



David Marsh


© W van Aken, CSIRO



Looking into the future – alternative scenarios

Michael Dunlop
CSIRO Sustainable Ecosystems

Fenner Conference, Martian Embassy, 9 November 2006



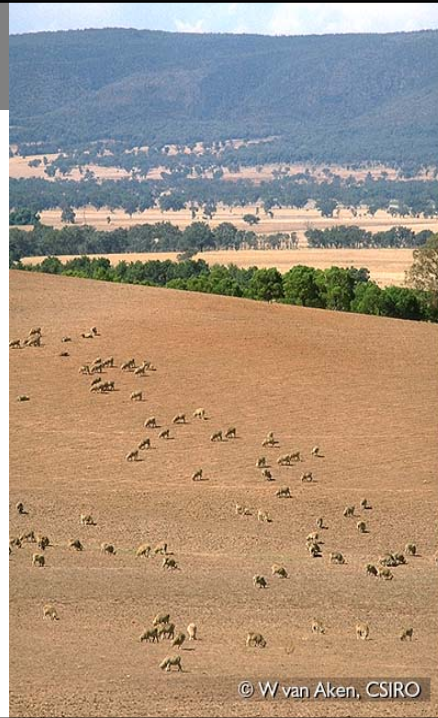
Two scenarios

- **Hypothetical farm**
- **Two perspectives on balancing production and conservation in 2035 – “Maggie” & “Bill”**
- **Often strongly held but implicit**
- **Help us reflect on the present and future**
- **What are the key policy and research issues?**

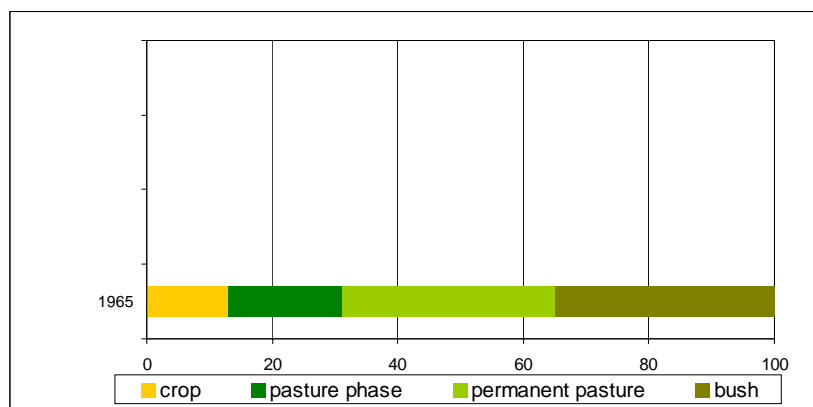


Some dimensions

- People
- Production: crop, wool, meat, timber
- Recreation
- Native species
- Soil fertility
- Acidification
- Salinity
- Erosion
- Carbon
- Water
- Policy
- R&D

