



Turning Pasture into Profit

A look at Grazing Land Management



What we'll cover

- Land Condition
- Land Types
- Carrying capacity
- Forage budgeting

Land condition





Condition of grazing land

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

- A measure of how well the grazing land ecosystem is working
- Land condition has three components...

Soil condition

- Capacity of the soil to:
 - absorb and store rainfall
 - store and cycle nutrients
 - provide habitat for seed germination and plant growth
 - resist erosion



Pasture condition


- Capacity of the pasture to:
 - capture solar energy and grow palatable green leaf
 - use rainfall efficiently
 - conserve soil condition
 - cycle nutrients



Woodland condition

- Capacity of the woodland to:
 - grow pasture
 - cycle nutrients
 - regulate ground-water





Land condition can be classified into four broad categories

The 'ABCD' framework

'A' condition

Looking across
the pasture



Looking into
the pasture







'B' condition

Looking across
the pasture



Looking into
the pasture











'C' condition

Looking across
the pasture



Looking into
the pasture









'D' condition



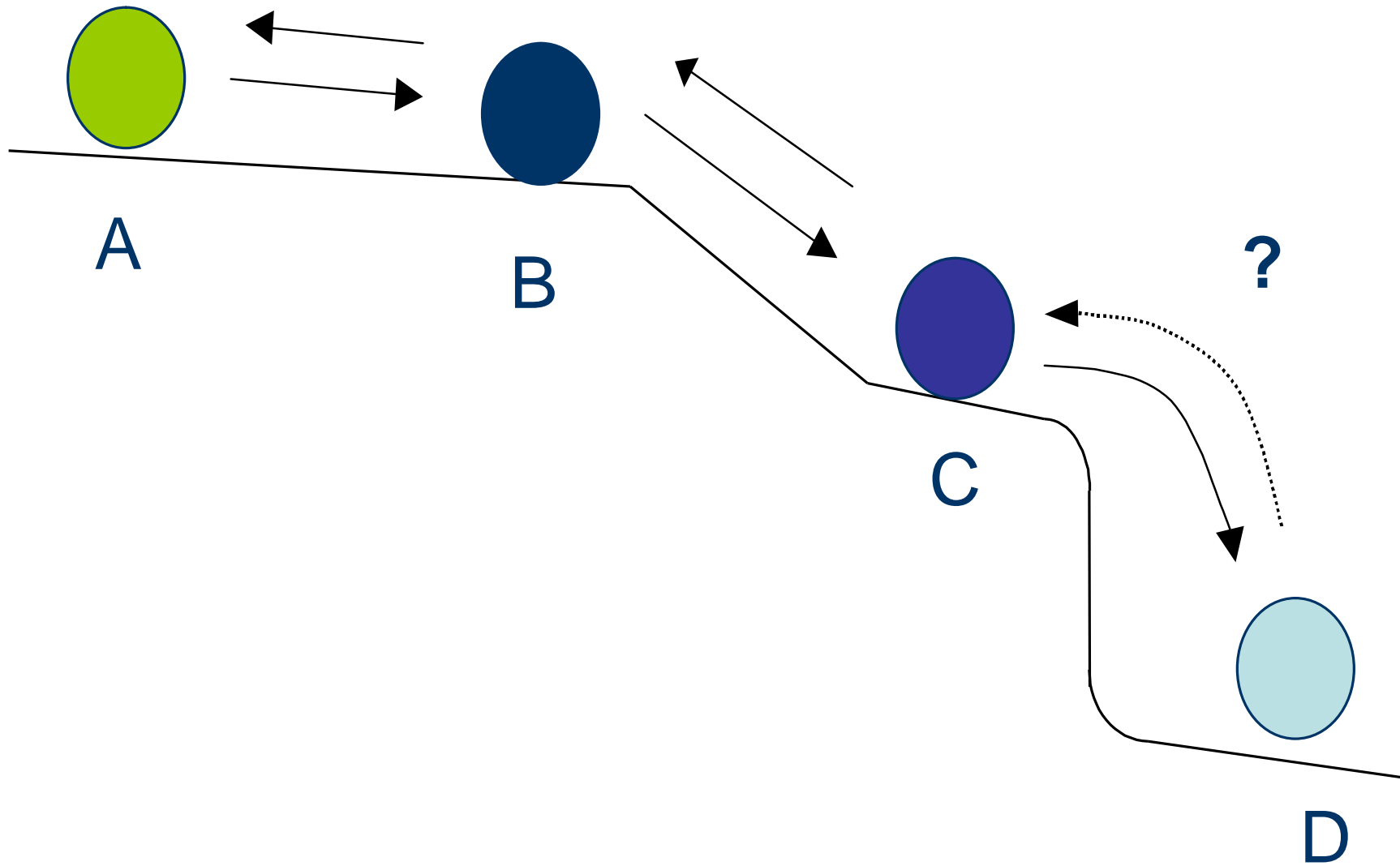






Pasture stability and resilience

- Are changes in land condition easily reversible?

