HOTSPOTS FIRE PROJECT

Case Study: Mosaic burning to bring back vigour

Like many other land managers, Rainer loves his work and wants the best for the bush and the community.

Man on a mission: a resource manager's experience

When it comes to using fire for biodiversity, Rainer Rehwinkel goes above and beyond the call of duty to help some of the grassy treasures of the Southern Tablelands. Rainer has been tackling fire in a couple of areas…

In the reserve

Brooks Hill is a former crown reserve that Rainer has been working in and learning from for ten years. An important area of dry sclerophyll forest and box-gum woodland, Brooks Hill was established as a reserve under a voluntary management trust. Through his role as a Senior Threatened Species Officer for the New South Wales Department of Environment and Conservation, Rainer has supervised an ecological burn in the reserve and has been monitoring the 'before and after' effects of this fire.

BROOKS HILL IN BRIEF

Location: 7 km south west of Bungendore, New South Wales

Area: 71 ha

Mean annual rainfall: 650 mm

Land use: Crown land till 1990 (probably only grazed intermittently), now gazetted as a reserve for environmental protection and passive recreation

Vegetation types: Box-gum woodland (Endangered Ecological Community NSW Threatened Species Conservation Act), dry sclerophyll forest, small patch of secondary grassland

Landform and soil types: Undulating hills, footslopes, Paleozoic sediments, colluvium

Three good reasons to burn

Brooks Hill is a favourite with bird watchers and other nature lovers. Helped along by community volunteers who've erected fencing and removed rubbish and weeds, the reserve is home to several threatened species, including birds such as the speckled warbler and diamond firetail. The reserve's box-gum woodland supports a diversity of species, including lots of orchids, lilies and daisies in the ground layer.

In recent years, wildfire has only burnt limited areas of the site. According to Rainer, strategic patch burning may offer a useful tool for promoting ecological diversity (ie. burning limited areas of a site in rotation, over a series of years). Unburnt areas can act as refuges for species not able to tolerate fire, and different species can utilise different post fire stages of development.

A few years ago Rainer coordinated an ecological burn with the local bushfire brigade. The Bungendore Volunteer Rural Fire Brigade was keen to assist and in their planning and discussions with Rainer, realised that a planned burn could do three things **(1) deliver ecological benefits, (2) reduce the fire hazard** and **(3) provide an opportunity for fire brigade volunteers to gain operational training and ecological understanding.**

Planned burn at Brooks Hill; a team effort

Nature Conservation Council of NSW
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But before lighting up, some careful planning needed to happen. The Bungendore Volunteer Rural Fire Brigade obtained a Section 91 licence* which included some special conditions. For instance, only a small area could be burned (1 hectare) and important habitat features would need protecting. The areas around big old trees, stumps and logs would be raked to protect them from the fire.

On the day of the burn (Spring 2004), five enthusiastic brigades turned up - some 80 fire folk and six trucks. They were only too keen to help. The day was a great success.

The ecological results of the burn are less clear, but it's only early days. Eighteen months on, Rainer's monitoring has revealed some resprouting shrubs, particularly leafy bitter-pea, but very few seedlings or resprouting grasses. For now, he can only speculate as to what might be happening. There are lots of possible factors at work - for instance, the area has been in drought since the fire and rain may be needed to stimulate germination.

In the travelling stock reserve

Rainer has also been overseeing fire management at Gundary Travelling Stock Reserve. Since at least the last ice age, this area has been part of an open grassland dominated by kangaroo grass and a high diversity of forbs. It is also home to the threatened striped legless lizard and one of the largest known populations of button wrinklewort (a threatened plant).

The ranger for the Goulburn Rural Lands Protection Board, which manages the reserve, contacted Rainer about using fire as a way of managing the fuel load. Rainer arranged for a Section 91 licence, drawing up a series of conditions designed to protect the threatened species (eg. only small 2 hectare patches could be burned at a time). The reserve now supports a mosaic of different post fire patches and in seasons following the patch burns the forbs are flowering vigourously.

GUNDARY GRASSLANDS IN BRIEF

Location: 5 km south of Goulburn, New South Wales

Area: 60 ha

Mean annual rainfall: 650 mm, mostly in winter

Land use: Travelling Stock Reserve with occasional grazing, conservation

Vegetation types: Natural temperate grassland (Endangered Ecological Community Commonwealth EPBC Act)

Landform and soil types: Undulating hills, footslopes, Paleozoic sediments, colluvium

Gundary Travelling Stock Reserve. The area in front of Rainer has been burnt.

WHAT LAND MANAGERS CAN DO

While some areas may have experienced too much fire, we may be able to help others by re-introducing fire. Some communities, particularly grassy communities like those described here, rely on the right frequency and type of fire to stay vigourous and diverse.

Don't burn the whole place at once. Allow some unburnt refuges for species and work together to provide a mosaic of vegetation in different post fire stages of development.

The efforts of Rainer, the Rural Lands Protection Board rangers and the local volunteer brigades highlight the value of working together for a range of benefits.

** Issued by the NSW Department of Environment and Conservation, Section 91 is a licence to harm or pick threatened species, populations or ecological communities or damage habitat under the Threatened Species Conservation Act (1995).*

Acknowledgements

Thanks to Rainer Rehwinkel

Reading

• Sharp, S., Dorrough, J., Rehwinkel, R. and Eddy, D. (2002) *The Grassy ecosystem management kit: a guide to developing conservation management plans*. Environment ACT, Canberra

Further Information

The Hotspots Fire Project is managed by the Nature Conservation Council of NSW, with funding from the New South Wales Government through its Environmental Trust.

For further information contact the Project Coordinator on (02) 9279 2466, email hotspots@nccnsw.org.au or visit www.hotspotsfireproject.org.au.

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