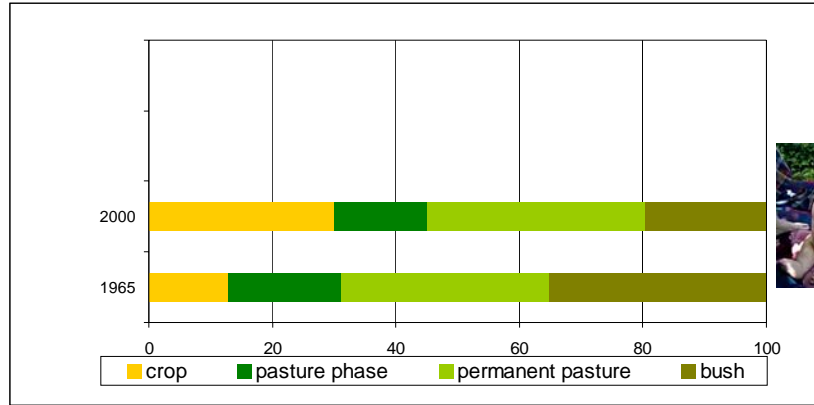


1965 - When Mike was born



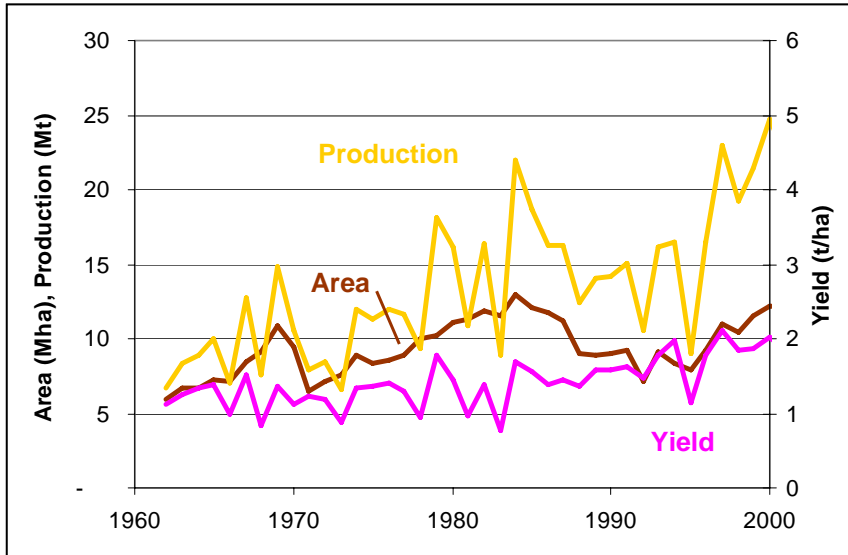


2000 - When Jack was born



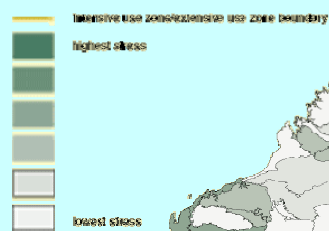


National cereal production



“Landscape stress”

Figure 84. Continental landscape stress.



Data source:
National Land and Water Resources Audit, Landscape
Health in Australia Database 2001.
Data most are assumed to be correct as received from
the data suppliers.
©Commonwealth of Australia 2001

