



Managing Grazing Distribution in Savanna Landscapes: Challenges in Northern Australia

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Why discuss cattle behaviour at a Kruger meeting?

- **Spatial distribution of grazing is a management issue for both wildlife and cattle**
- **Water provision is one of the main management interventions available**
- **Manipulating water availability is expected to influence herbivore distribution**
- **Are there common principles?**



Livestock grazing in Australian savannas

- **Large paddocks: often > 120 sq. km (30,000 acres)**
- **Bores for stock water (1-3 per paddock)**
- **Pastures unimproved (i.e. native spp.)**
- **3P (perennial, productive & palatable) grasses**
- **Vegetation is poorly adapted to herbivory**



Grazing distribution issues and consequences

Cattle grazing is concentrated:

- near water points
- in preferred patches/communities
- in riparian areas

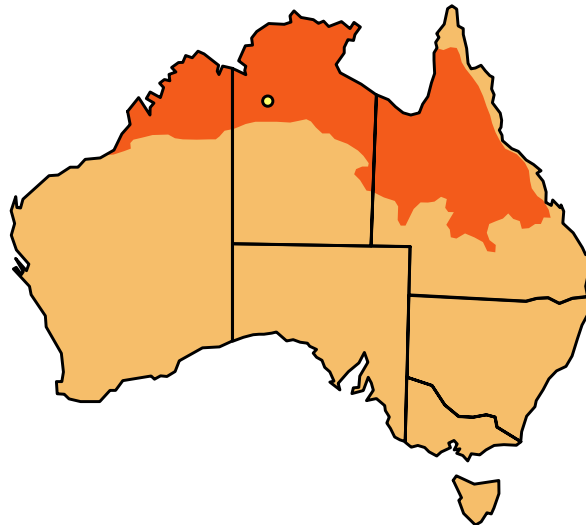
Consequences:

- localised overgrazing
- poor forage utilisation
- loss of 3P grasses
- increase in unpalatable perennials and annuals
- increase in bare ground



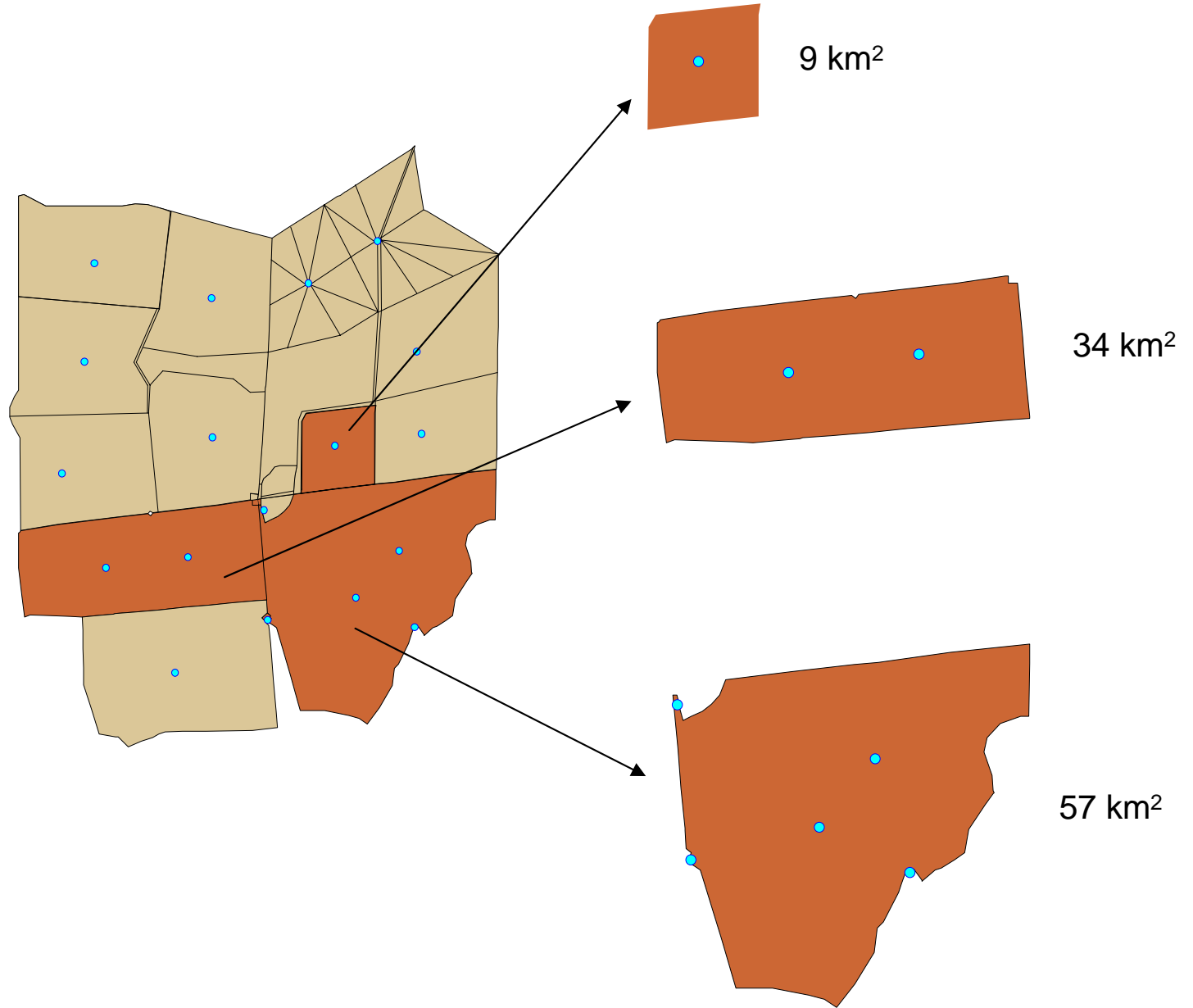
Improve the evenness of grazing at patch to landscape scales to:

