Flocks and Foliage

Can Tree planning improve productivity, profit, health and welfare on livestock farms?

Emily Gascoigne MA VetMB MRCVS

Fiona Lovatt BVSc PhD DSHP DipECSRHM MRCVS

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Key drivers of Sheep Flock Profitability

- Stocktake$_{(AHDB)}$ analyses production figures for 66 flocks
- Fixed costs double between Top 1/3 and Bottom 1/3 flocks
- 6% lambs lost in top flocks from scanning to rearing, 10% in bottom third though up to 30% losses not uncommon
- Higher value lambs in top 1/3 of flocks
- Production limiting diseases delay finishing & increase variable costs

✓**Aim 1:** Spread the fixed costs across as many lambs as possible

✓**Aim 2:** Get the lambs off farm at the most profitable point in production, target market value, minimising incurred costs from production disease.

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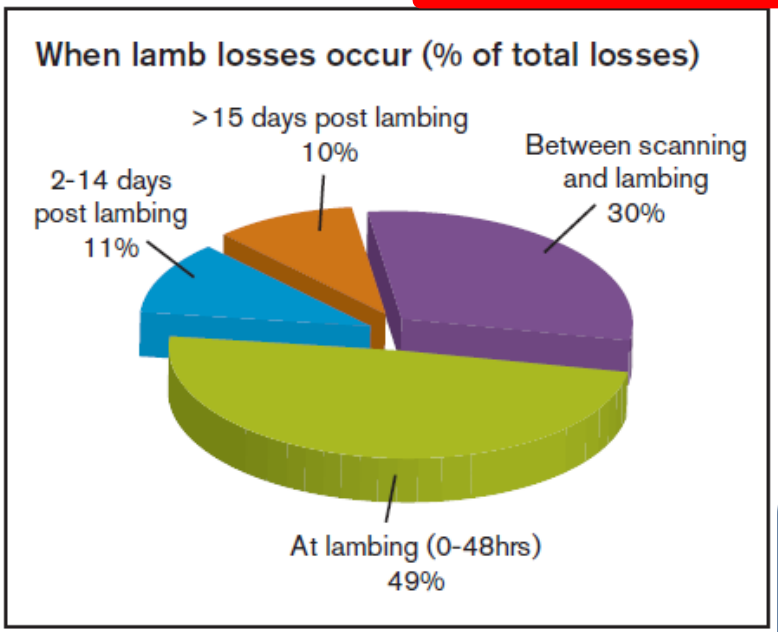
Reduce lamb mortality (& achieve aim 1)



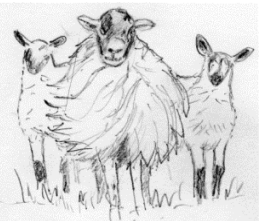



Source: HCC lambing project 2010/11

- Key phase of lamb loss 0-48 hours
- 60% of all losses within 14 days
- Hypothermia, hypoglycaemia, mismothering, exposure, infectious disease
- Small lambs especially vulnerable

***Hypothesis 1* - Good tree planting will provide -**

- Reduced exposure
- Shelter for lambing ewes
- Shelter for neonatal lambs



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Reduce lamb mortality by reducing exposure

- Even at 25^0C ambient temp & in still air, lambs still use extra energy to keep warm
  (Hecker et al. 1983)
- Many factors affect survival in poor weather
  (Mellor and Stafford, 2004)
- Ewes will seek out shelter and isolation
  (Wassmuth et al., 2000)
- Shelter at lambing need to be familiar, abundant & dispersed for ewes seeking isolation
- Provision of shelter reduced lamb mortality by 50% (Bird et al., 1984) AUS
- Wind shelter decreased twin mortality by 14-37% & overall mortality by 10% (Pollard et al., 2006) NZ

Post mortem of a neonatal lamb shows brown fat deposits around the kidneys

Reduce mastitis by reducing exposure

- Risk factors include teat end damage, thin ewes and exposure to the udder especially post shearing

- Cost of mastitis
  - Extra replacement plus disposal £120 plus additional poor performance in lambs
  - Welfare cost

- Mastitis is a culling offence
  - Premature culling of ewes, increasing replacement costs (10% cost of production, HCC Costs of Production 2013/2014)

***Hypothesis 2* - Good tree planting will provide -**

- Reduced exposure
- Shelter for lactating ewes
- Reduced risk of mastitis

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Ensure efficient production (& achieve aim 2)




Key drivers of efficient production

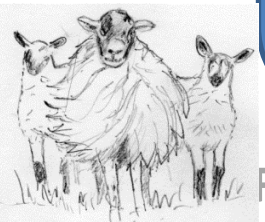
Ewe health and body condition score (therefore milk yield and DLWG 300g/day)

