

bushfire CRC

PROGRAM B

➤ **Fire, Fuel & Grazing in the Australian High Country**
HighFire long-term grazing & fire experiments

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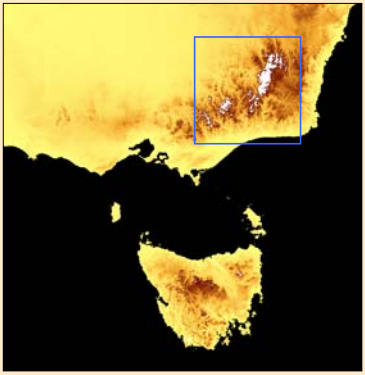
Talk overview

➤ HighFire grazing/prescribed burning experiment

- Background and review of previous research.
- Project aims.
- Experimental design.
- Results from the 1st year of the experiment.



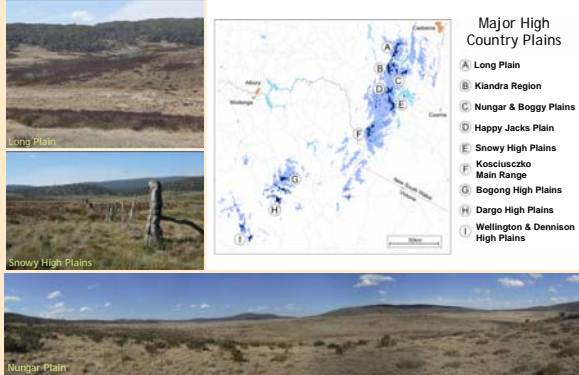
What do we mean by 'high country?' bushfire CRC



Legend
2200 m
0 m
Land > 1300m

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High Plains ecosystems



Major High Country Plains

- A Long Plain
- B Kandra Region
- C Nungar & Boggy Plains
- D Happy Jacks Plain
- E Snowy High Plains
- F Kosciuszko Main Range
- G Bogong High Plains
- H Dargo High Plains
- I Wallington & Dennison High Plains

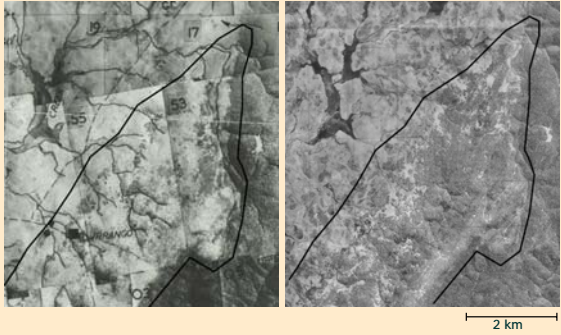
High Plains management history bushfire CRC

- The High Plains 'snow-belt' was used seasonally for cattle and/or sheep grazing.
- Grazing commenced ~1840, and ceased in NSW ~1970, and more recently in Victoria.
- Grazing was often combined with fire to remove 'rank' pasture, and promote 'green pick'.
- Lessees sometimes required to fence + clear vegetation for pasture improvement
- The landscapes are still responding to the changed management regime.