- Reduce the incidence of heavily grazed patches
- Achieve more effective use of pasture resources across the landscape.



Obvious solution??

- smaller paddocks
- more water points



GPS collars

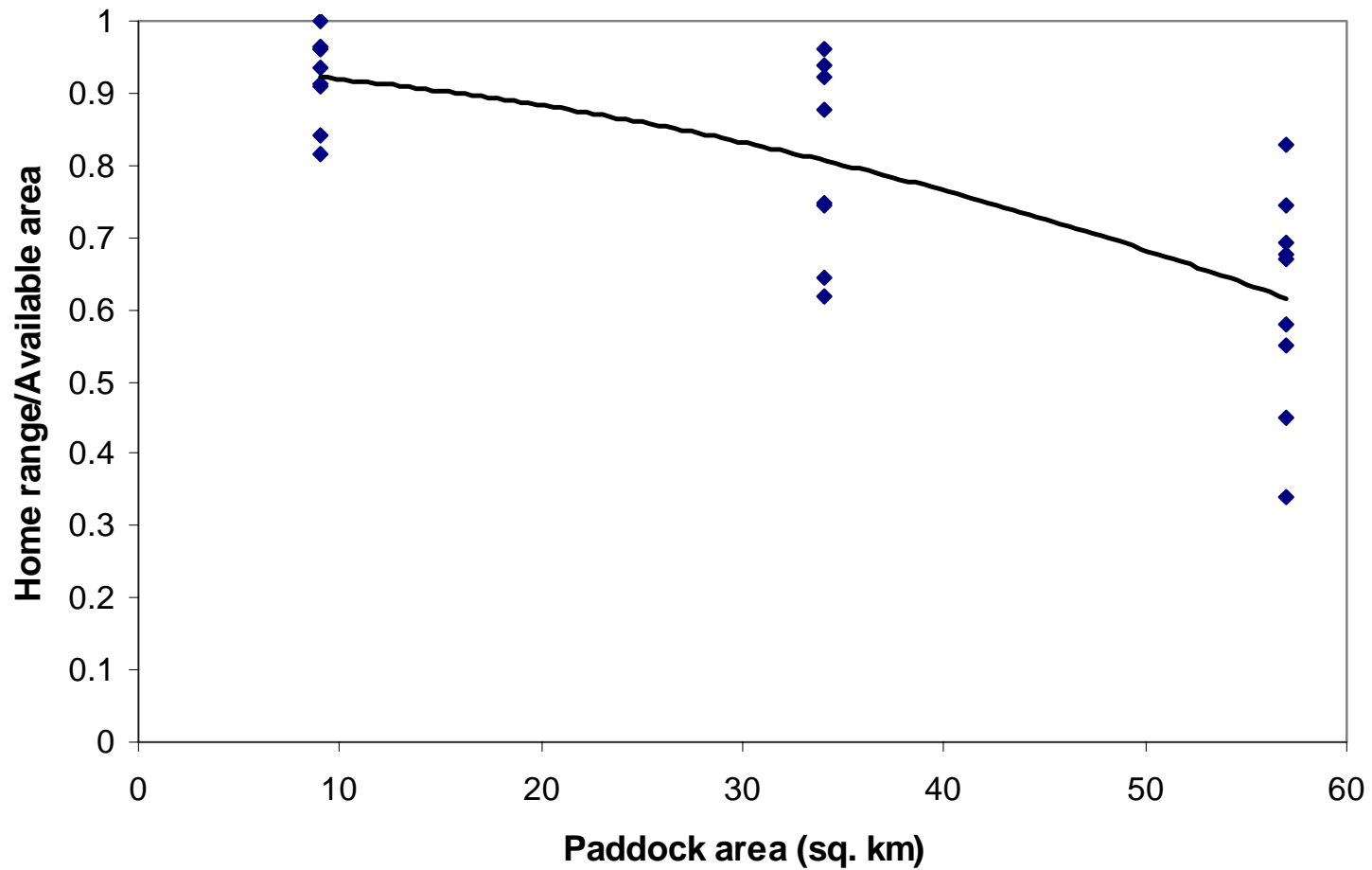
- 3 paddocks
- 4 collars/paddock
- 6-month periods
- Hourly fixes

