Grassland capability assessment using computer simulation

Libby Salmon

Richard Simpson   Adam Stefanski
Andrew Moore   David Marshall
John Donnelly

Phil Graham - NSW Department of Primary Industry

Grant and Annette Burbidge - "Connemara"

CSIRO
PLANT
INDUSTRY

Integrating grazing system resources
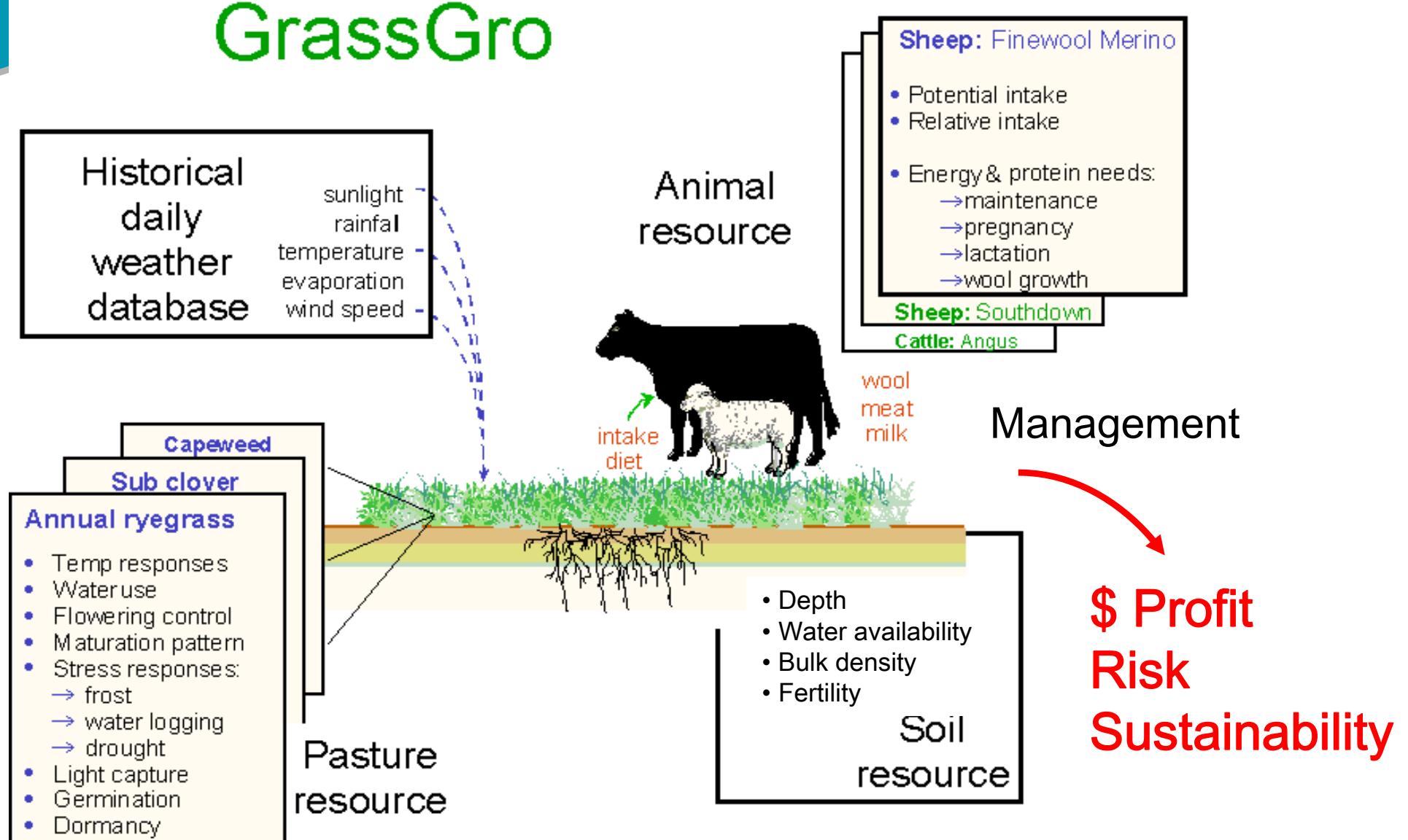
"Connemara" via Tarcutta, NSW

