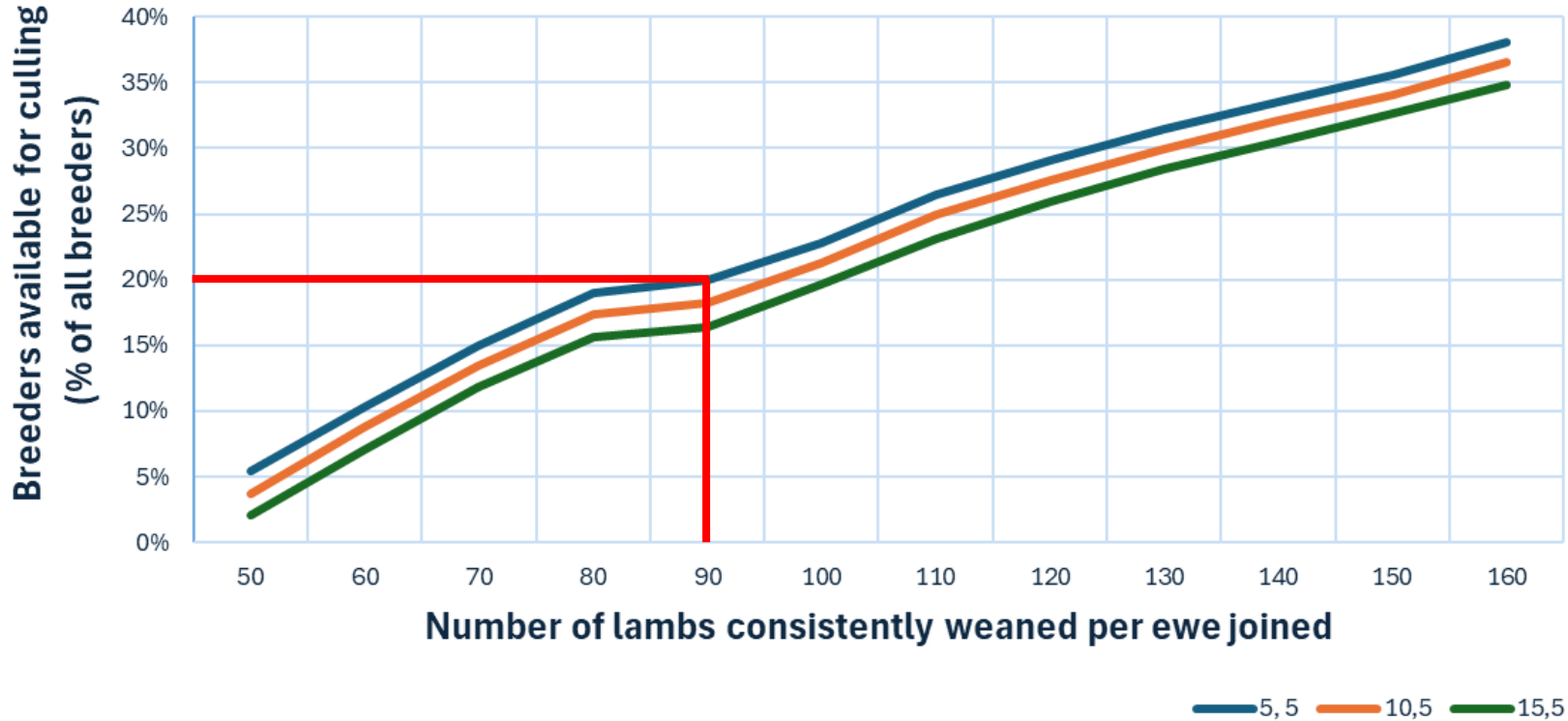


Fertility culling % as a % of available cull. Filtered



Culling breeders vs Flock weaning rate.