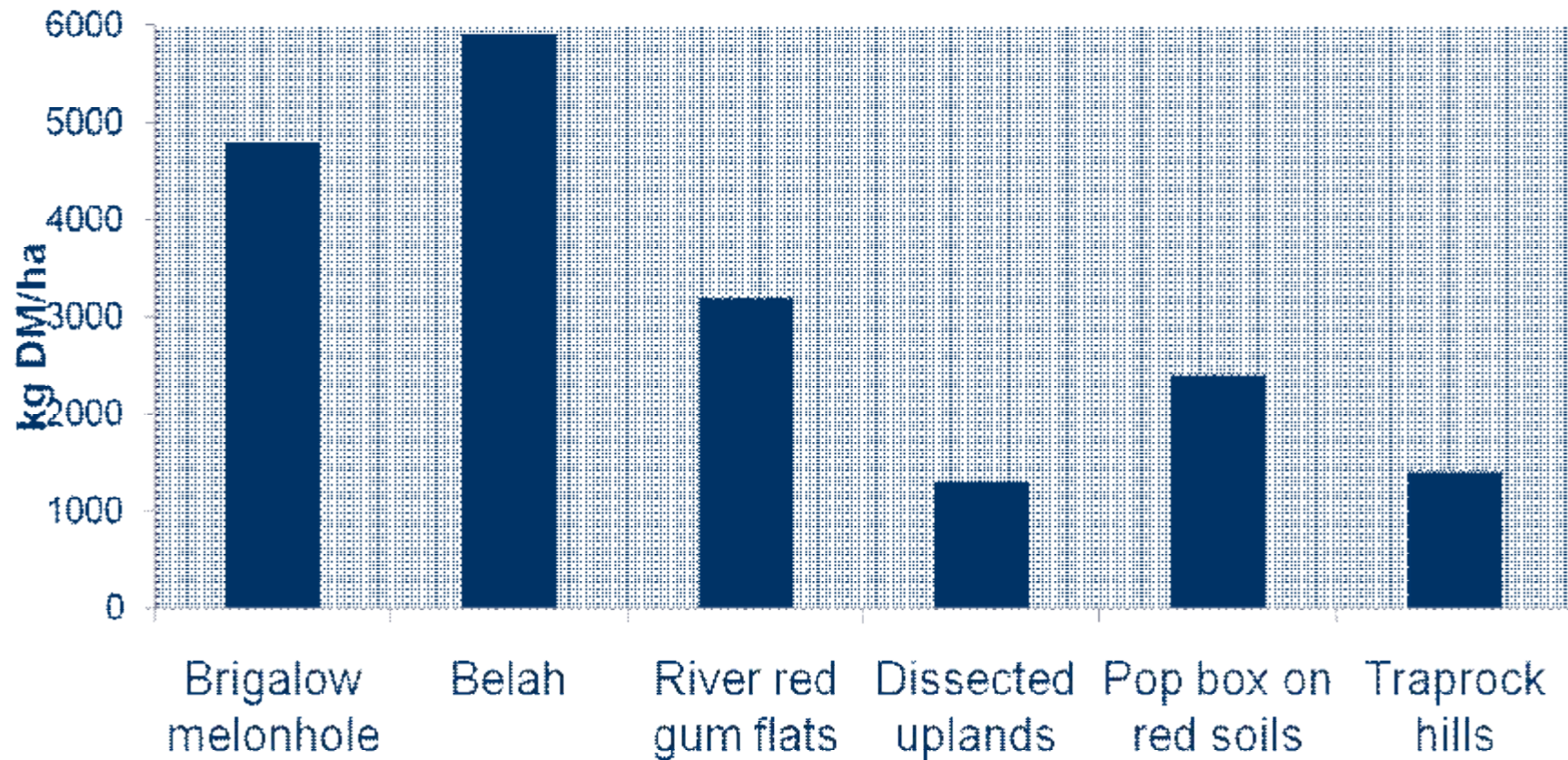




Land types



Pasture growth on land types in the Border Rivers





Carrying capacity



Long-term carrying capacity

- The average number of animals that a paddock can be expected to support over a planning horizon (5–10 years)
 - provides a benchmark of ‘where we are at now’
 - can identify opportunities for improvement



Long-term carrying capacity is probably the most important factor determining

- Animal productivity (per head and per ha)
- Long-term land and pasture condition and productivity
- Enterprise profitability



Long-term carrying capacity depends on

- Current mix of land types
 - Condition of these land types
 - Climate
 - Evenness of use by sheep
 - Grazing strategy or method
 - Goals for animal production and land condition
- } The expectation of pasture growth



Pasture utilisation

- The proportion of annual pasture growth that is consumed by livestock

1. Utilisation (%) = (Forage demand / Forage supply) x 100

2. Long-term carrying capacity = Forage demand (per AE) / (Pasture growth x Utilisation)



Safe utilisation rates in the Border Rivers

Alluvial soils (heavy clays)	30%
Clay (Brigalow) soils	30%
Texture-contrast soils (eg poplar box on red soils)	25%
Traprock soils	20%
Granite soils	20%

- Also depends on pasture condition



Calculating long-term carrying capacity

- Expected supply of pasture
 - land type
 - climate
 - land condition
- Safe annual utilisation rate
- Demand of different types of animal



Long Term Carrying Capacity