800 mm annual rainfall

↓

perennial – annual pastures

↓

Fine wool

"Curse" Landscape

"Airstrip" Landscape

800 ha
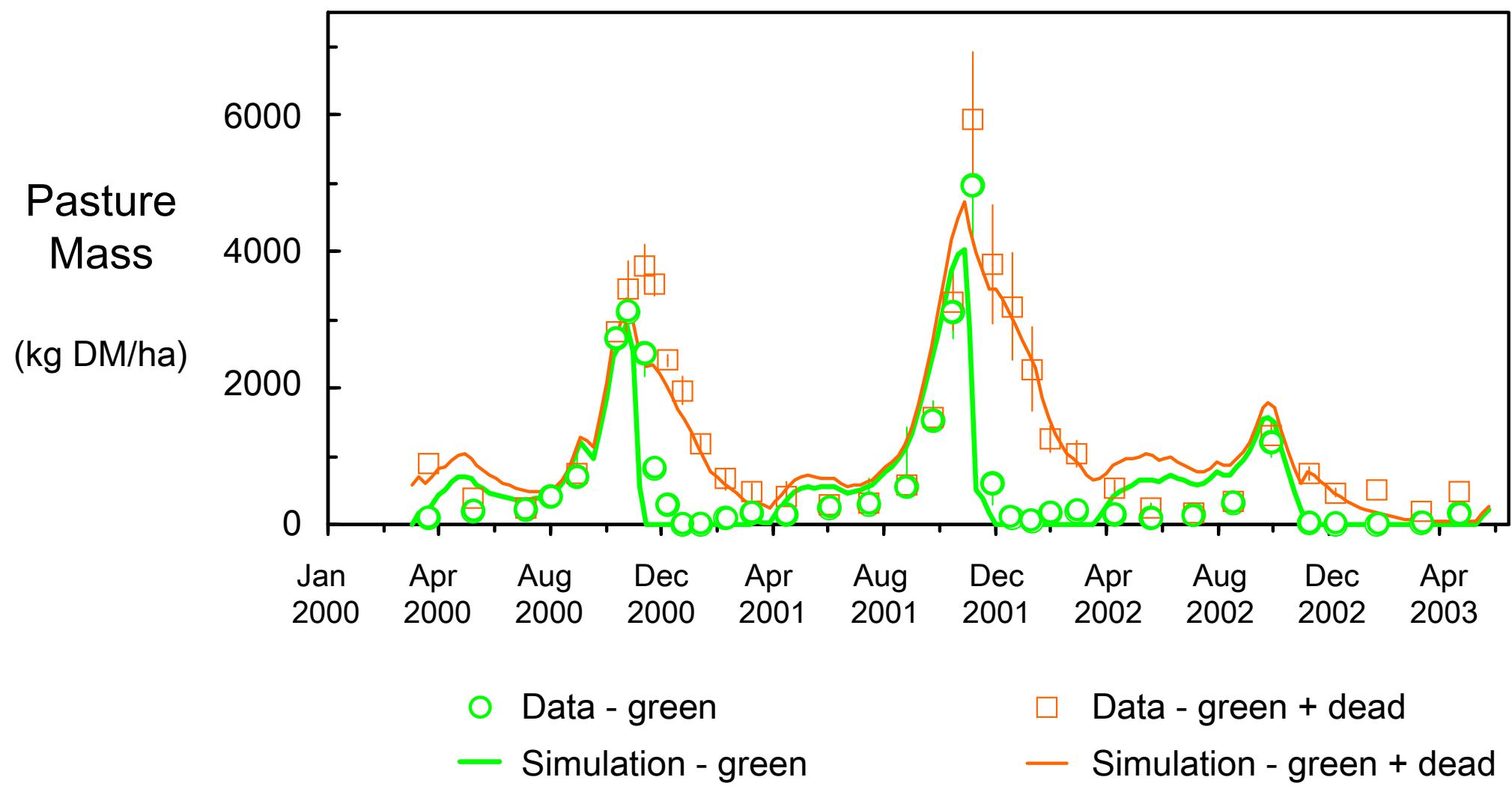
Simulation of pasture supply on "Curse" landscape