Pasture Assessment

- Yield
- Species composition
- Patchiness
- Defoliation

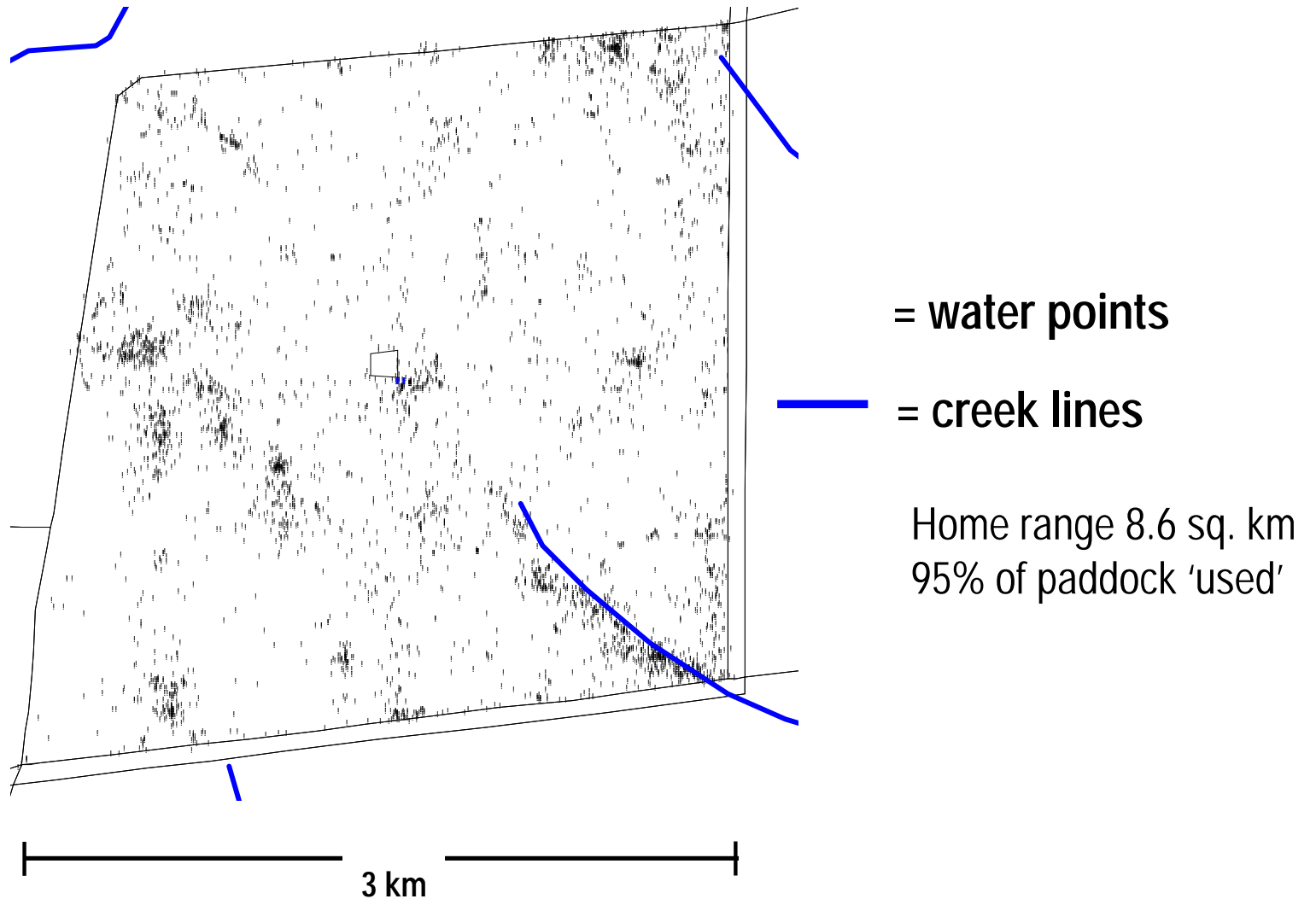