3 levels of weaner mortality (5-15%) with 5% breeder mortality



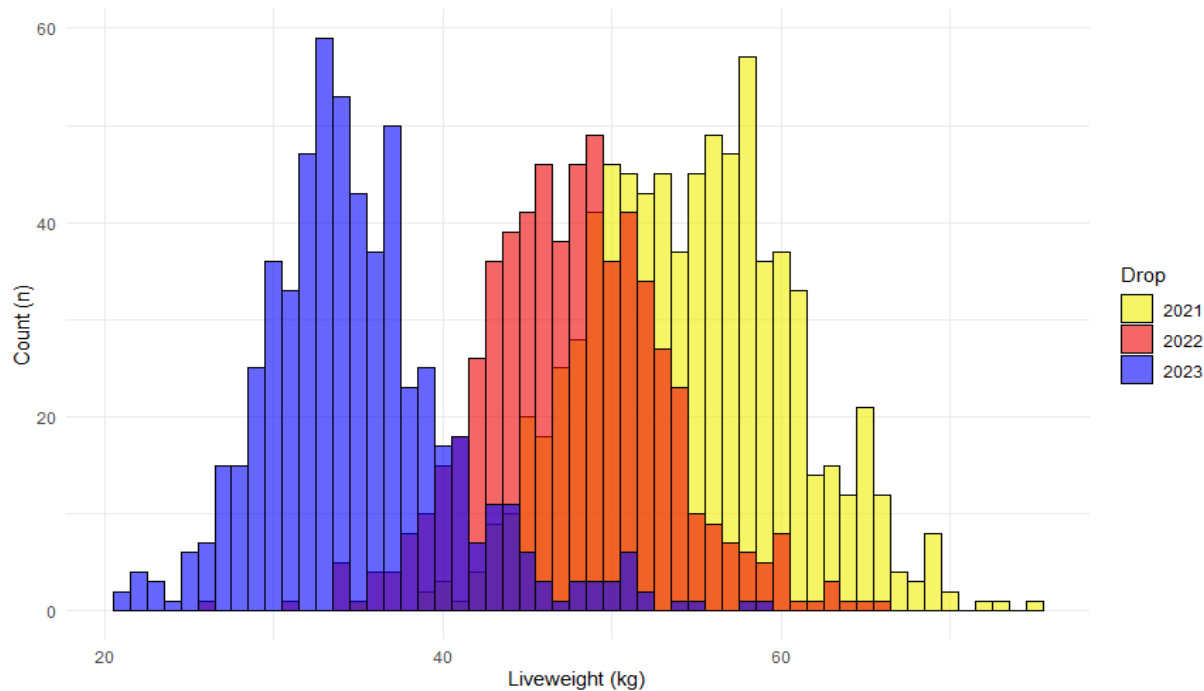
Beaconsfield - Ilfracombe



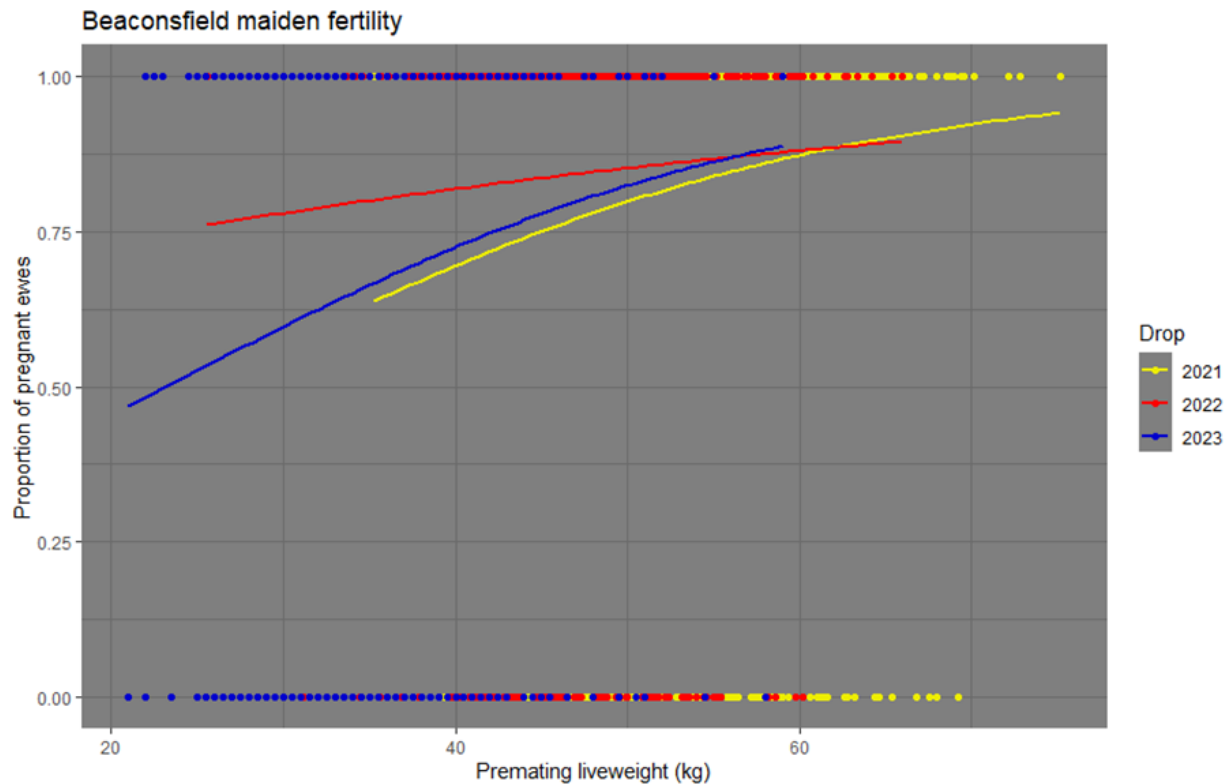
Number of ewes and records – project life

Drop	No. ewes	Liveweight records	Reproduction records
2021 yellow tags	820	2174	3590
2022 red tags	662	4582	2324
2023 blue tags	711	2531	1311
Totals	3464	9287	7225