"Curse" landscape - long term production and income variability
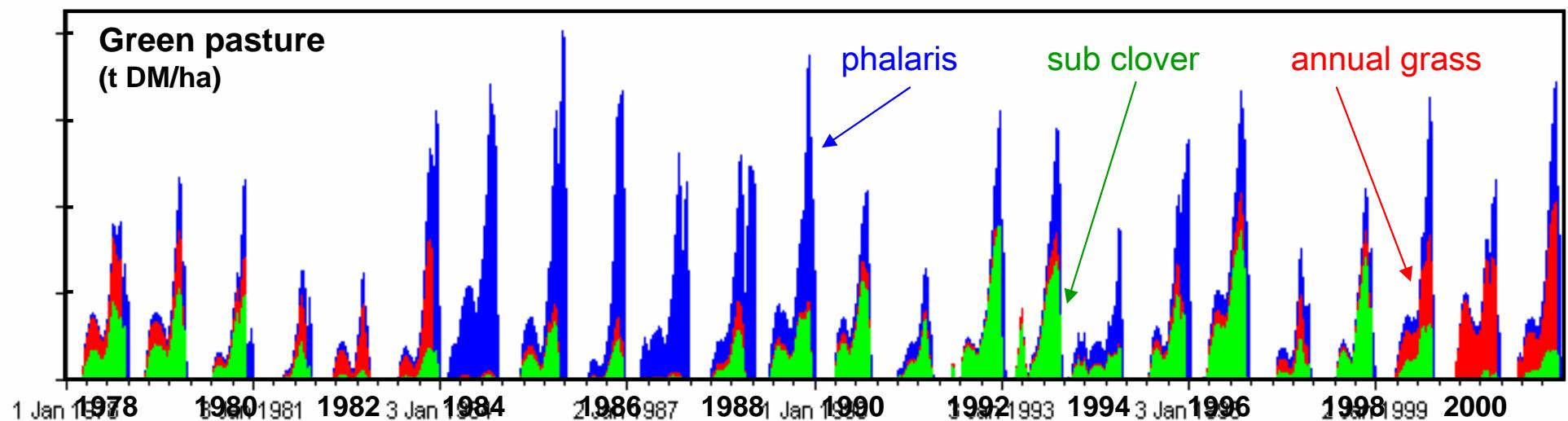
Green pasture (t DM/ha)

phalaris   sub clover   annual grass

"Curse" landscape - long term production and income variability

"Curse" landscape - long term production and income variability

# "Curse" landscape - long term production and income variability

Farm profit ($/ha)

Wool cut (kg (clean)/ha)

Green pasture (t DM/ha)

