WORKSHOP: Balancing grassland conservation & other land uses

Speakers: Sarah Sharp, Alice McDougall, Graham Fifield

Theme: Our grassy ecosystems are highly prized, not only for conservation, but also for many other uses not least of which are agricultural production, urban parks, defence training, airports, mining, road easements and hobby farms. What are the issues and potential conflicts and what approaches are people taking to meet a range of outcomes? How do those who are trying to make a living off their land deal with the pressures from government and the community to 'conserve' their grassy ecosystems?

Conservation on- and off-reserve

Sarah Sharp

There is a tendency to believe that conservation of grassy landscapes outside reserves is not an optimal solution. The Collins dictionary defines conservation as 'keeping something from change, loss or injury', or, relating to conservation of natural resources and the environment, 'protection, preservation and careful management'. It is very unlikely that all the states of grassy ecosystems are contained within reserves, and it is because of the varied land uses and management that we have the diversity of species and dynamics that is represented today. There are some things that can be done off-reserve that are not possible in reserves and vice versa. The most important thing is to support the work of land managers and other custodians so that they can manage these areas in similar or better condition, while not placing undue pressure on them. Such resources include physical resources (money, materials), assistance on-ground, advice, and encouragement. Networks exist in many forms, and these continue to be important mechanisms of support.

Sarah Sharp is an ecologist in private practice, specialising in conservation management of grassy ecosystems. Previously she worked with the ACT Government as an ecologist with responsibilities in the conservation (protection and management) of lowland grassy ecosystems. She provides assessment and advice on managing grassland communities, for government and private organisations and private landholders. Sarah is President of Friends of Grasslands and was involved in the establishment of Friends of Grasslands 20 years ago.

Planning the grassland landscape – urban edge: planning for Molonglo River Reserve

Alice McDougall

Canberra supports a population of 375,000 which is projected to double by 2056. Canberra is a highly planned city with urban development bordering grassland nature reserves. Often along these borders we see conflicts between conservation and development where challenges arise trying to satisfy both planning and conservation requirements. One way of dealing with these conflicts is to look at using multi management objectives to satisfy both conservation and planning requirements in grasslands. Stage 2 development beside the Molonglo River Reserve plans for housing and

recreational activities such as walking, cycling and horse riding paths while applying bushfire management practices in Asset Protection Zones. Coinciding with these Asset Protection Zones is important potential habitat for the endangered legless Pink-tailed Worm-lizard (*Aprasia parapulchella*). The *Aprasia* restoration project is an example of a multi management strategy which aims to satisfy the ACT Government's requirement to control fuel loads within Asset Protection Zones along the development area, while maintaining and enhancing *Aprasia* habitat condition and connectivity. The project involves developing a rocky grassland restoration technique using prescribed burning, herbicide application, establishment of native grasses and the laying of important surface rock. (*Slides below read left–right, top–bottom.*)

Challenges

Satisfying conservation and planning requirements

- Often conservation and planning objectives do not meet
- The ACT Government has an obligation to satisfy conservation and other management requirements
- The challenge will be to meet requirements of both without compromising one for the other.

Planning within the urban edge

Issues and conflicts

- Zoning areas for different land uses
  - Housing (asset protection zones)
  - Nature reserves
- Different management objectives for each zone
  - -conservation (restoration)
  - bushfire management (prescribed burning/slashing/grazing)
- Often these zoning areas overlap
  - Meaning more than one management objective for the same area

Case study

Restoration of Pink-tailed worm lizard (*Aprasia parapulchella*) habitat in the Molonglo Valley

- Pink-tailed Worm-lizard habitat is in close proximity to development area and OAPZ in the Molonglo Valley.
- These areas are protected by an agreement between the Territory and Commonwealth Governments.

However..

- Current fuel reduction activities within these areas do not comply with conservation of PTWL habitat

Tackling this problem....

- High quality PTWL habitat harbours high levels of native species and low levels of exotics, meaning that fuel loads are naturally low.
- Therefore PTWL habitat restoration is a potential and innovative solution, which may have significant fire management, economic and conservation benefits.

PTWL restoration project

Objective

To develop a rocky grassland restoration technique (i.e. pink-tailed worm lizard habitat) that:

- Satisfies the ACT Government's requirement to control fuel loads within Asset Protection Zones along the Molonglo Valley
- Maintains and enhances the condition and connectivity of PTWL habitat.