Effectiveness of landscape use



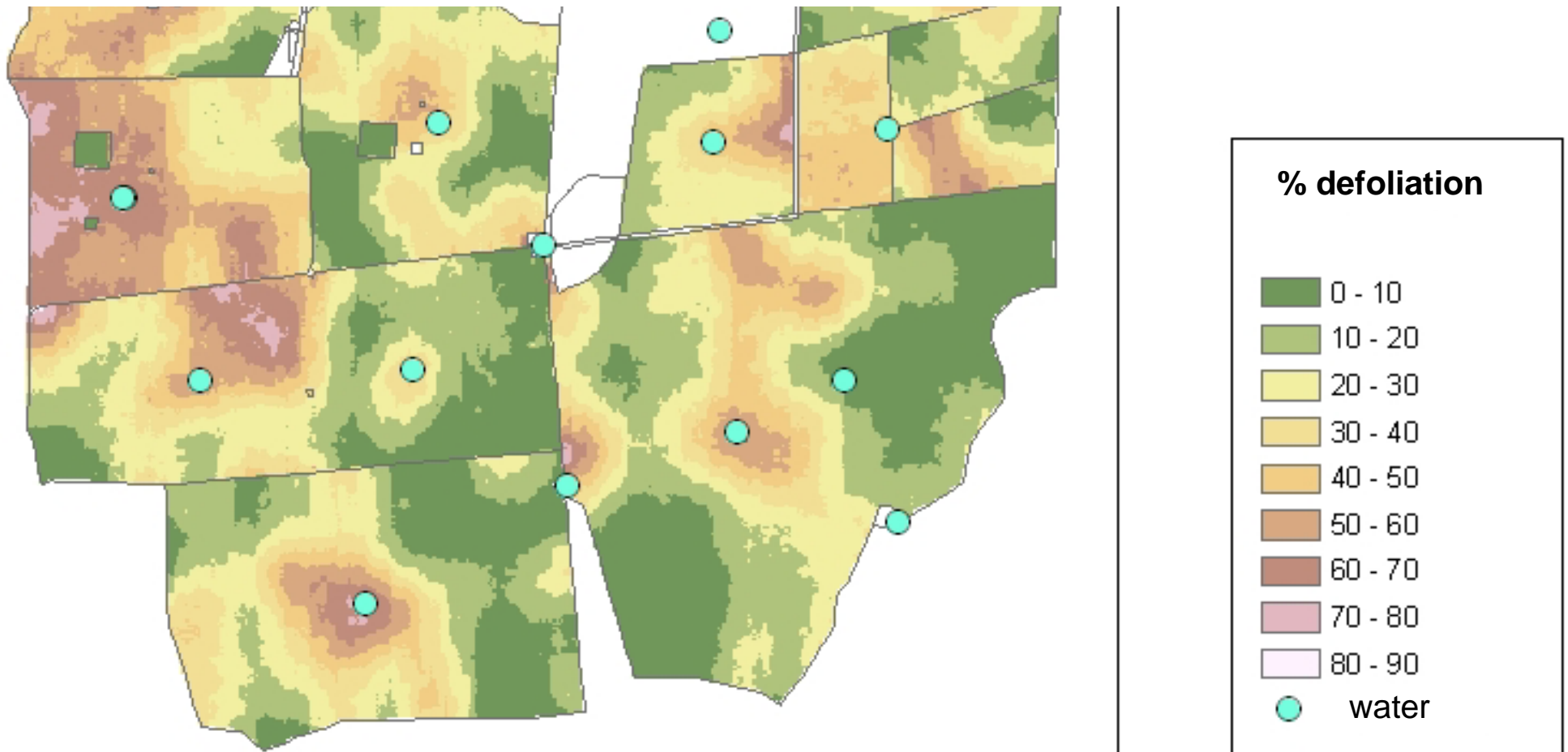
Smaller paddocks = more effective landscape use