phalaris

sub clover

annual grass

1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000
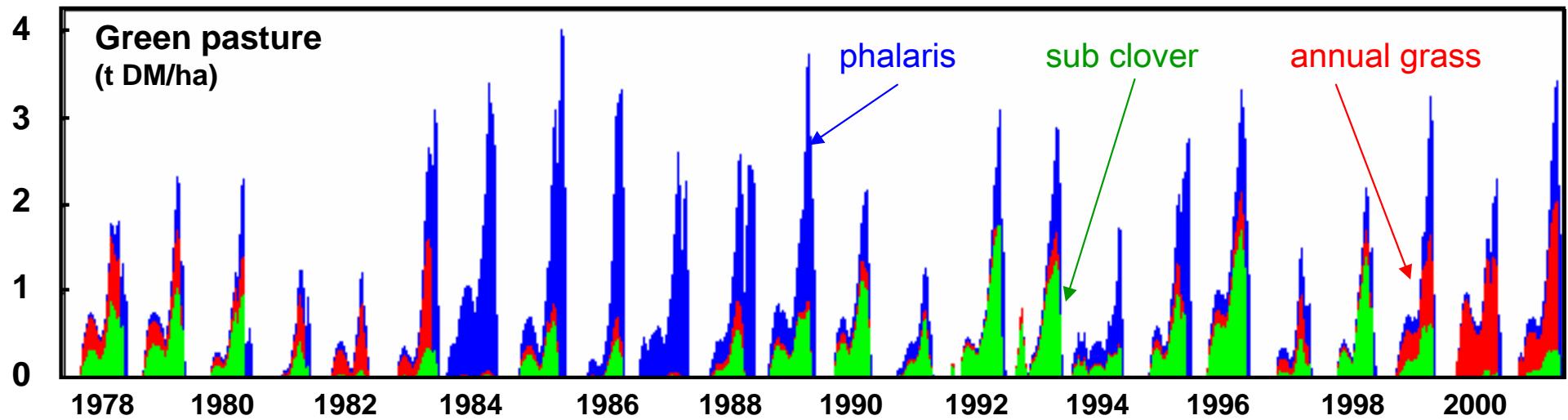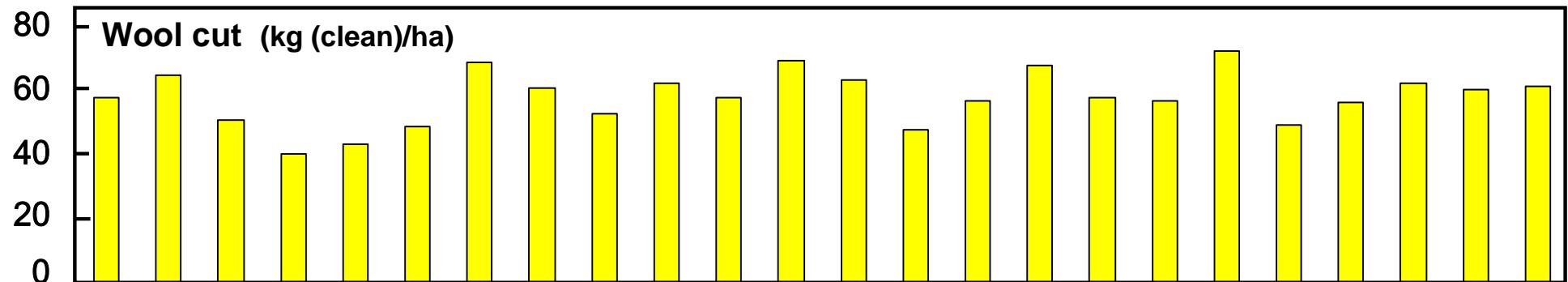