Managing for Better Land Condition and Production

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Topics covered….

- What is the cost of poor land condition?
- Measuring land condition
- Strategies for improving land condition, carrying capacity and profitability
- Choosing a grazing system that suits your management style
- Increasing live weight gains of your stock
- Optimising the balance of trees and grass

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Grazing land condition

The capacity of grazing land to respond to rain and produce useful forage……

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How do we determine land condition and what information should we collect?

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Check land condition for potential areas of improvement……

- Use the Stocktake approach, Stocktake App is available
- Check….
  - Pasture condition
  - Soil condition
  - Tree density
  - …..to give an overall rating of A, B, C or D, where A is excellent, B is fair, C is poor and D is very poor

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The cost of poor land condition….

- If land is in B or C condition, long-term carrying capacities can be improved by 30% to 100% by improving land condition to A!

Financial analysis – 40,000ha property in 'A' condition versus mainly 'C' condition

Assumptions:

- Mixed enterprise
- Stocked at safe carrying capacity (on average, cattle consume 15–20% of annual pasture growth)
- 'C' condition grows only 45% of 'A' condition pasture

Analysis:

		'A' Condition	'C' Condition
Carrying capacity (DSE)	Cattle Sheep	8,160 5,440	3,691 2,460
Average weight 12 month weaners (kg)		243	243
Breeders wean rate (%)		70	70
Wool cuts/sheep (kg)		5.15	5.15
Profit before tax ($/year)		**$377,339**	**$170,691**

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Assessing land condition

3 components:

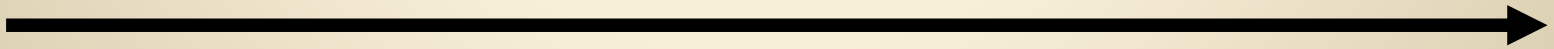
- Soil condition
- Pasture condition
- Woodland condition

Affect your ability to grow grass

ABCD land condition scoring

Grazing land condition can be split into 4 broad categories:

A	B	C	D
Excellent	Fair	Poor	Stuffed



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3P Grasses

- **Perennial**

  Longevity and resilience to grazing and climatic pressures

- **Palatable**

  Livestock readily eat the plant

- **Productive**

  Quantity of quality feed

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3P Grasses are the key….

- Mulga Mitchell
- Mulga oats
- Kangaroo grass
- Silky umbrella grass
- Mitchell grasses
- Qld bluegrass

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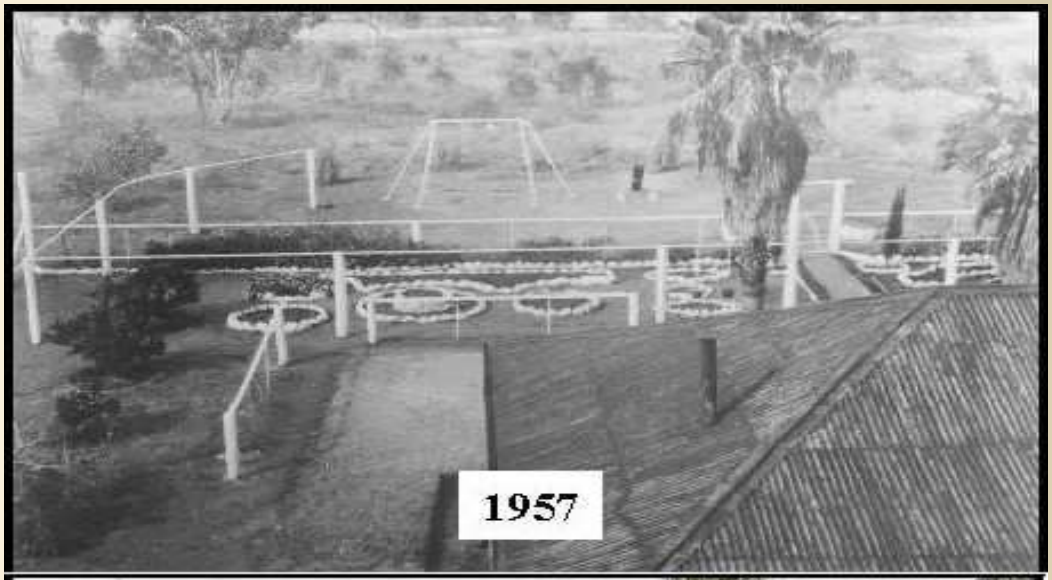
Keeping records - start with a photo…….



Keeping records

Aspect	Assessment
Pasture condition	2
Soil condition	1
Tree basal area	$3m^2$ / ha
Ground cover	60%
Dry matter yield	2000kg/ha
Unpalatable	10%