This was achieved by:

- Reducing the cover of exotic species (Lowering fuel loads)
- Increasing the cover of native species
- Create habitat through the establishment of native grasses and rock placement
- Increase the occurrence of ants

- Management of grasslands is important not only for conservation, but also for many other uses including bushfire management.
- This project highlights the ways in which conflicting management objectives can be resolved without compromising either conservation or planning requirements.

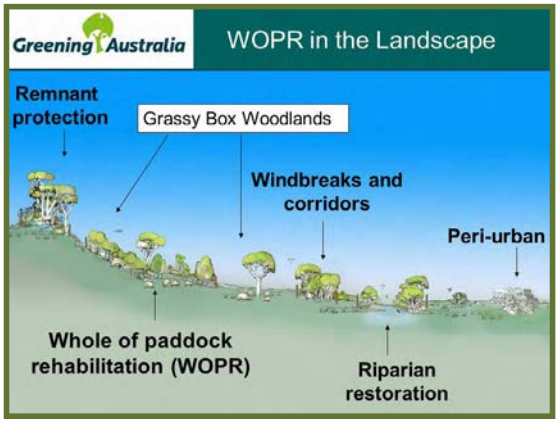
How can other conflicts be resolved using similar approaches?

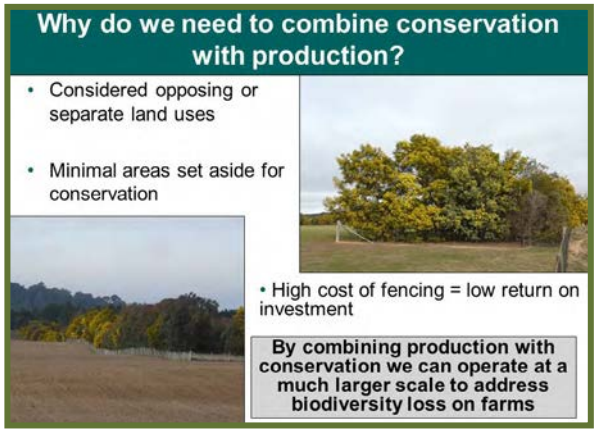
Alice McDougall studied environmental science at the University of Canberra, majoring in Environmental Management. Her interests include habitat restoration, conservation and land management. Over the last 8 months Alice has focused her attention on developing an effective method for the restoration of Pink-tailed Worm-lizard whilst completing her honours thesis at the Australian National University.

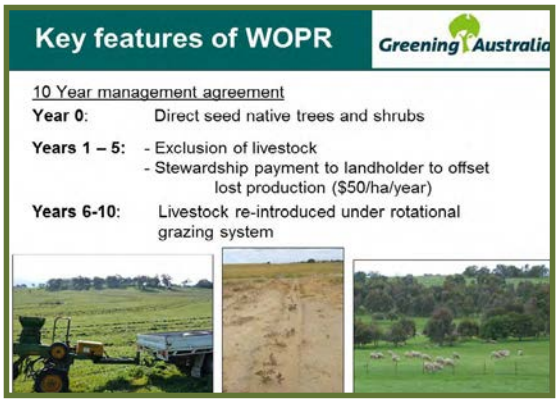
Whole-of-paddock restoration by Greening Australia