Land type	Land condition	Tree basal area (m ² /ha)	Utilisation (%)	Pasture growth (kg DM/ha)	Forage demand (kg DM/AE/year)	Land type carrying capacity (ha/AE)	Area land type	Paddock carrying capacity
Ironbarks and Spotted Gum Ridges	A	0	25	3300	3650	4.4	70	16
Blue gum on Alluvial Plains	A	0	35	5200	3650	2	110	55
Rainforest on Basalts	A	0	30	9700	3650	1.3	65	50
Softwood vine scrub	A	0	30	6500	3650	1.9	190	100
							TOTAL	224

This is the potential carrying capacity for the paddock. It assumes even grazing distribution and land in good condition.

What happens with a decline in Land Condition?

Land type	Land condition	Tree basal area (m ² /ha)	Utilisation (%)	Pasture growth (kg DW/ha)	Forage demand (kg DW/AE/year)	Land type carrying capacity (ha/AE)	Area land type	Paddock carrying capacity
Ironbarks and Spotted Gum Ridges	C	0	30	1500	3650	8.1	70	9
Blue gum on Alluvial Plains	C	0	35	2300	3650	4.5	110	24
Rainforest on Basalts	C	0	30	4400	3650	2.8	65	23
Softwood vine scrub	C	0	30	2900	3650	4.2	190	45
TOTAL								101
This is the potential carrying capacity for the paddock. It assumes even grazing distribution and land in C condition.								



Short-term carrying capacity depends on

- pasture on hand
 - anticipated pasture growth
 - forage quality and desired animal performance
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- Short-term carrying capacity will deviate from long-term carrying capacity due to variation in rainfall received
 - Long-term and short-term carrying capacity are inter-dependent