Photograph + supporting notes = Quality monitoring record

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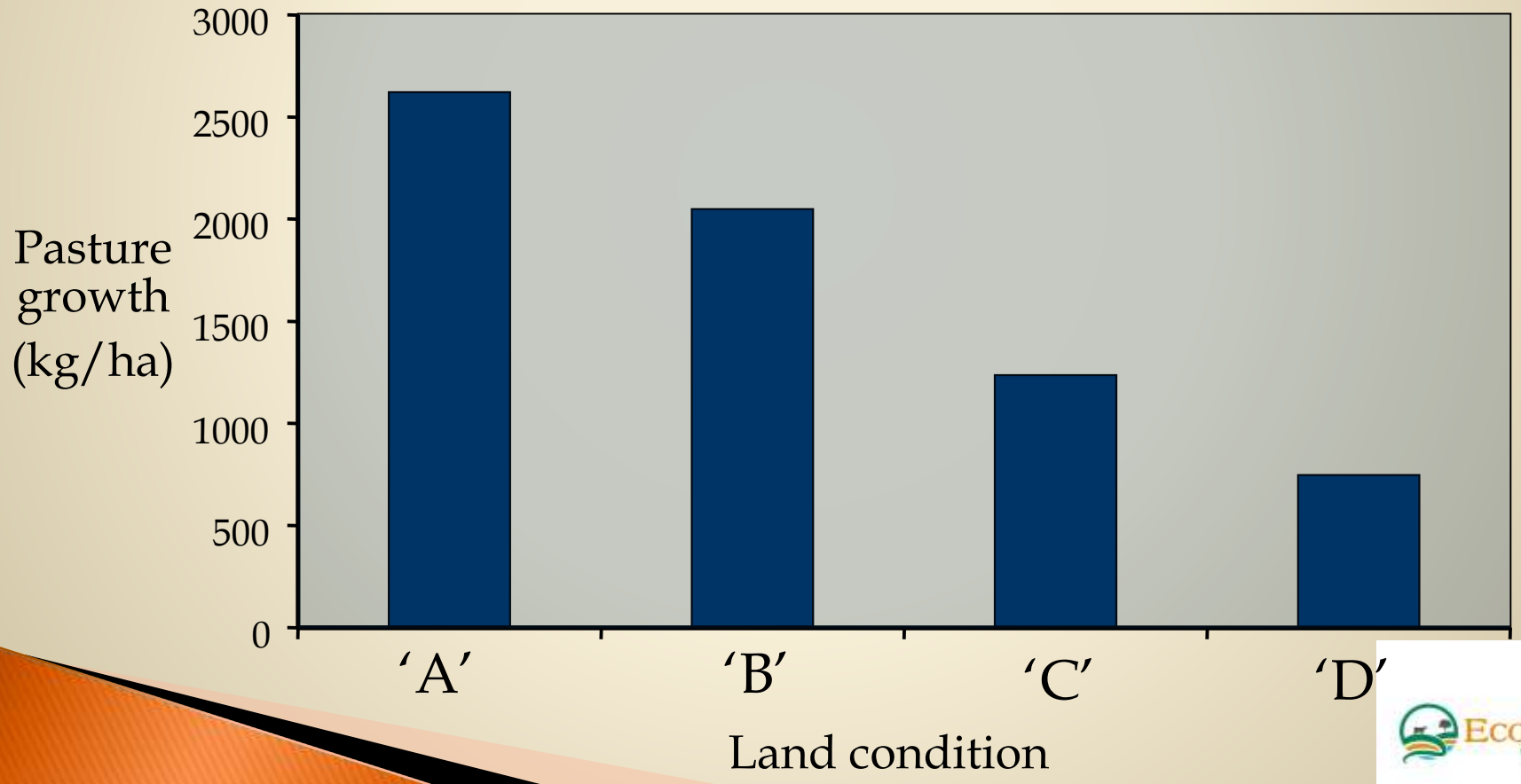
Decline of perennial grasses disrupts energy capture in pasture growth



Poplar box flats…..

- Grows 2,310 kg/ha of pasture when in A condition
- Only grows 1,040 kg/ha when in C condition

- So, a 1,000 ha paddock's Long Term Carrying Capacity is:
  - 86 Adult Equivalents (AE) if in C condition, and
  - 190 AE's when in A condition
  - Therefore, an **additional 104 AE's** can be run in the paddock if it is returned to A condition

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Is it worth improving land condition?

- If an AE returns an annual gross margin of $160
- An extra 104 AE's will give an extra $16,640 annual gross margin from the paddock!
- If it costs $45,000 for additional fencing and waters, the payback period is 3 years once in A land condition

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Land Condition - Long Term Carrying Capacities

- 10 or more years
- Used for strategic planning
- Economic analyses
- Comparing management options

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What options for improving land condition?

If in C condition

- Few 3P's, annuals, weeds & wiregrasses

What options for improving land condition?

1. Forage budgets
2. Always keep some grass stubble for ground cover
3. Spell country after rain until seed set
4. Rotational grazing systems can help with spelling
5. Fire can be a useful tool
6. Some trees improve grass growth

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1. Forage budgets….

- **Help to stock to carrying capacity**
- Used for 6 to 8 months or a few days or weeks
- How long will the feed I have in this paddock last the number of cattle in the paddock?