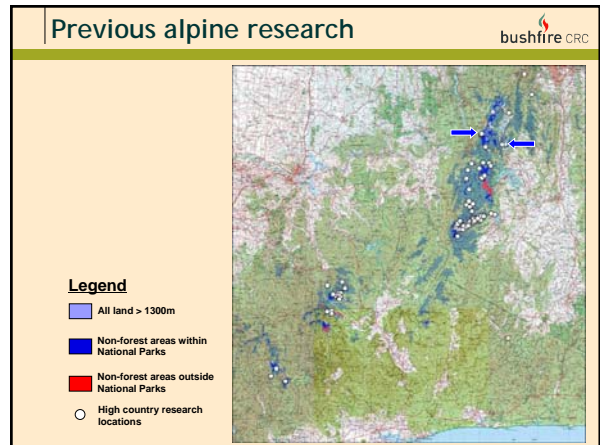
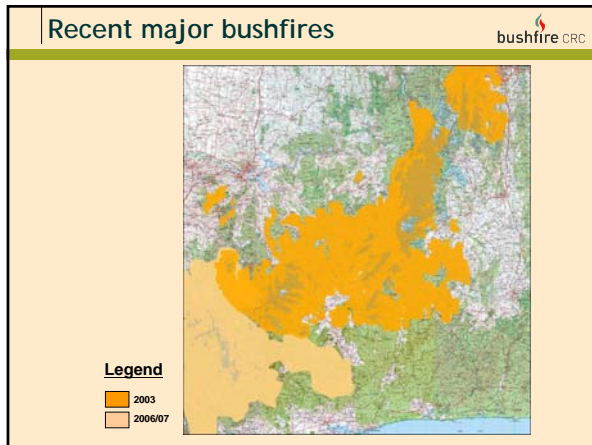
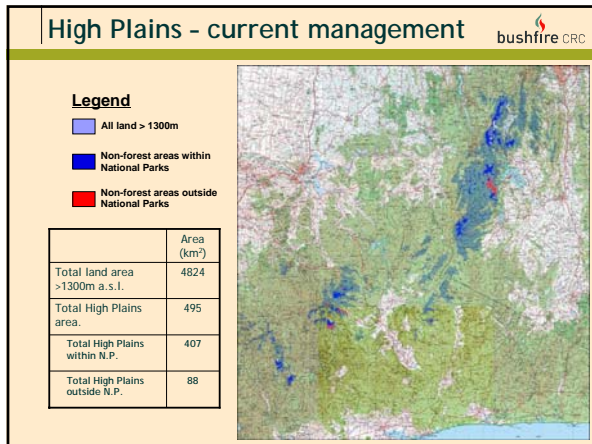


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Currango Plain - 1944 vs. 2001



2 km

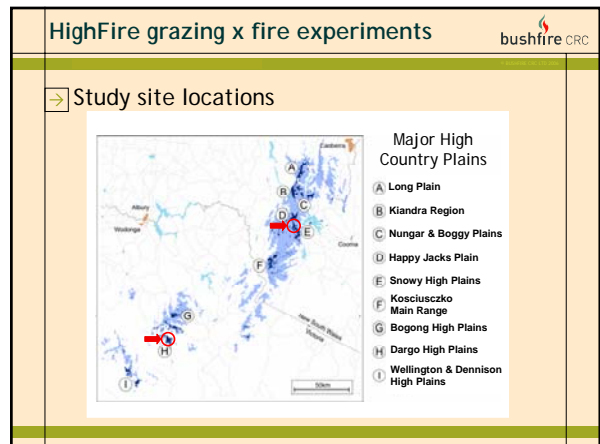



HighFire grazing x fire experiments

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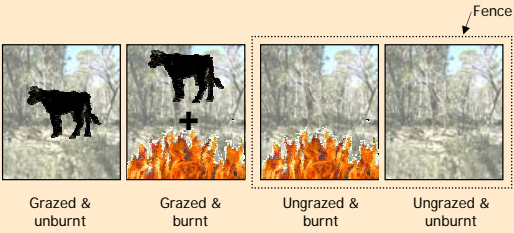
→ Aims

- To extend the existing research on subalpine vegetation dynamics and fire response through investigating the:
 - Interactive effects of fire and grazing
 - the responses of *vegetation structure* and *ecosystem physiology*, in addition to vegetation composition and biodiversity.
- To establish and sustain a long-term field experimental and monitoring program, for both research and teaching
- To provide a scientific basis for advising land owners on the implications of different grazing land management options.




HighFire grazing x fire experiments 

➤ Site layout and experimental design




Grazed & unburnt Grazed & burnt Ungrazed & burnt Ungrazed & unburnt

Snowy High Plains, six sites (3x grassland & 3x woodland)
Dargo High Plains, three sites (3x grassland)

HighFire grazing x fire experiments 

➤ Plot layout and experimental design



Grassland experimental plot Woodland experimental plot

HighFire grazing x fire experiments 



J. Gould

HighFire grazing x fire experiments 

Before burn After burn




HighFire grazing x fire experiments 

➤ Data collection



- Fine & coarse woody (dead) fuel loads (leaf, bark, fine 0-6mm; 6-10mm; 10-25mm; >25mm).
- Species cover, height and composition
- Tree mapping and diameter measurements
- Shrub understorey composition & structure
- Soil chemistry
- Permanent photopoints