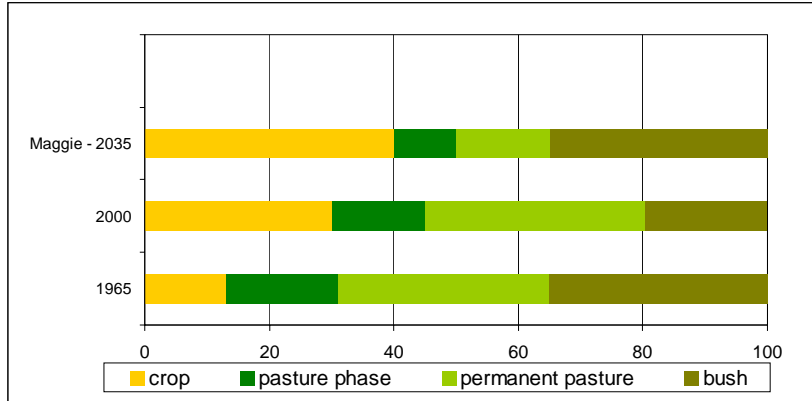
Landscape stress

- Clearing
- Fragmentation
- Pests
- Threatened spp
- Extinctions
- Conservation

NLWRA 2001



2035 - When "Maggie" was born

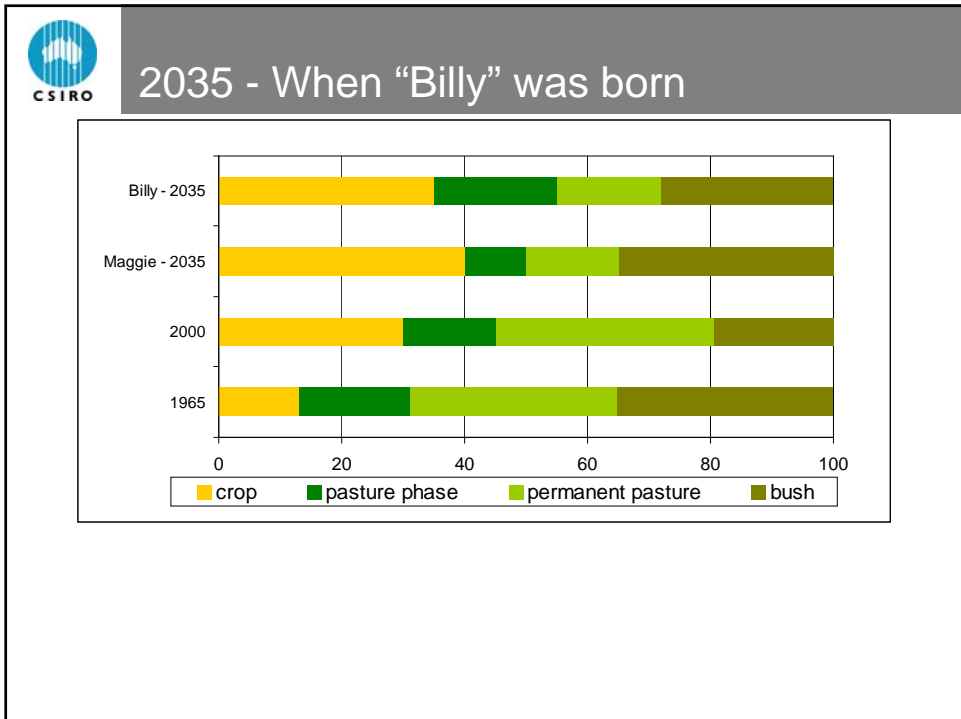


- **Seasonal forecasts**
- **Diverse crops, including fodder**
- **High input, soil tests**
- **Minimum tillage**
- **Precision agriculture**

- **"Top tree" superstar**
- **Revegetation entrepreneur**
 - NHT, Greening Aust, Carbon Offsets
 - Tube-stock, direct seeding, aerial sowing
- **In-ground water troughs**
- **Miles of fencing**

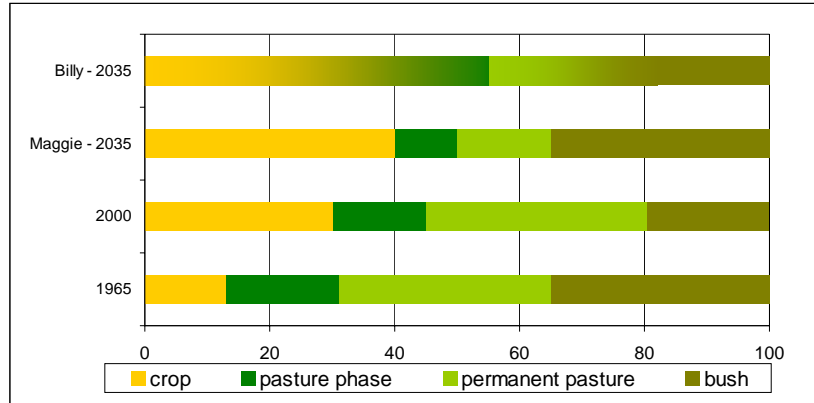








2035 - When "Billy" was born



- Pasture cropping
- Scatter, clumped, continuous trees
- Short term land use change,
- Spelling verges, fast growing shrubs
- Targeted pulse grazing
- Low input
- (bio-fertilisers)
- Lower revenue but more steady
- Habitat, shade, timber







In closing ...

- Partitioned landscape vs integration
- High returns in good years vs lower & steadier returns
- High input/output vs low cost
- Fast vs slow cycling of water, nutrients, soil carbon
- “Complex farming of a simple landscape vs simple farming of a complex landscape”
- Can fertility be maintained? Is either system sustainable?
- “Healthy soil”, “landscape factors”, “better environment”
- Stewardship vs environmental credit?
- What information and technology is needed?
- Where is the capital value: manufactured, human, natural?

Thanks

Paul Ryan, CSIRO
David Marsh, Boorowa
Other speakers



Thank You

Contact

Mike Dunlop
Phone: 02 6242 1715
Email: michael.dunlop@csiro.au