- Used at the end of the growing season, can offload stock early if insufficient feed, or buy more or agist
- Also used in rotational grazing systems to work out how long to leave cattle in a paddock

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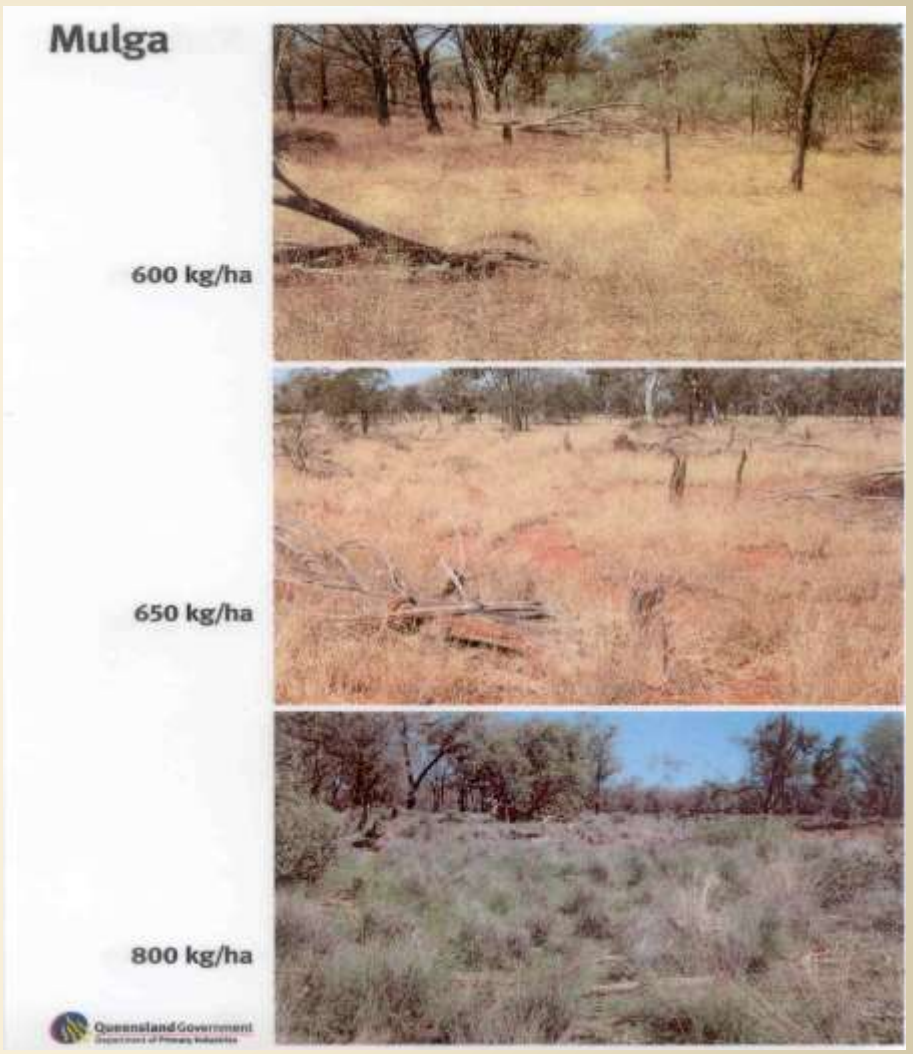
Forage budgets

- Assess total yield
- Unpalatables
- Trampling
- Leave ground cover

- Available for grazing

Assessing yield

Use the relevant photostandard sheet to estimate standing yield…



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…or cut and weigh the pasture…

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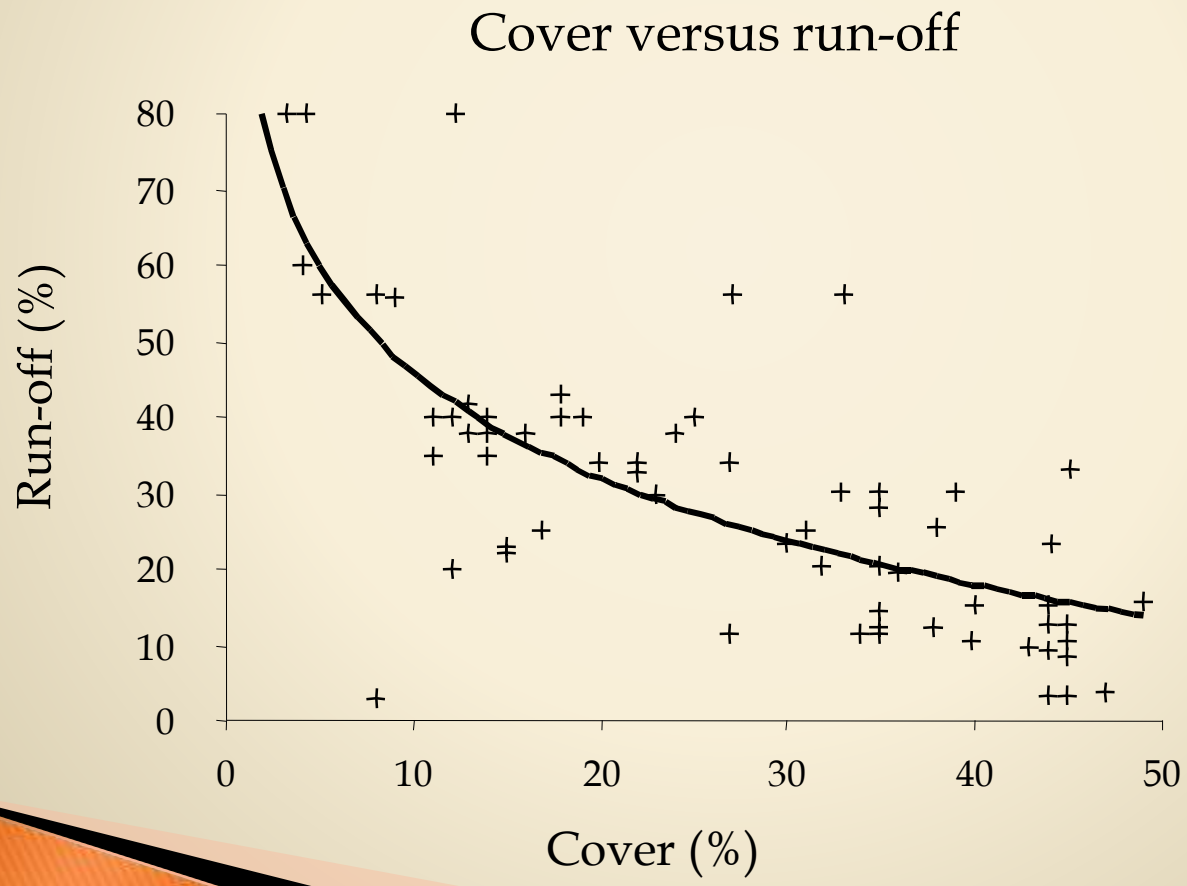
2. Keep grass stubble on the ground