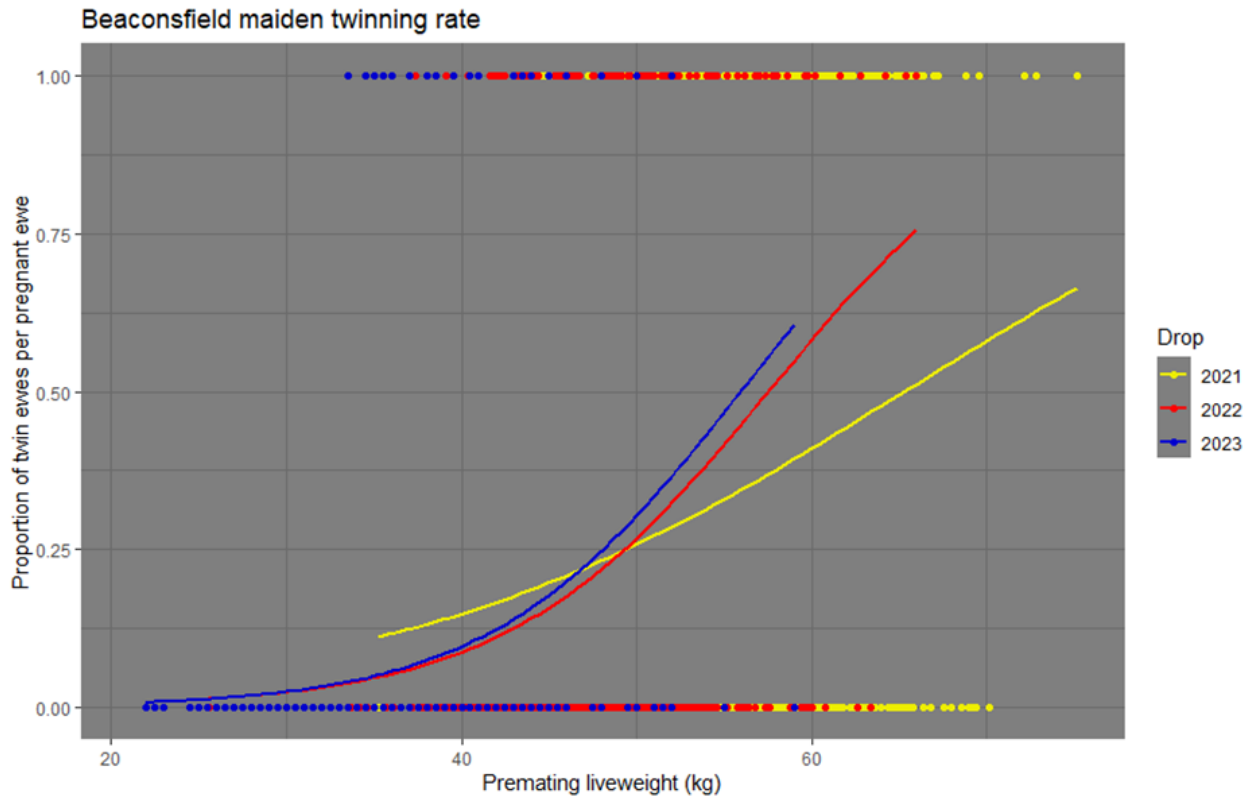
Beaconsfield maiden Merino ewes



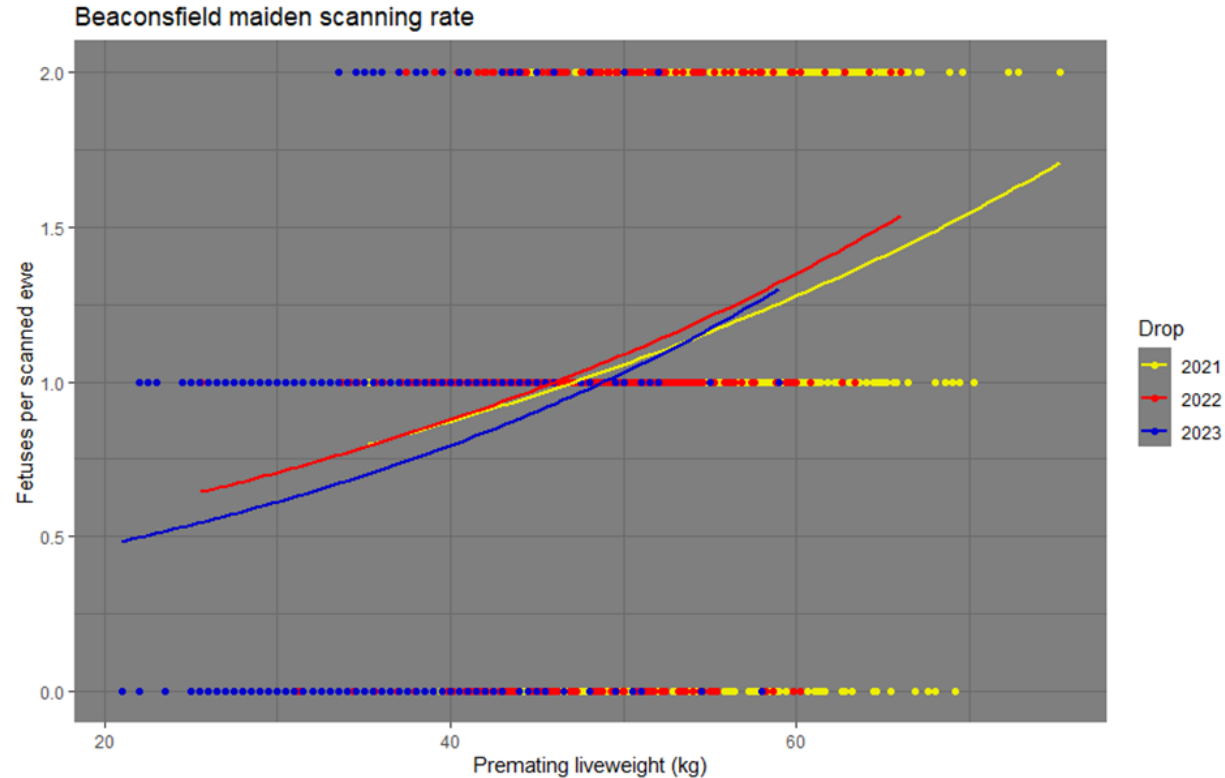
Fertility (ewes pregnant / ewe joined)