Post-weaning performance of 200g/day

Low levels of "endemic disease reducing growth rates"

Some diseases reducing efficient production

- Liver fluke in ewes: reducing condition, reducing milk yield
- Liver fluke in lambs: acute deaths, drops in DLWG, liver rejections
- Lameness in ewes: reducing condition, increased risk of mastitis, reducing milk yield
- Lameness in lambs: direct reduction in DLWG



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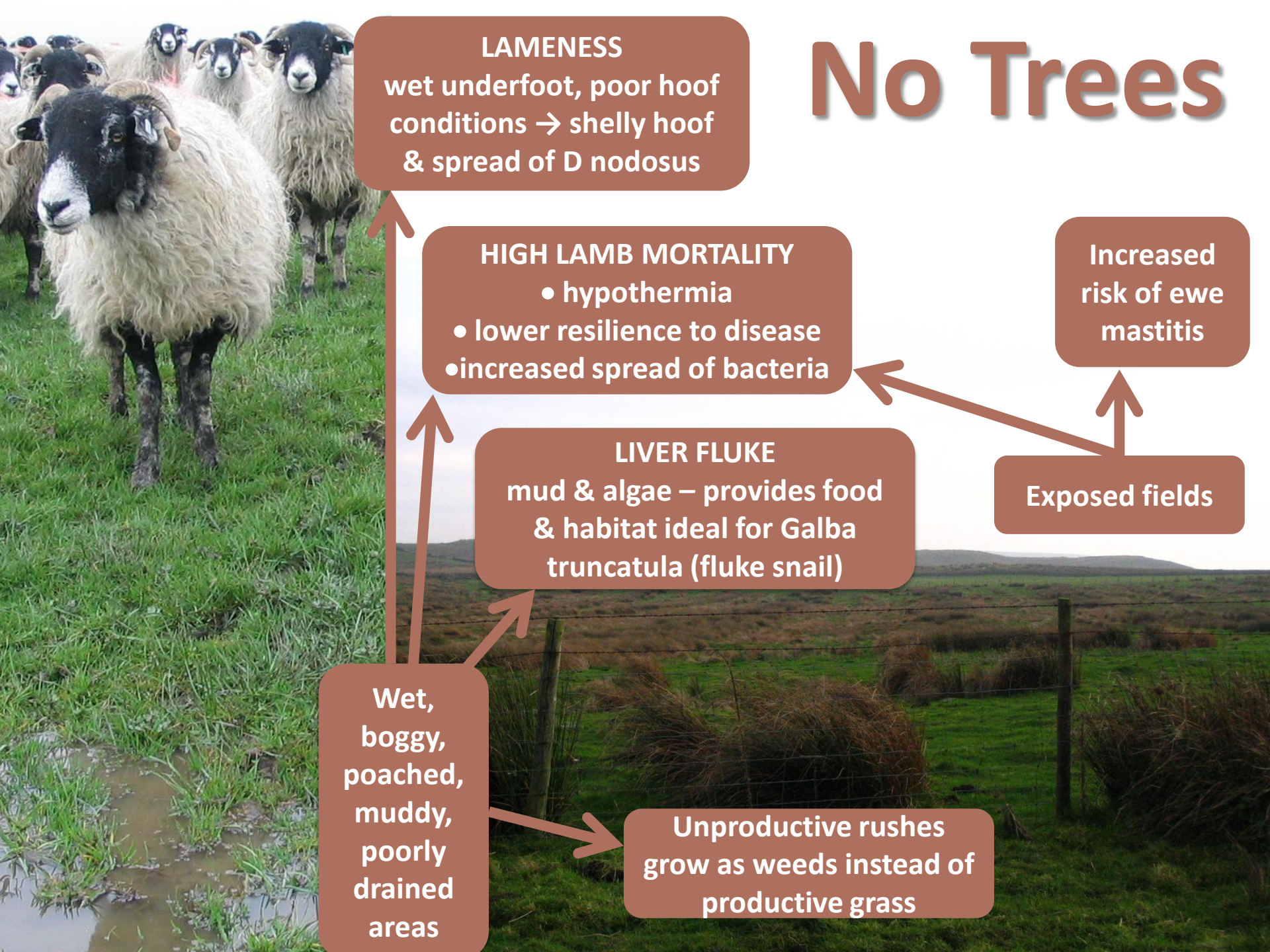
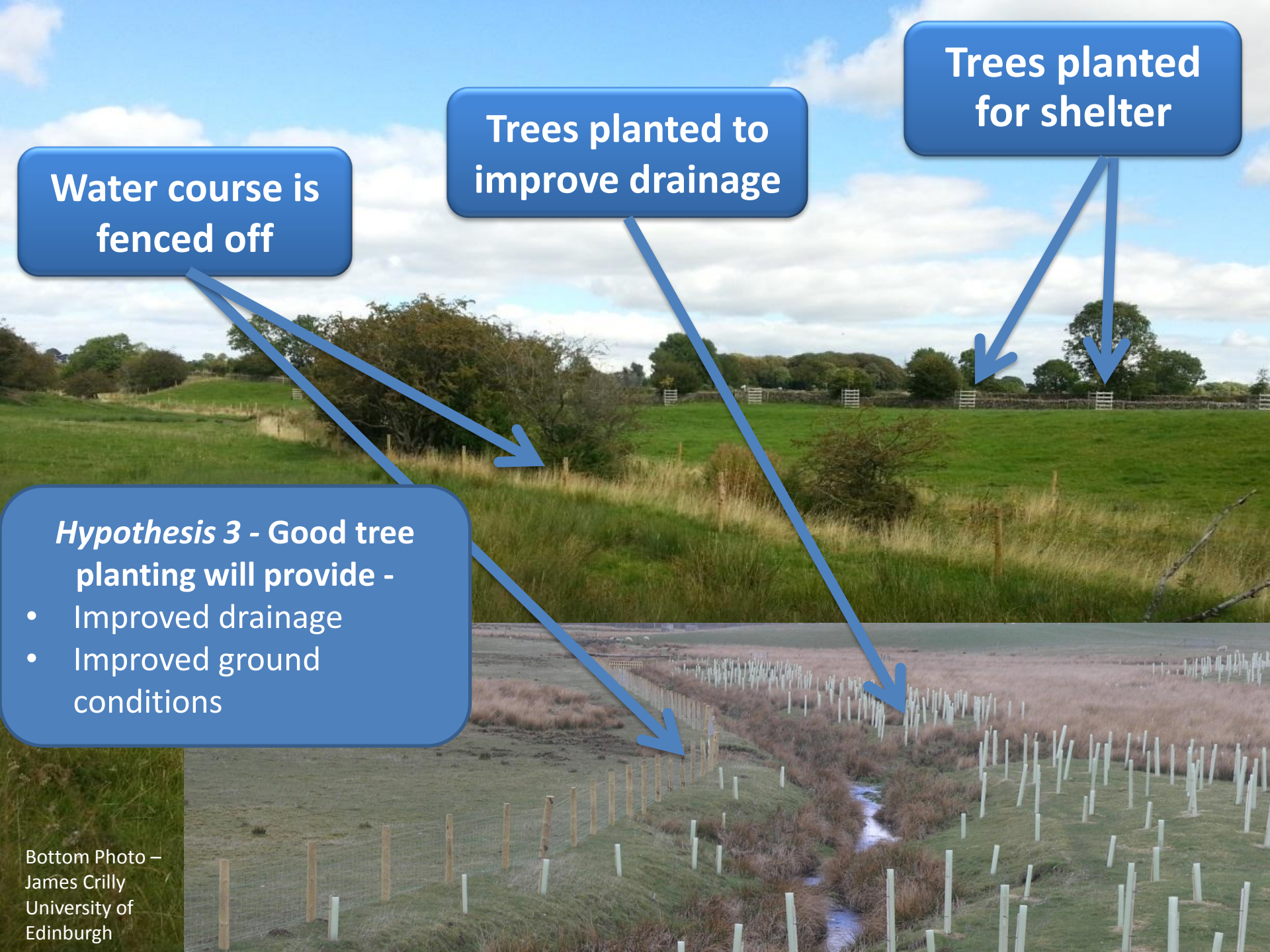

No Trees
LAMENESS
wet underfoot, poor hoof conditions → shelly hoof & spread of D nodosus
HIGH LAMB MORTALITY
• hypothermia
• lower resilience to disease
•increased spread of bacteria
Increased risk of ewe mastitis
LIVER FLUKE
mud & algae – provides food & habitat ideal for Galba truncatula (fluke snail)
Exposed fields
Wet, boggy, poached, muddy, poorly drained areas
Unproductive rushes grow as weeds instead of productive grass



Bottom Photo – James Crilly University of Edinburgh

Final considerations

- The key drivers of flock profitability should inform strategy on farm- what is the challenge for your unit?
- Flock health planning and sustainable production is HOLISTIC and CYCLICAL
- Be aware of relatively high stocking around foliage
- Increased tree planting should be part of a broader strategy

References

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