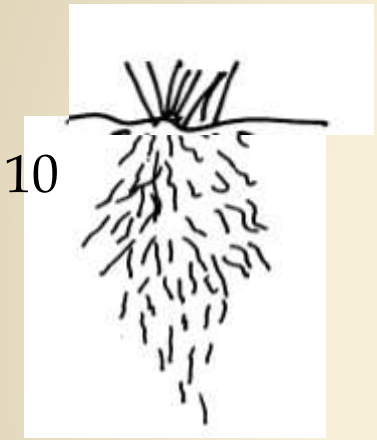
- Ground cover is important…



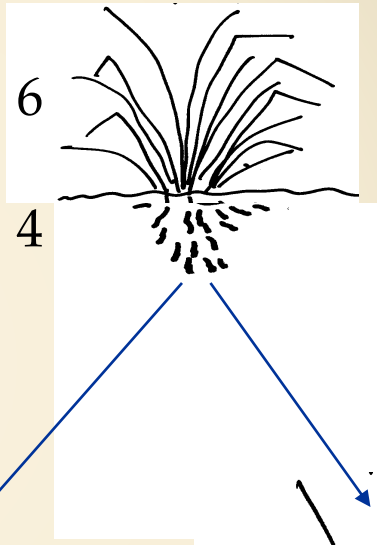
Try to maintain > 30-40% cover

3. Spelling is important….

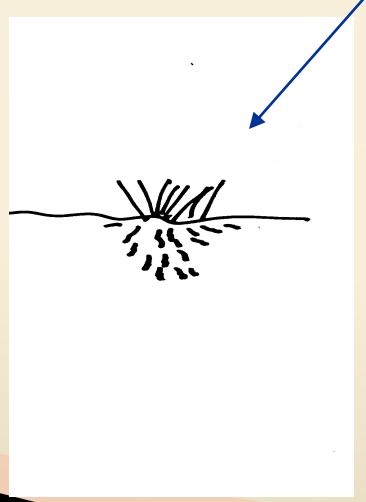
End of dry season



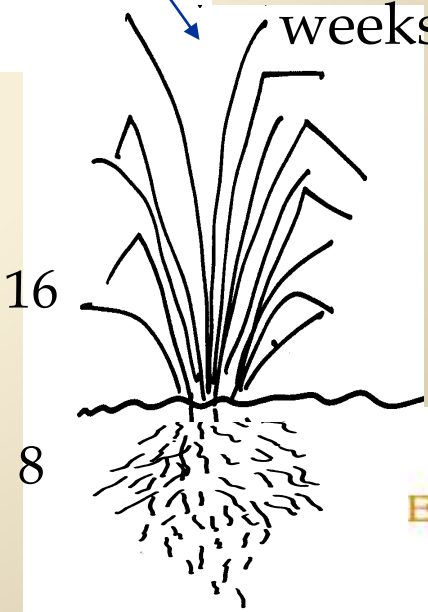
Start of wet season



If grazed early



If spelled for 6 weeks



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Spelling most important…….

- In phases 1 and 2 of growth, and
- After effective rain for growth

Spelling country from grazing….

- Spell after rain until seed set
  - Fencing to control total grazing pressure is important in this part of the world – roos
  - Rotational grazing systems can help

4. Rotational grazing systems…

- Can assist with spelling
- Spell larger areas at a time while one or a few paddocks are being grazed
- More complex multi paddock systems?
- 4 to 6 paddocks in a rotation can be a useful system
- Choose a system that suits your management style
- Rotational grazing forage budgets can help – aim to take just 10% of forage with each grazing