Forage budgeting

- Existing forage supply
- Anticipated forage supply
- Forage quality

Existing forage supply – use photo standards



**Eucalypt
woodlands**

500 kg/ha



850 kg/ha



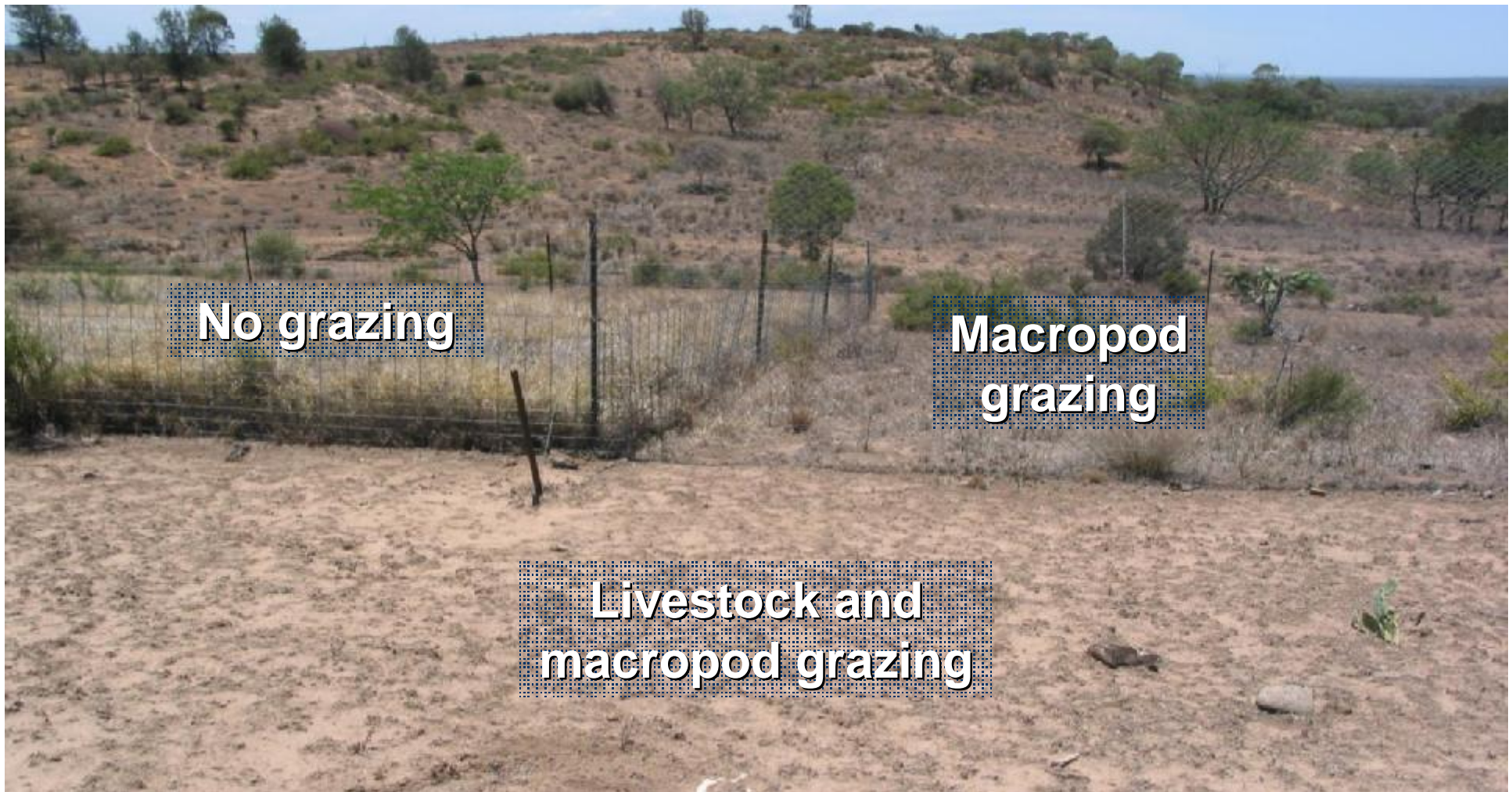
2500 kg/ha



3600 kg/ha



Total grazing pressure



No grazing

Macropod
grazing

Livestock and
macropod grazing



Summary

- Know your country
 - The land types
 - Their condition
 - Their potential
 - Your climate
- Know your business
 - Your stocking rates
 - Your grazing pressure
 - Your potential



Summary

- Plan
 - A grazing strategy to improve or maintain land condition
 - Feed budgets to maximise opportunities
 - Rest in pastures
 - Match demand to season



Summary

- Where to for help?
 - Grazing Land Management (GLM) course
 - ‘Stocktake’ course
 - MLA Feed Demand calculator
 - Leading Sheep