Twining rate (Proportion twins / ewe pregnant)



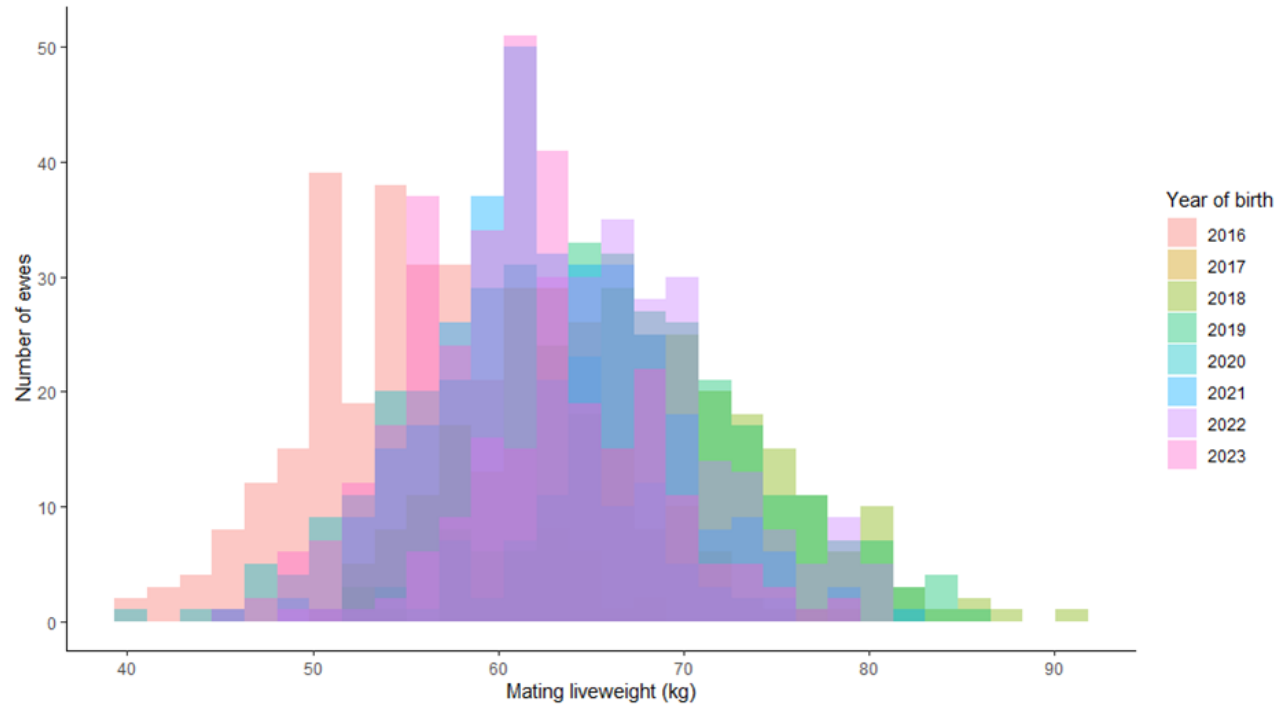
Scanning rate (fetuses per ewe joined)