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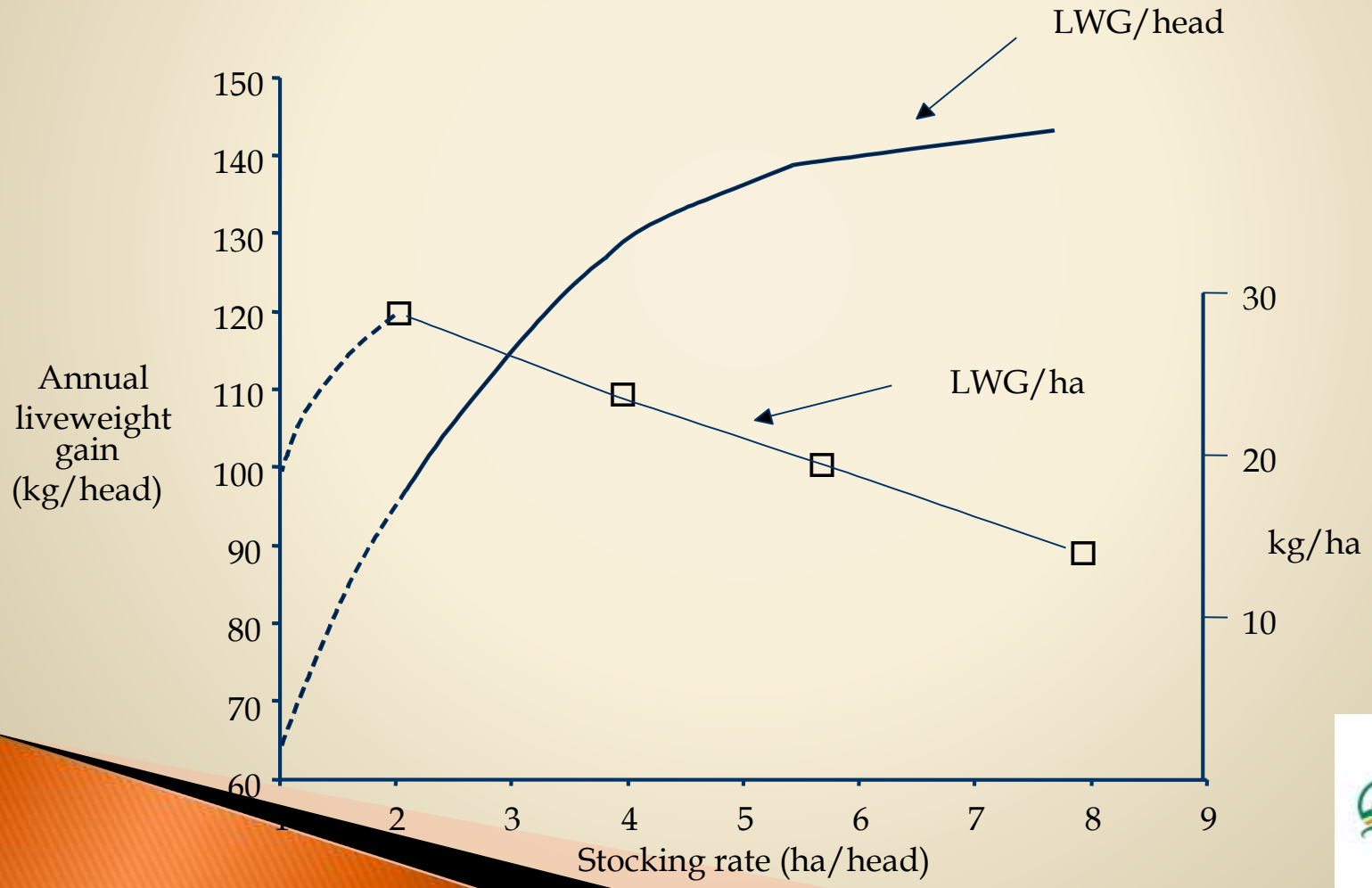
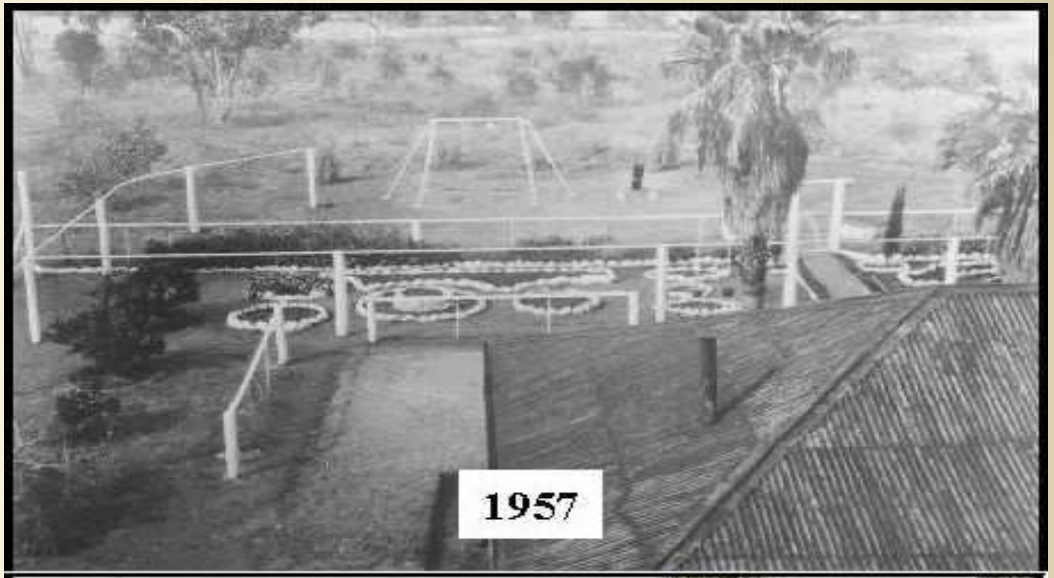
The impact of Stocking Rate (pasture utilisation) on animal production