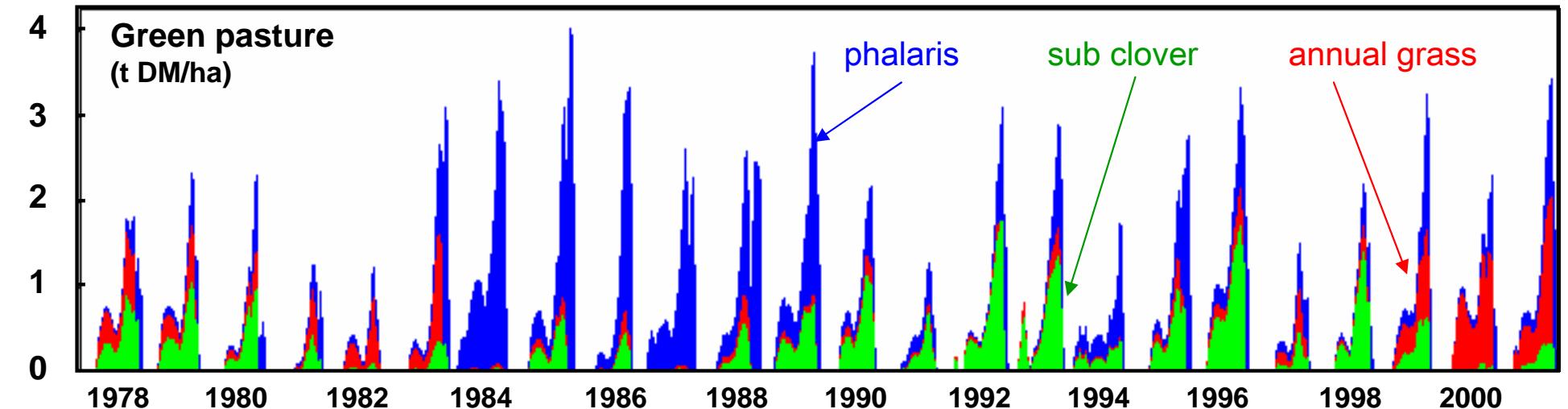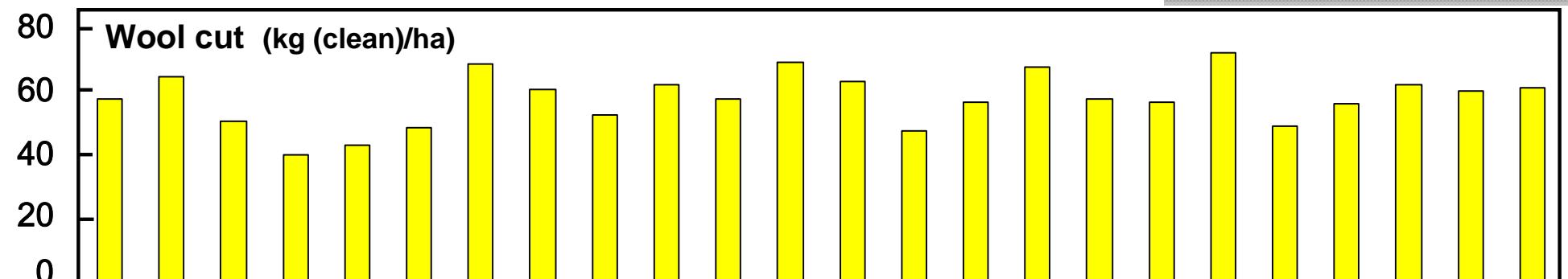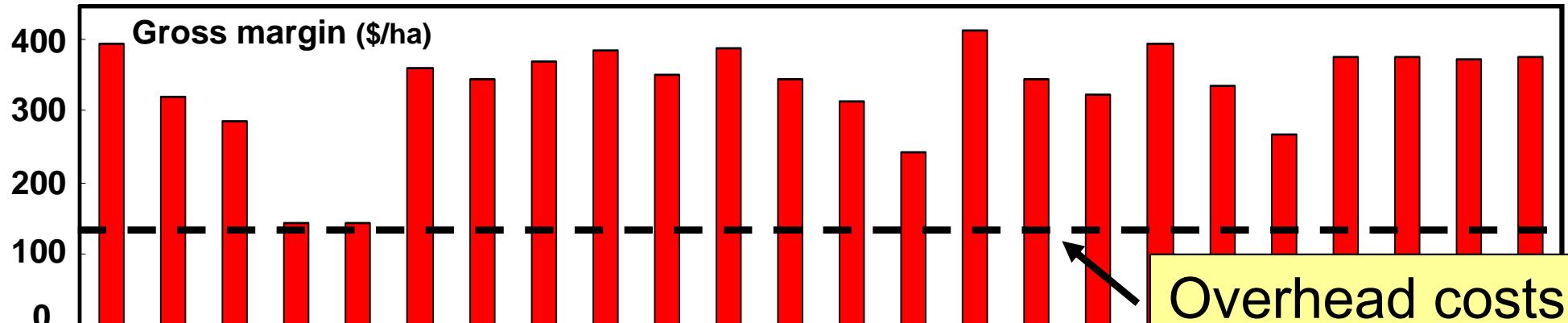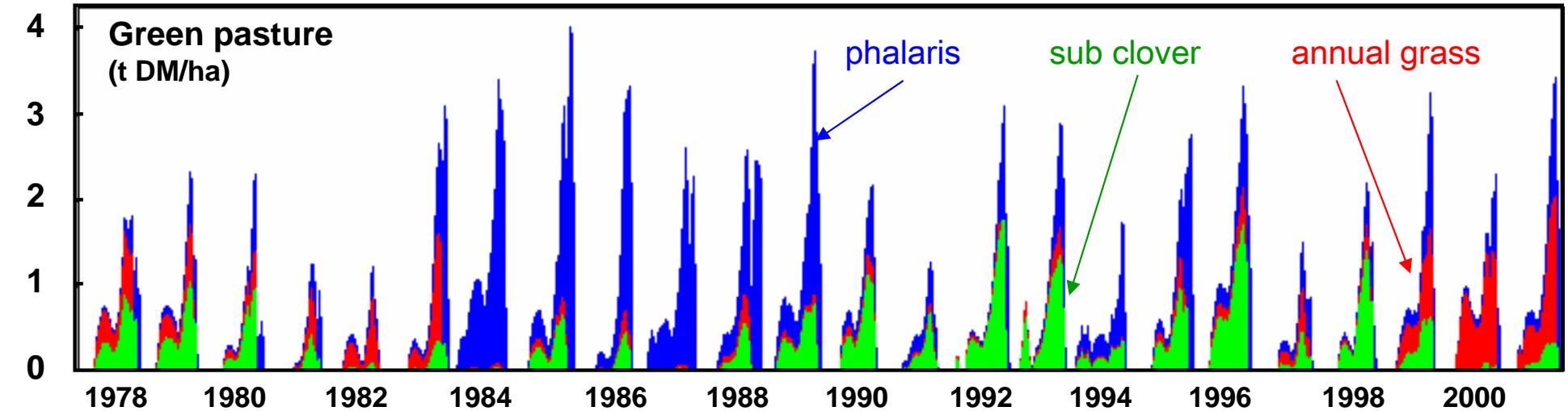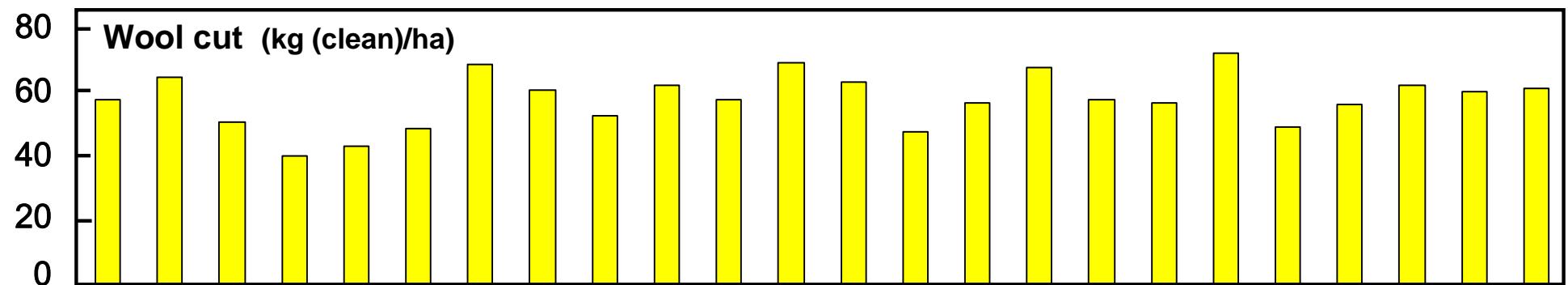