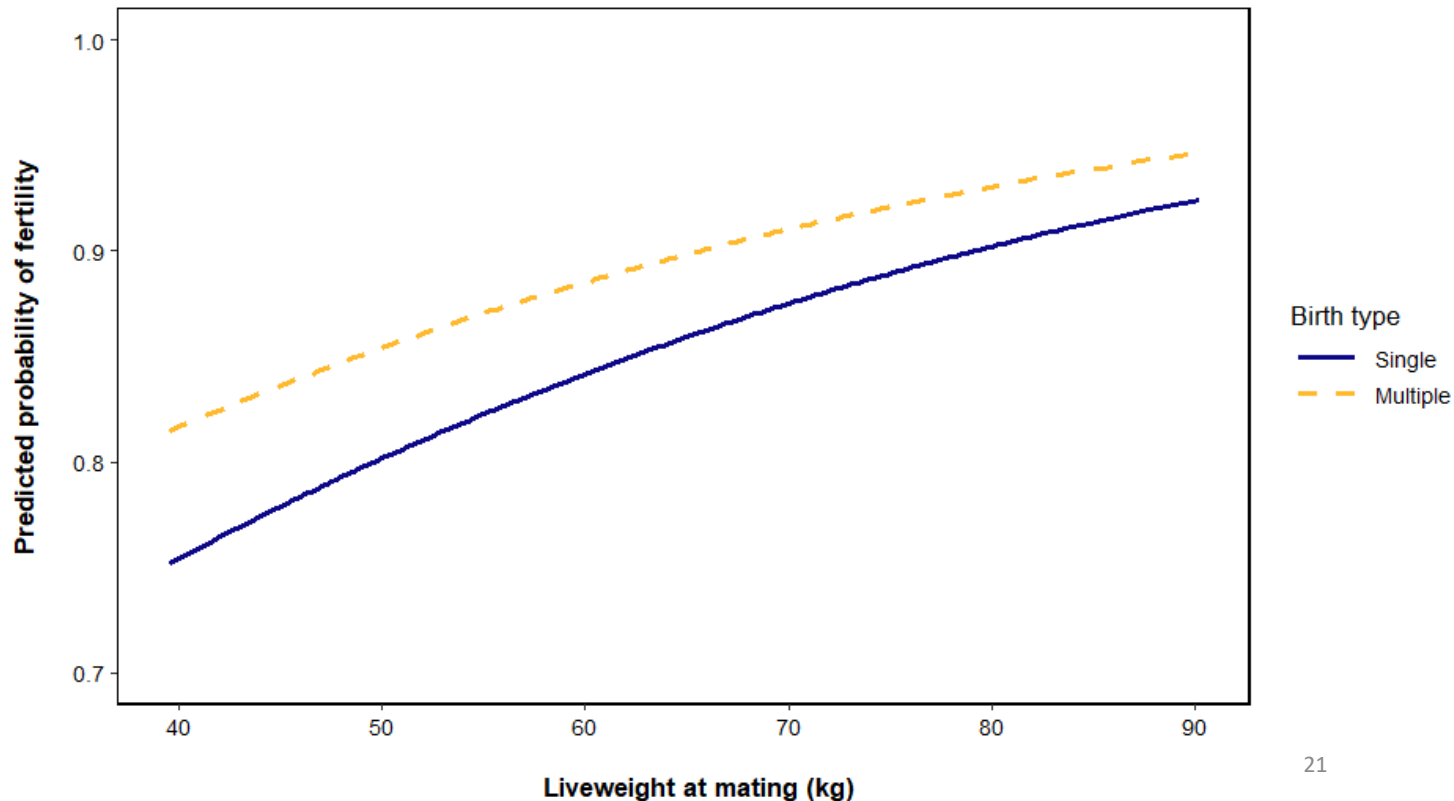
Cowra maiden Merino ewes

8 drops. Merino pre-mating liveweight



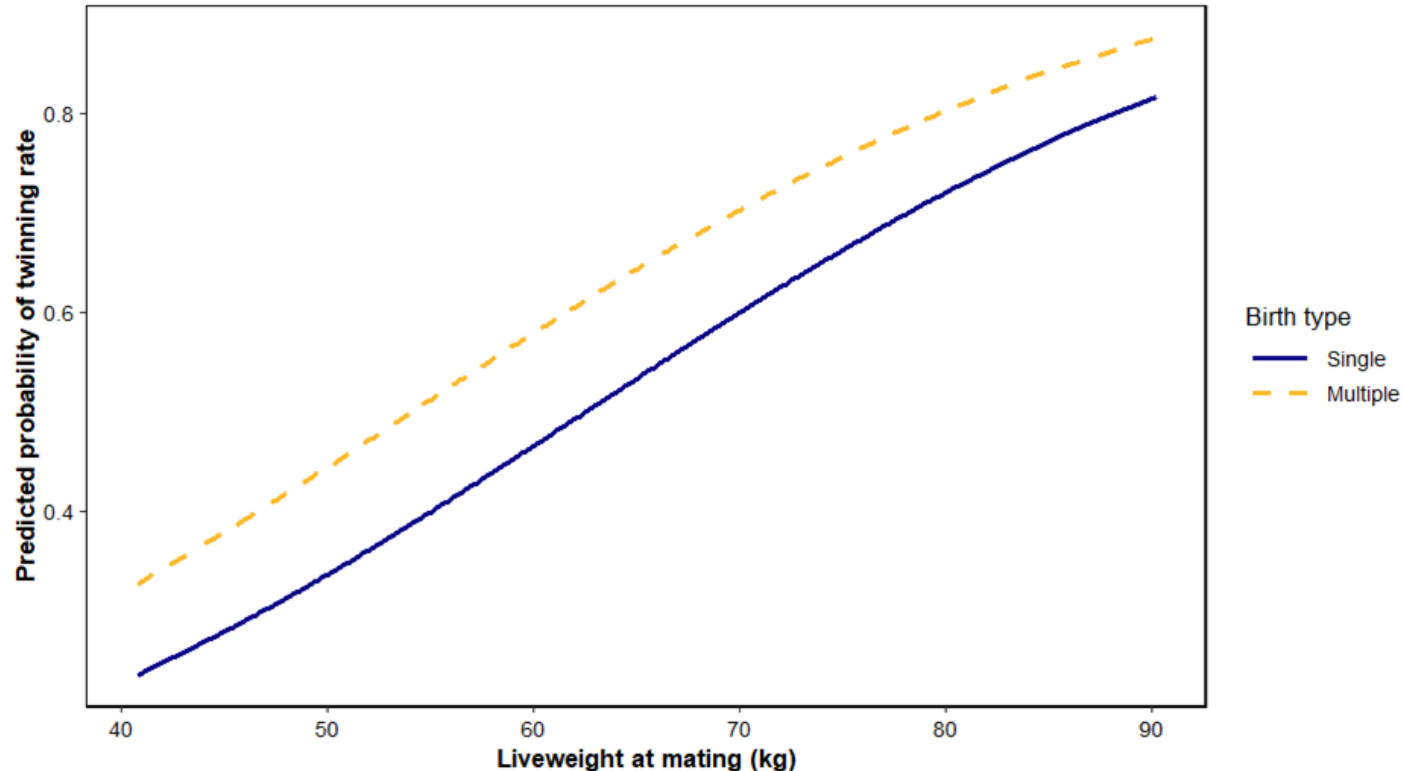
Fertility, liveweight & birth type

- LWT +3% odds
- BT +45% odds



Twinning rate (twin ewes / pregnant ewe)