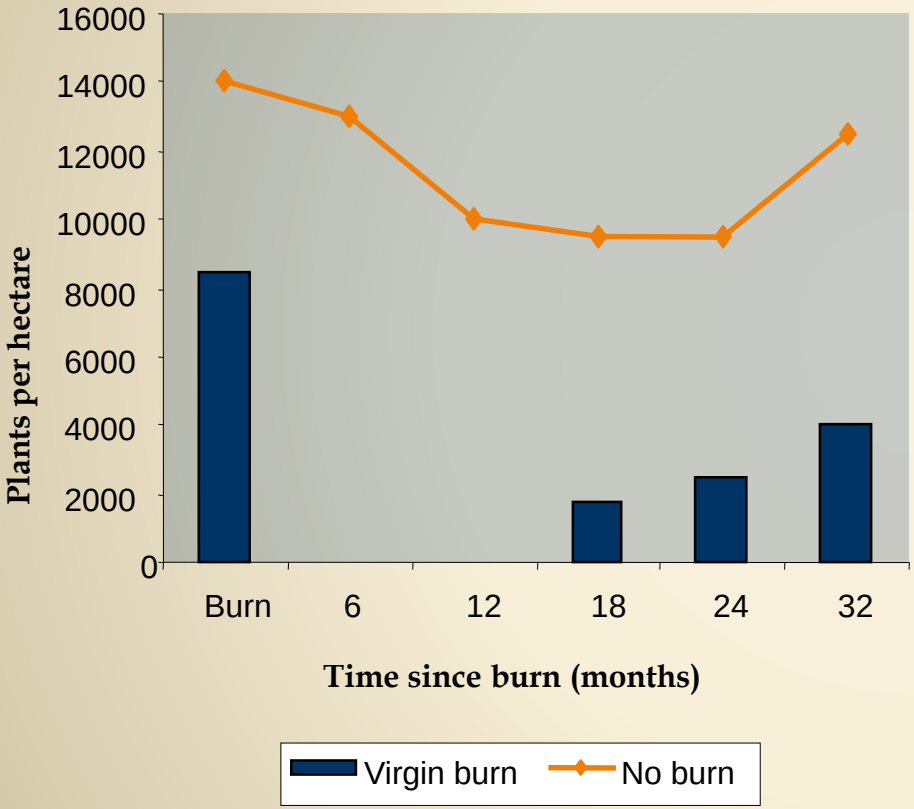


6. Fire can be a useful tool to reduce woodland thickening…….

- Mulga susceptible to fire
- Mechanical thinning under the fodder harvesting code



Fire suppresses growth of green turkey bush woody plants



- Significantly reduced density and cover for up to three years after fire

Recommendations

- Fuel load at least 1,000kg DM/ha
- Allow burnt area to regenerate
- Burn late winter to early spring
- Follow-up burn within four years

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Controlling balance of woody plants and pasture

1991

1992

1994

1997

Example: Green turkey bush

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Controlling balance of woody plants and pasture

1991

1992

1994

1997

Example: False sandalwood

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Sandalwood near Bollon…

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Opportunities to burn…..

- Occur seldom, sometimes as little as every 20 to 30 years
- Plan to use those opportunities
- Fire is the cheapest tool
- In combination with pulling, stick raking, reduces cost
- Use forage budgets to conserve fuel

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Are trees important to our grazing lands?

- Yes!
- To both production and biodiversity

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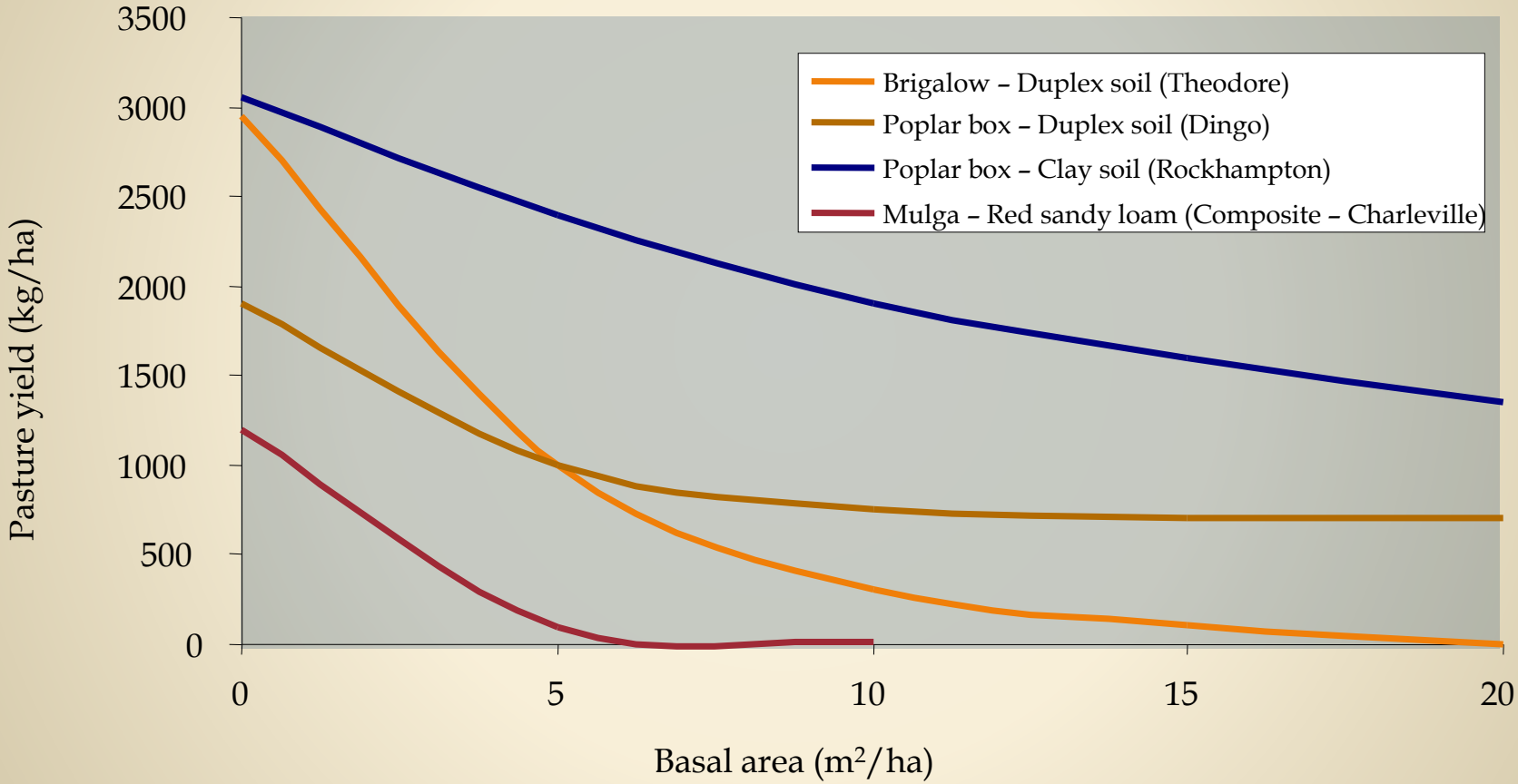
The impact of trees on pasture