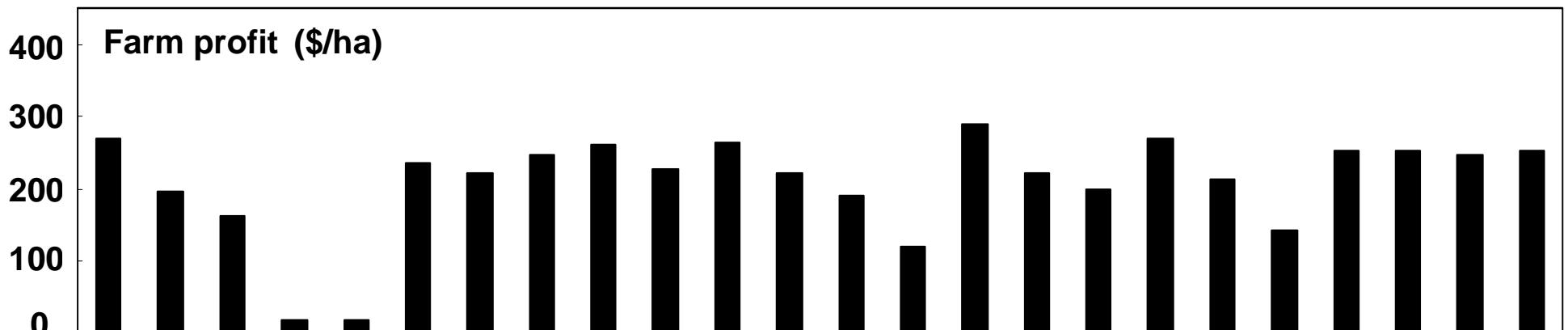
Potential *vs* risk
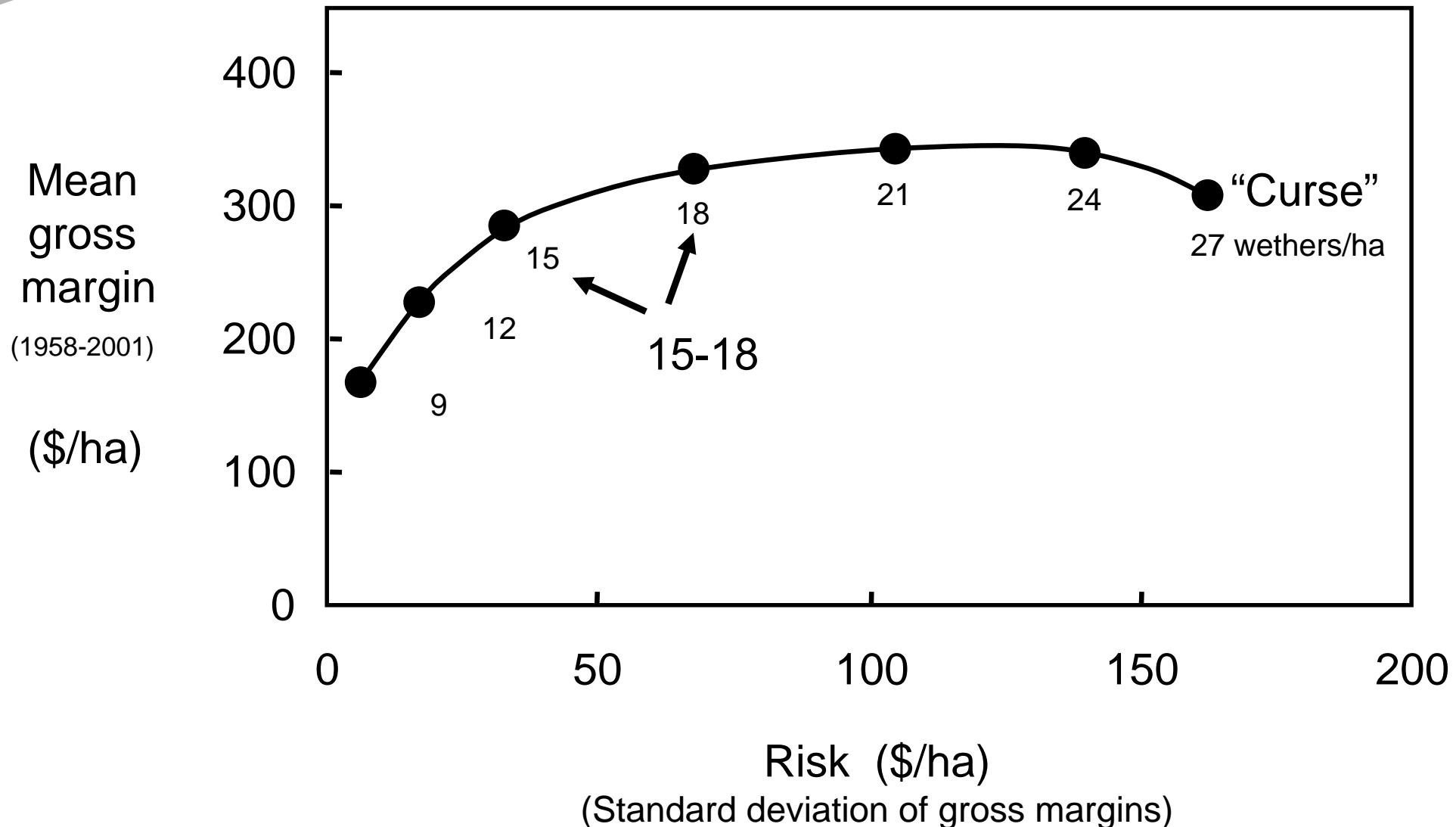
Comparing paddock performance
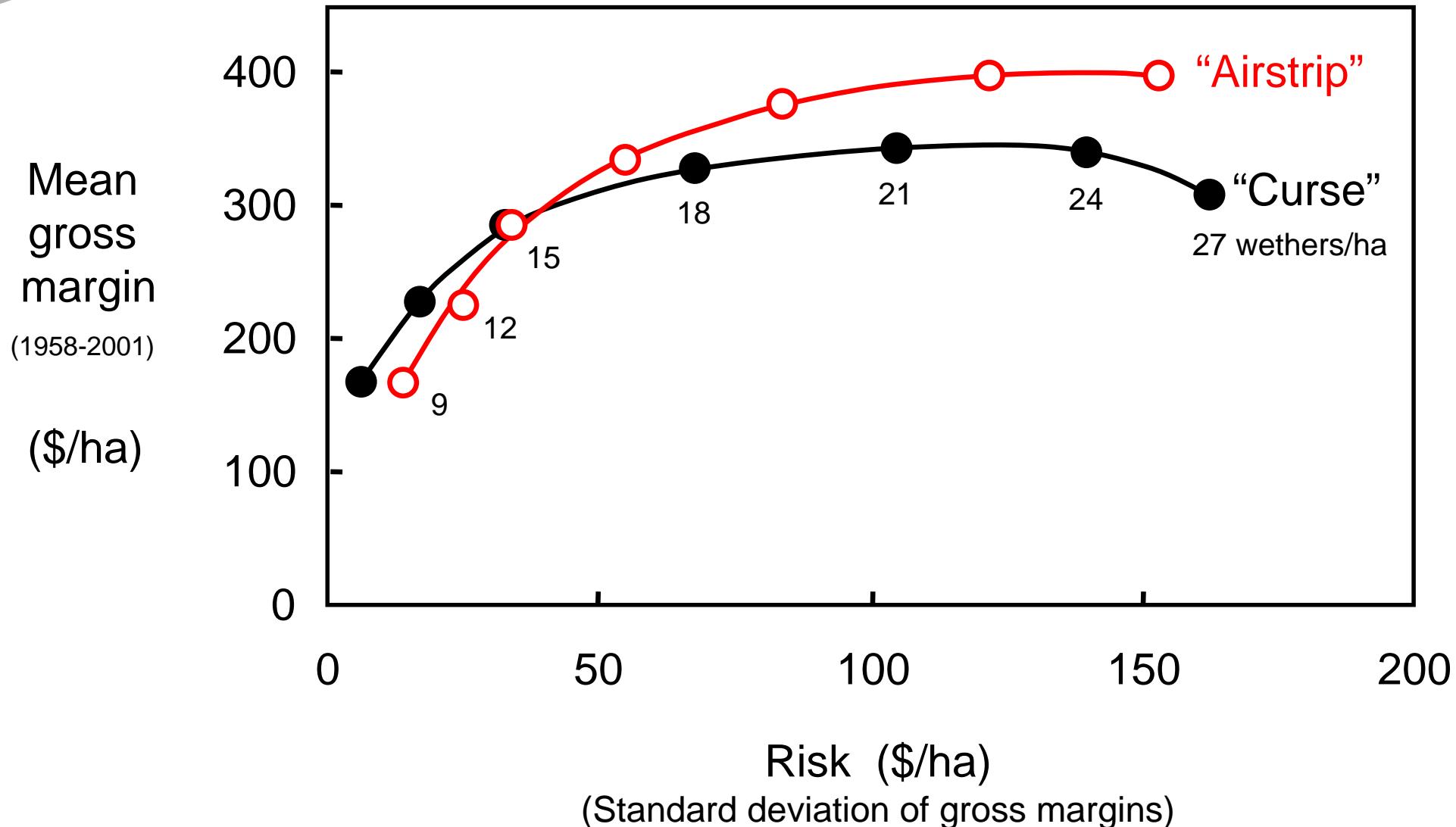