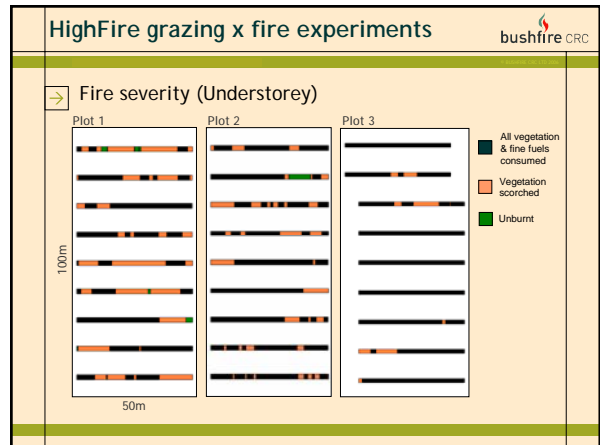
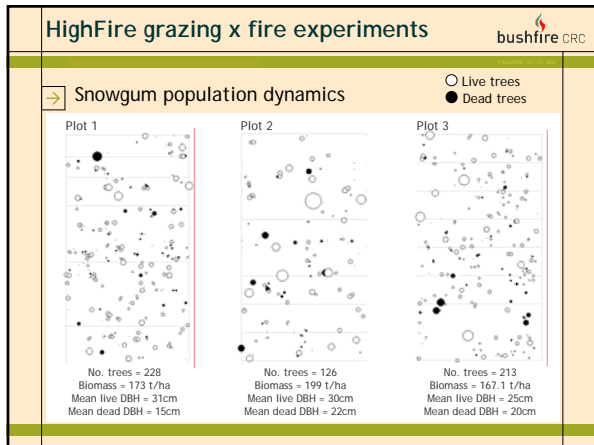
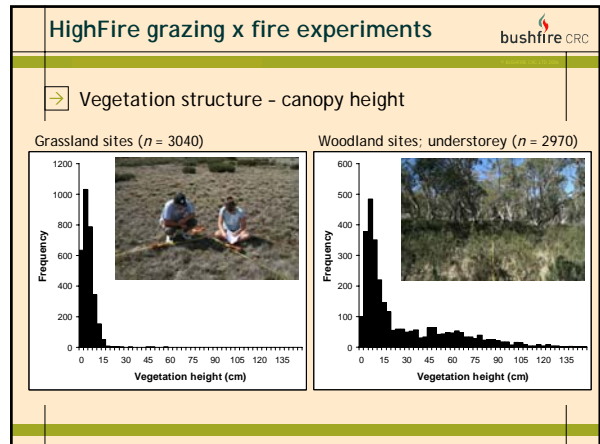
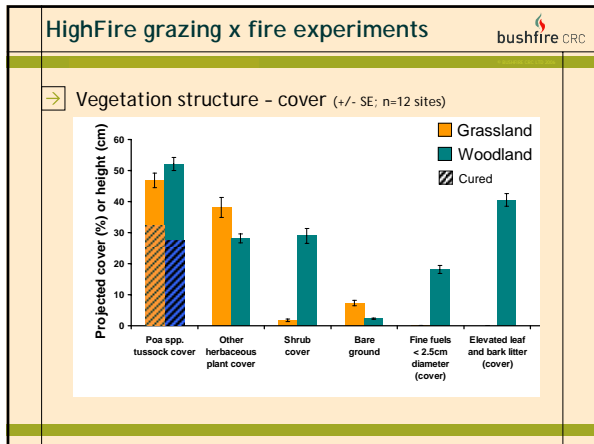
HighFire grazing x fire experiments 

➤ Methods: Fine fuel & species cover

Cover determination by laser point-quadrat intercept
360 quadrats/plot; ~13000 overall.

<http://www.steverox.info/LaserPointQuadrat/LaserPointQuadrat.htm>



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Progress summary

- Experimental plots are established, and baseline data collected.
- Cattle excluded in November 2006; First experimental burns applied in March 2007.
- The first teaching field camp was run at the Snowy Plains site (March 2007).
- Full re-survey over the 2007/2008 season, and beyond ...

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