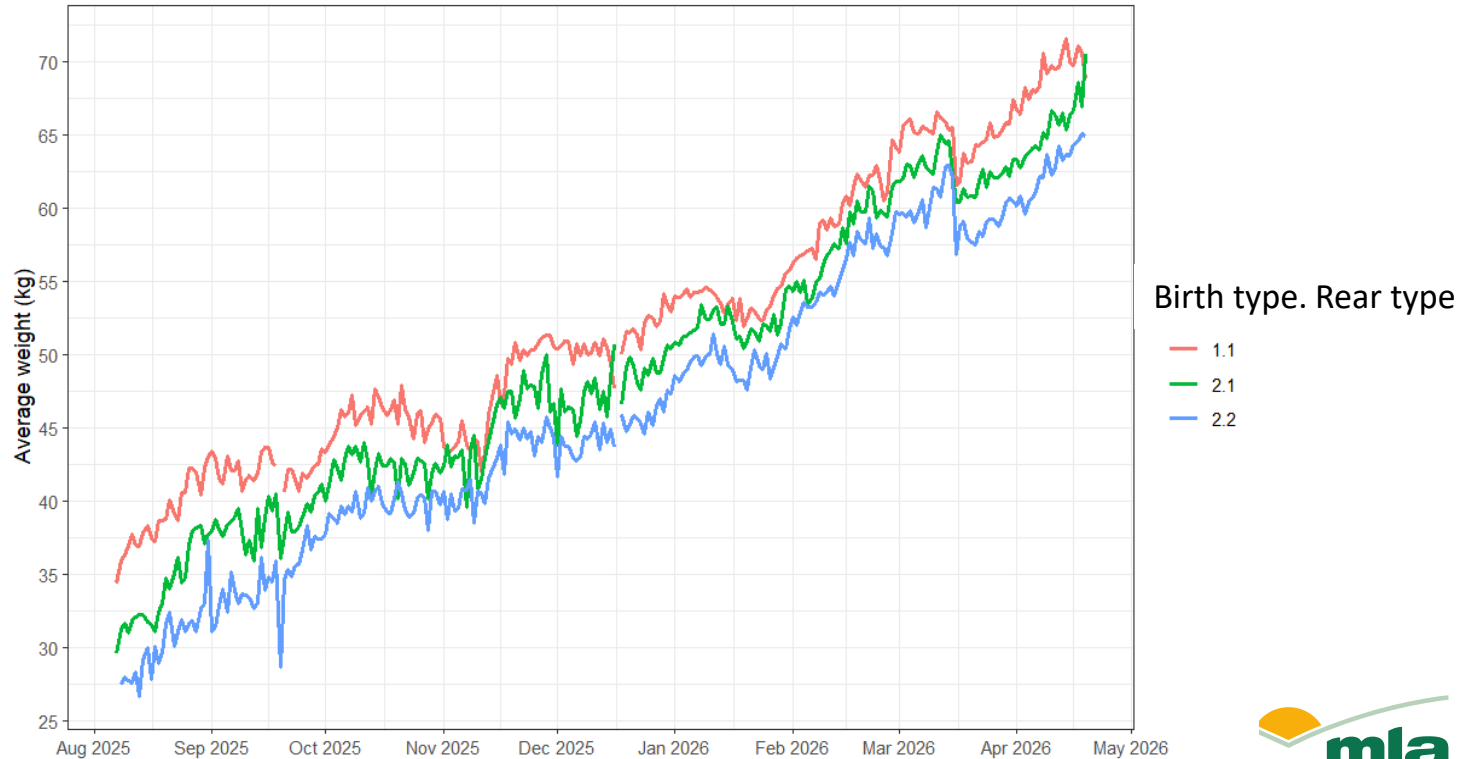
- LWT + 6% odds
- BT +58% odds



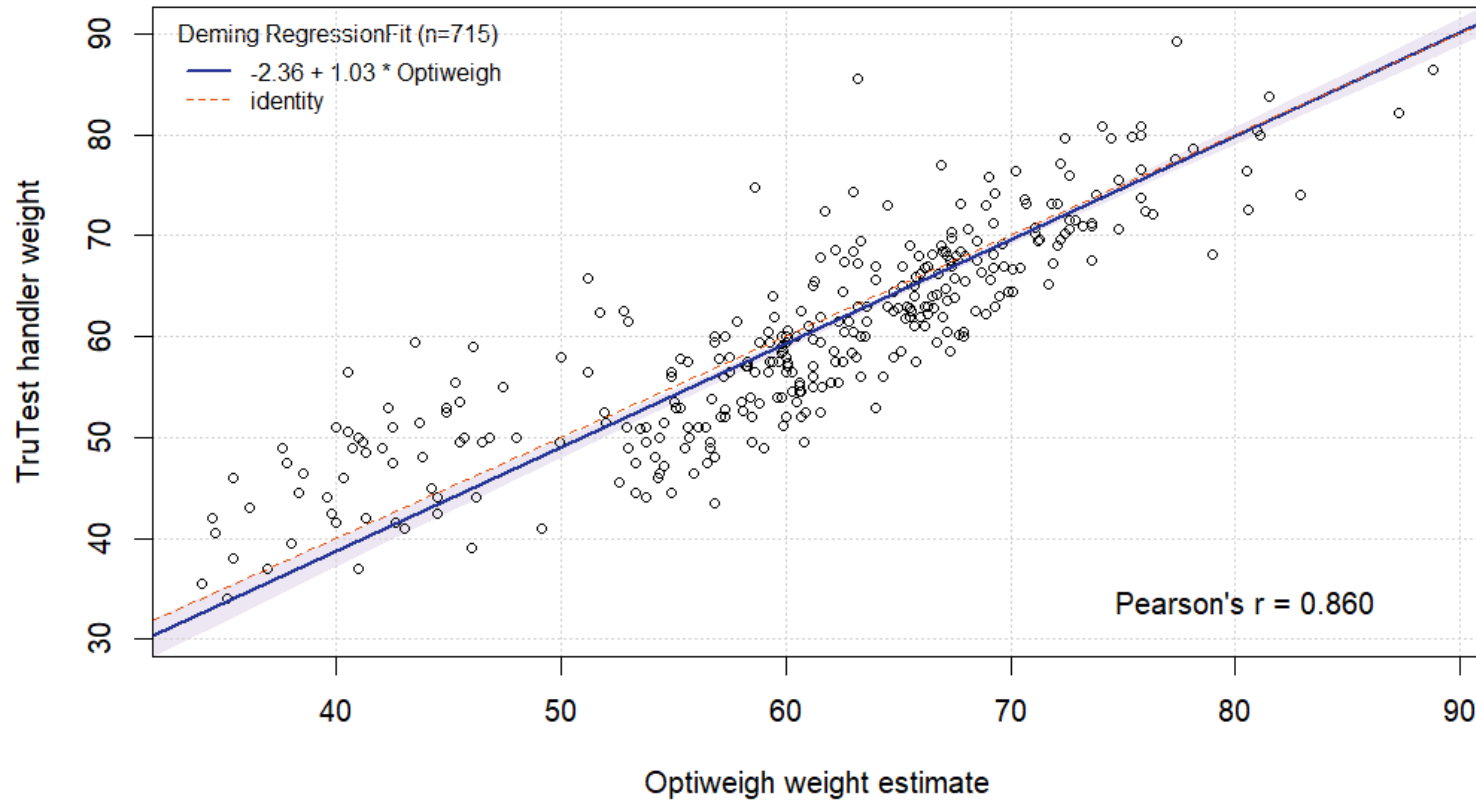
Optiweigh system



Wethers – weaning to slaughter & birth type



Compare Optiweigh (19 Apr) with TruTest (20 Apr) Deming Regression Comparison



If you need to lift pregnancy scanning rates

- Testes inspection (4Ts)
- Flush rams 6 wks pre mating (lupins)
- Repro ASBVs (+ Fec genes)
- Teasers (spring, summer, ewe lambs)
- Target LWT (young ewes)
- Target BCS (adult ewes)
- Flushing ewes 3 wks pre mating (lupins; lucerne)
- Hormones 6 wks prior (Regulin)
- Vaccine (Ovistim)
- Disease (Campy; Brucellosis; Phytoestrogens)