What is the best long-term position?
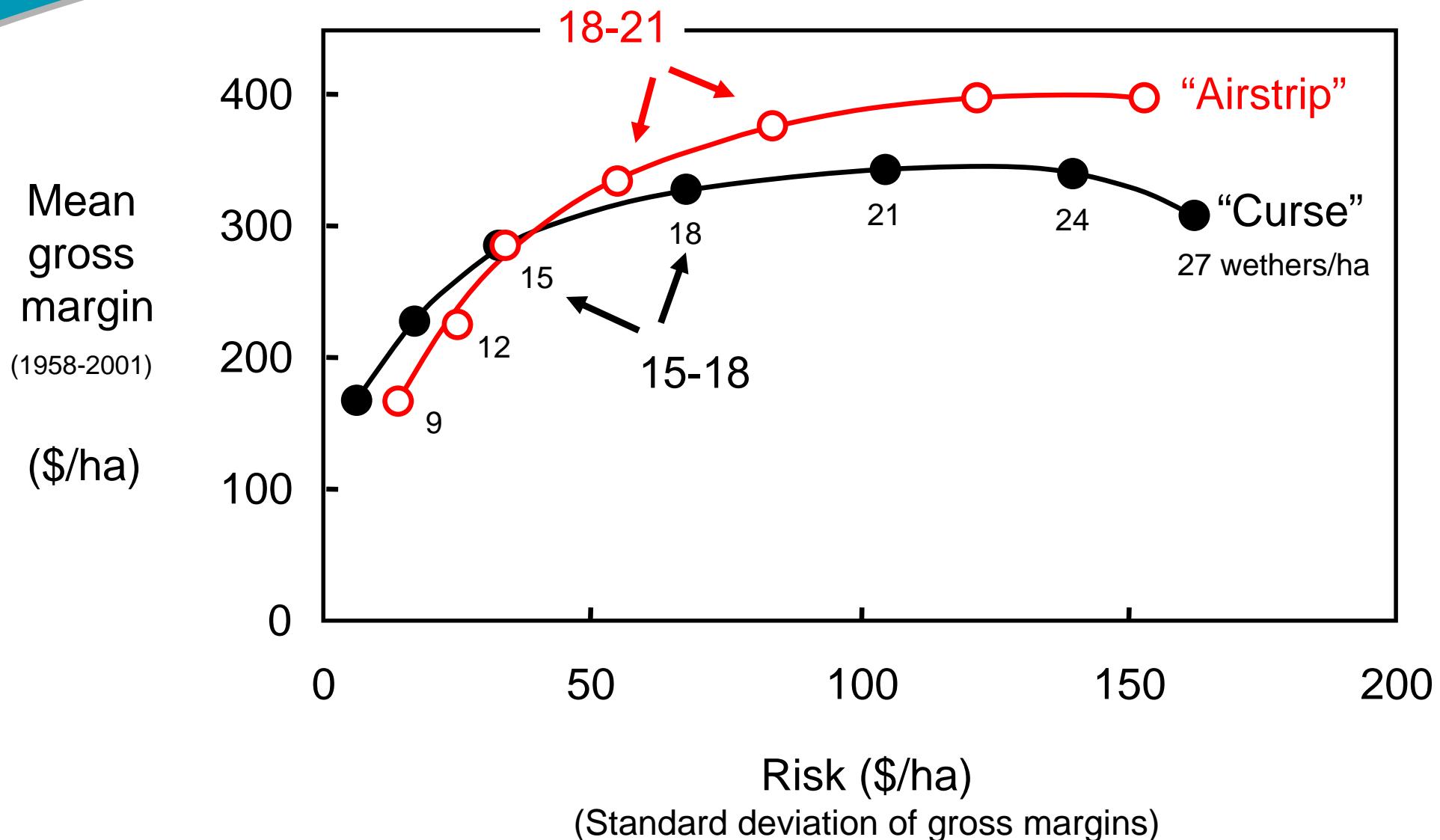
Sustainable farming systems?

Farm scale issues:

Profitability
Income stability

Landscape scale

droughts

1994
2002

Soil acidity
Soil erosion
Biodiversity
Dryland salinity
Water balance

Option 1:

feed
grain in
paddock
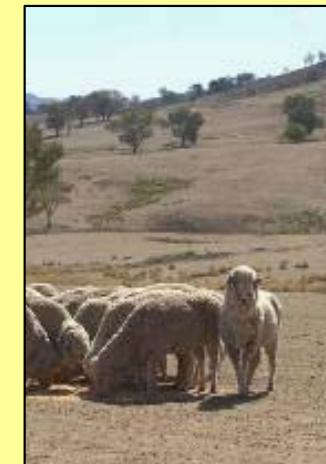
Option 2:

de-stock
& feedlot