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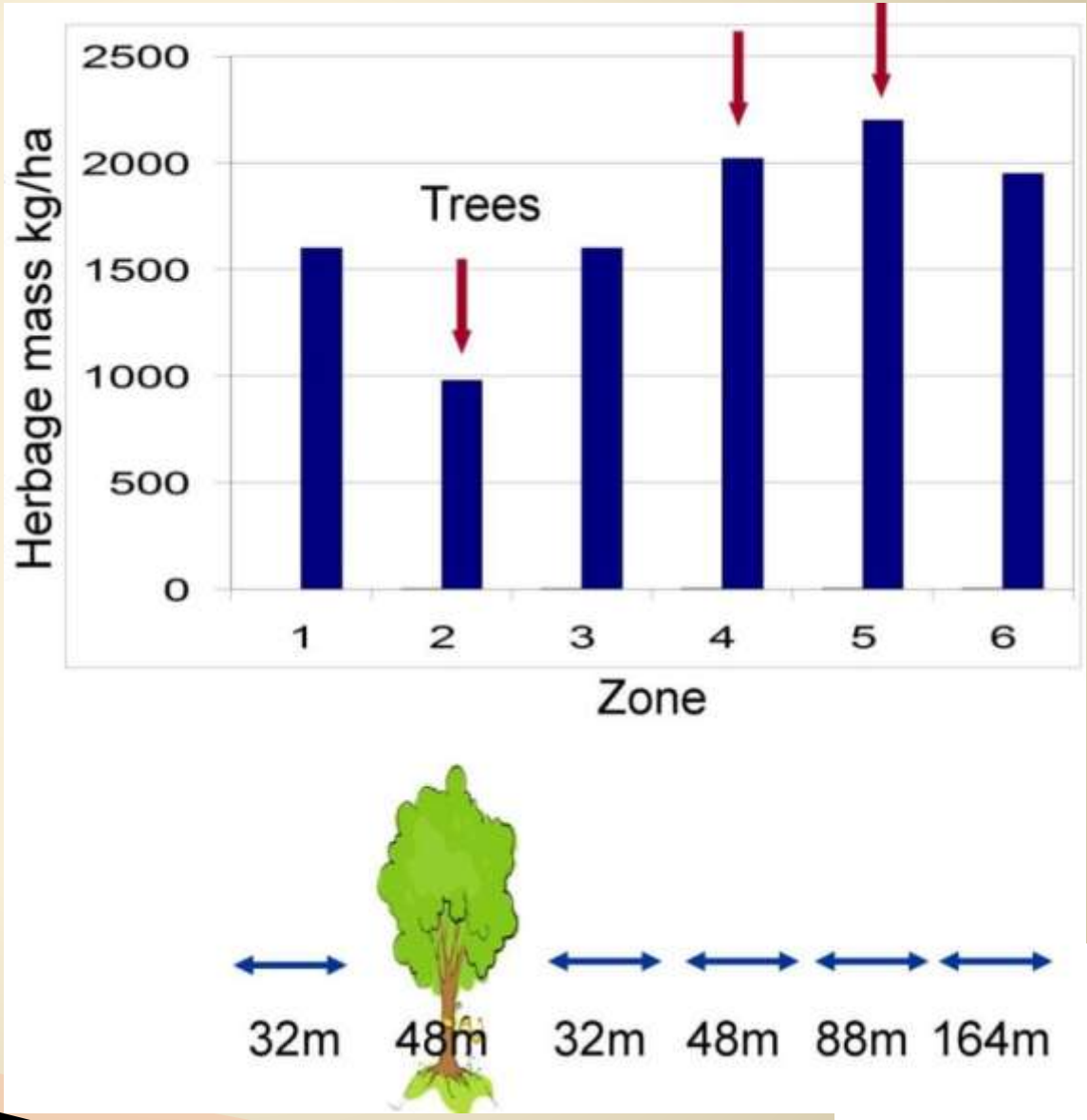
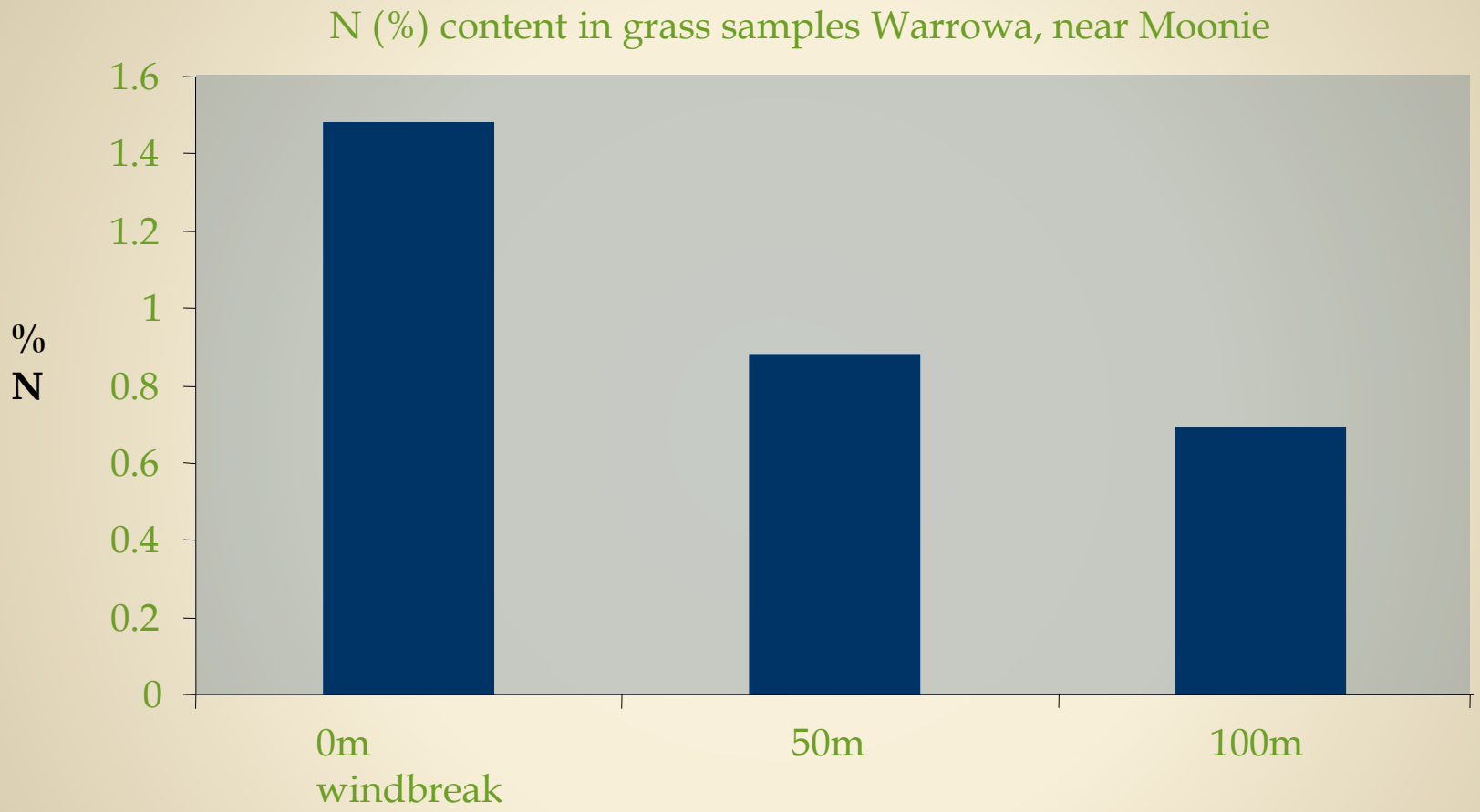
Trees generally compete with pastures for nutrients and moisture

Impact of tree strips on pasture



Effect of trees on pasture quality



- Protein levels beneath trees is much greater

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……and greater biodiversity!!

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Biodiversity and land condition

ABCD Land Condition Framework is good measure of Biodiversity Condition in rangelands

Managing for good land condition helps to manage for greater production and biodiversity

Therefore…A working and profitable grazing operation can be in good condition for both Production and Biodiversity



Summary

- Land condition is a measure of how well our grazing land ecosystems are functioning
- It's as simple as ABCD
- Use forage budgets, spelling and other management options to improve or maintain land in good condition

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Options for improving land condition?

- Use forage budgets to work out how long the feed will last current stock – match stocking rate to carrying capacity
- Always keep some grass stubble on the ground – reduces erosion and ensures grasses can grow after rain
- Spell after rain until seed set
  - Fencing to control total grazing pressure is important in this part of the world – roos
  - Rotational grazing systems can help
- Burn when there is an opportunity to reduce woody weeds
- Some trees in the landscape help grow more grass

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Management of grazing lands….

EDGE Grazing Land Management Workshop

Monitoring……..

Stocktake

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