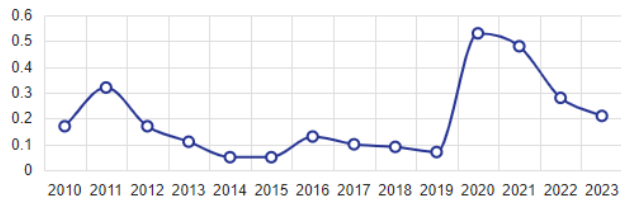
Australian Sheep Breeding Values

Genetic trait ASBV	Trait	Notes
CON	Conception rate	Emphasise
LS	Litter size	Monitor carefully
ERA	Ewe rearing ability	Emphasise
WR	Weaning rate	Was NLW, nuance your traits
BWT	Birthweight	Not –ve, if high use (+ve LE_dir)
MBS	Maternal Behaviour Score	Heritable
LE	Lambing ease	V. useful, not enough data
GL	Gestation length	Will be useful with LE & +ve BWT

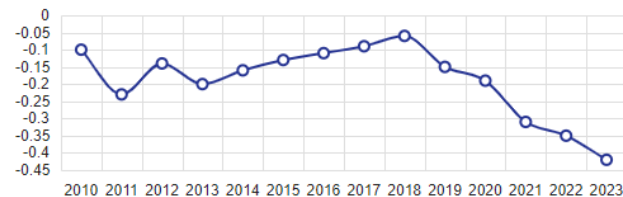
ASBV's

Indexes

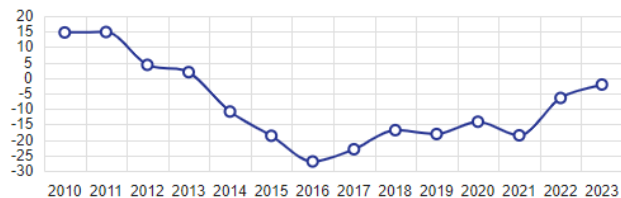
Yearling Fat Depth (mm)



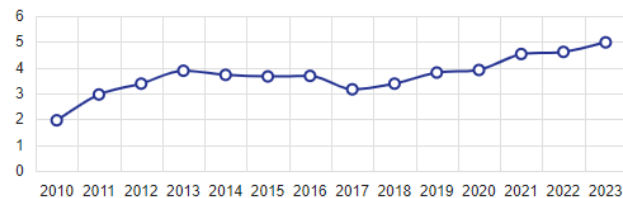
Early Breech Wrinkle (score)



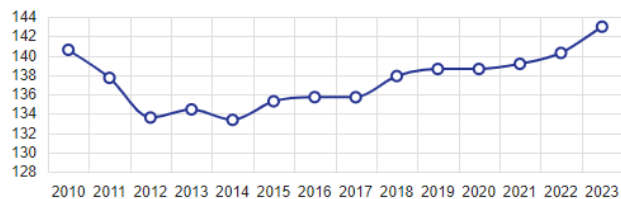
Yearling Worm Egg Count (%)



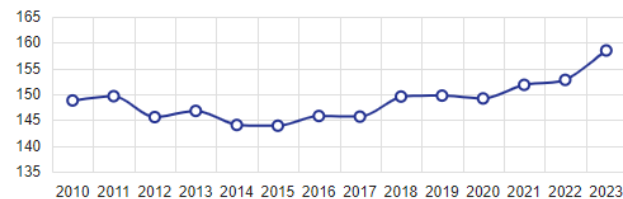
Weaning Weight (kg)



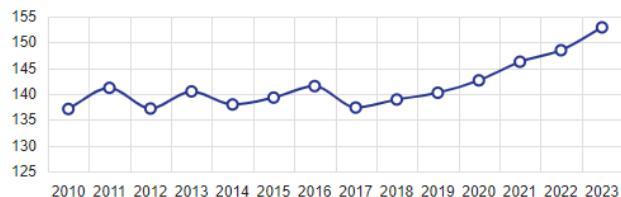
Fibre Production Index (score)



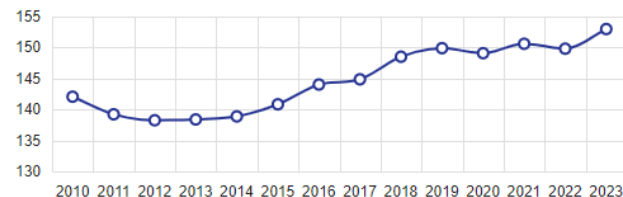
Merino Production Index (score)



Dual Purpose Index (score)



Fibre Production Plus Index (score)



Take home messages

- Variation in pregnancy rates is enormous, suggestive of low nutrition
- You can't class your way to higher reproduction without first addressing the constraints (environment, management, genetics)
- Bodyweight lifts reproduction rates in maidens. Twins perform better at the same weight, as maidens. Use NLIS EID to record both & set / obtain target outcomes.
- Optiweigh looks the goods for mob-based management

MLA and relevant tools and resources

- Lifetime Ewe Management
- Bred Well Fed Well
- Fit to Join
- Productivity and Profitability Webinar Series

Closing slide

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