Grazing more widespread, but not uniform



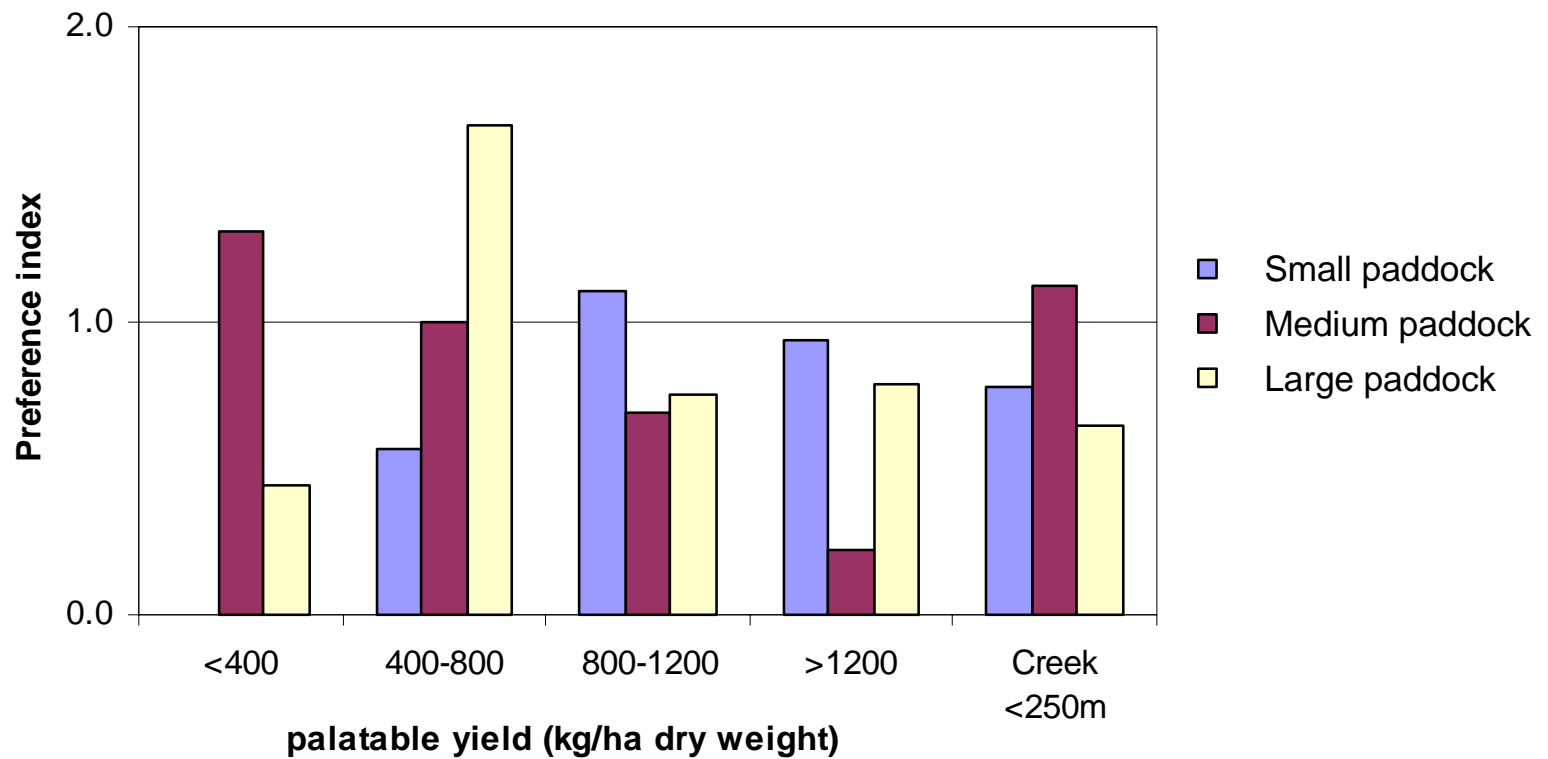
Up to 50% of time in only 13% of small (9 sq. km) paddock

Percent defoliation of herbage - 2005 dry season



Water points are not always the dominant influence on spatial patterns of use

Preference for forage yield classes



No preference for areas of high palatable perennial yield



What is driving grazing distribution?

More waters and smaller paddocks do not eliminate preferential habitat use within paddocks

Four possible contributing factors:

- A mismatch between the scale of management and the scale of animal impact (landscape vs patch)
- Landscape context
- Continued preference for grazed patches
- Learned and/or inherited preferences in plant and habitat selection

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Thank You

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