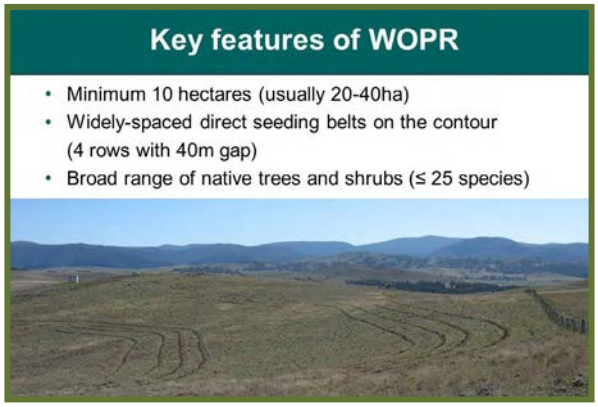
Graham Fifield

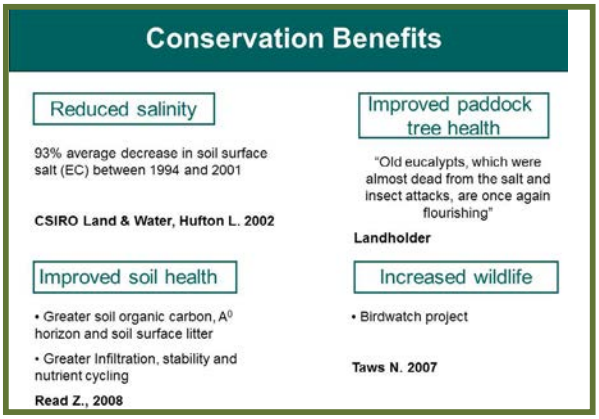
As explained at the Greening Australia website, whole of paddock rehabilitation addresses paddock-scale problems with paddock-scale solutions. It is an incentive programs in which the whole paddock is rested from grazing, and revegetated with little or no fencing. Stewardship payments to farmers compensate for some loss of production while the trees and shrubs are growing. Later the new vegetation provides homes and food for wild species, and shade and shelter for stock. (*Slides read left–right, top–bottom.*)











Biodiversity – Increased wildlife

Birdwatch surveys 2000-2008

Greater number of species with:
- Greater size
- Greater width
- Greater age
- More complex structure
- (Avg 10-15 species per site)

WOPR survey

- 44 bird species recorded in one 30ha site over 4 years
- Incl. 2 vulnerable and 4 declining species

(Greening Australia Capital Region, Canberra Ornithologist Group & CSIRO sustainable ecosystems)

Production Benefits

Improved pasture quality

Hufton L. 2002

Shade and shelter for stock

Supplementary feed source

Fifield G., 2006, 2008

Reduced parasite load

Cenci et al. 2007, Fifield G. 2006, CSIRO Enrich

ANU Supporting Science

"In some areas, natural regeneration is unlikely …In such areas, scattered trees can be planted with re-usable tree guards … Another option is to temporarily exclude livestock from a paddock prior to re-seeding it and resting it for several years – an approach successfully used by Greening Australia in the Canberra region."

Fischer J. et al 2009,
Reversing a tree regeneration crisis

"[WOPR] could have a major role making the scattered tree bottle-neck narrower in the future; as well as providing ecosystem services to the landholder"

"It has the advantage that it can fit within a farm management plan without additional infrastructure, like fences"

Manning A. and Lindenmayer D. 2009
Paddock trees, parrots and agricultural production

How does WOPR add up?

Whole of Paddock Rehabilitation	Windbreak (1 ha = 20 metres wide x 500m)
• Direct Seeding 1km / ha = $200/km	• Direct Seeding 4 rows x 500m (2km) = $400
• Fencing / Re-seeding $100/ha	• Fencing 500m x $3000/km = $1500
• Stewardship payment $50/ha/year x 5 years= $250/ha	
TOTAL = $550 / ha	**TOTAL = $1900 / ha**

Government interest

Demonstration sites were funded by the NSW Lachlan Catchment Management Authority in 2008

NSW Dept. Environment & Climate Change as part of Kosciuszko to Coast in 2009 (K2C)

From 2010-2012, Caring for our Country has provided funding for 1000ha across 50 farms

CARING FOR OUR COUNTRY

LACHLAN CATCHMENT MANAGEMENT AUTHORITY

Kosciuszko2Coast Landholders - Links - Landscapes

Future Research with ANU

ARC Linkage project proposal

Phil Gibbons, Nicky Munro, Richard Greene, Don Driscoll, et al (ANU)
David Freudenberger, Jason Cummings, Graham Fifield (Greening Australia)
ACT Government

- Landscape & spatial priorities
- Understorey restoration
- Structure and composition of trees and shrubs
- Effectiveness compared to linear plantings
- Etc.

Summary

1. **Grass roots initiative & farmer friendly**
2. **Guided by science and latest research**
3. **A novel and cost-effective approach**
4. **A landscape transformation tool for a Threatened Ecological Community and national environmental policy targets**

Graham Fifield is a senior project manager at Greening Australia Capital Region with seven years' experience in environmental rehabilitation. During this time he has delivered a range of incentive funding projects on private and public land. Graham has worked extensively across the Southern Tablelands, South West Slopes and Central West regions of NSW. He has visited projects in other states and understands many of the regional challenges facing the industry. Graham has recently finished a three-year program of grassland restoration trials and has been involved with sowing grasses, herbs and forbs. He is acutely aware of the challenges around seed collecting for multiple projects, short timeframes and within genetic considerations.