HOTSPOTS FIRE PROJECT
Case Study: Returning fire to grassy woodlands

Jackie's main interest is managing for grassy landscapes.

Burning for diversity: a landholder's experience

Jackie Miles is a quiet advocate of using fire for biodiversity in the Bega Valley. Her own careful use of fire is helping to breathe new life into the grassy woodland on her property.

For nature & lifestyle

Like many landholders, Jackie loves the lifestyle and natural values of her property 'Wimbirra' and the surrounding area. These days, she doesn't keep livestock on the property, instead deriving an off farm income through her work as a botanist. In her spare time, she enjoys putting some of her management ideas into action on Wimbirra.

Jackie believes land managers may need to re-introduce fire to help revitalise the area's grassy woodlands. It is likely local Aborigines used fire in some of these productive grassy areas. As part of her work, Jackie undertakes vegetation assessments on private property in bushland protected under Voluntary Conservation Agreements. Where appropriate, she recommends landholders re-introduce fire in a safe and responsible way. However, this is proving easier said than done; the numerous practical and psychological barriers to using fire often present a major hurdle.

Back on her own property, Jackie wants to maintain the openness of areas that were once kept open by grazing. She is using fire to ensure there is light and space for a diversity of grasses and herbs to thrive. She also tries to keep the weeds at bay. When conditions allow, Jackie applies fire somewhere each year, burning in a mosaic, but never if it looks like the season may be too dry to allow the ground layer to bounce back quickly after the fire.

'WIMBIRRA' IN BRIEF

Location: Brogo, about 15 km north west of Bega, in the Bega Valley, New South Wales

Area: 40 ha

Mean annual rainfall: 800 mm

Land use: Conservation / lifestyle

Vegetation types: Bega wet shrub forest and grassy red gum woodland

Landform and soil types: Undulating to steep mostly south facing slopes, granite-derived sandy loam, not very fertile

Once were grassy…

The Bega Valley's grassy red gum woodlands are a threatened ecological community largely restricted to private property and road verges. Since European settlement, much of the woodlands have been converted to grazing for dairy and beef production. The last 30 years, however, have seen a rise in rural residential subdivision, taking much of the more marginal farming land out of production. New settlers from urban areas now make up a substantial proportion of the region's population.

"For me, good preparation is the key to a stress-free burn - I burn to slashed and raked breaks or a natural break and keep plenty of water on hand."

The last major wildfire swept through the area in 1952 causing substantial damage to property and some loss of human life. This event looms large in the memories of the area's older residents.

Since this fire, planned burns have generally been aimed at managing fuel. In the past, fire tended to be used in the hilly, shrubby surrounding country, rather than on the grassy plains. Nowadays, even this surrounding country receives much less fire. Jackie speculates that in the past, fires would

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have occasionally come down from the hills and burnt any native pasture that was flammable at the time. Now part of a more closely settled and litigation conscious community, many local landholders appear reluctant to carry out any sort of planned burns. They perhaps fear the fire will escape or feel they lack the experience to burn.

Lack of fire in the remaining grassy woodlands has probably contributed to losses in grass and herb diversity and a transition to dense stands of shrubs and wattles in some areas. The changes could spell trouble for local plants and animals which have enjoyed a long association with a diverse, grassy understorey.

A steep learning curve

When it comes to managing fire, Jackie uses science based principles to guide her. She knows that the reality of using fire is not always easy, nor does it always produce clear definitive results. Wimbirra includes and is adjacent to extensive forest areas. Jackie is therefore extremely cautious in her use of fire, so much so that getting a fire going - and keeping it going - can be a challenge. For now, Jackie prefers to burn on cool, still afternoons, even though she realises that burning in slightly windier conditions may afford better success.

In areas of her property dominated by kangaroo grass, Jackie has applied four burns at different intervals since 1988. She has noticed native legumes coming up in this area in greater abundance than in unburnt areas, including one species of legume which is uncommon in the area (see photo). And while the burnt area records a similar overall number of plant species to a grazed, unburnt area next door, the native species are far more abundant in the burnt area and there are a lot less weeds. On other parts of Wimbirra, the results have been less clear cut. Blady grass and bracken also appreciate being burnt. As a result, these 'not so desirable' native plants have come back very thickly soon after a fire.

Zornia dyctiocarpa; a rare legume now coming up in the burnt area

While not all of Jackie's burns have prompted obvious improvements in ground layer diversity, her use of fire is managing to bring about some marked improvements in the condition of areas dominated by kangaroo grass. Most have offered good weed control - at least in the first season following the burn. They have also helped to control the balance between native shrubs and grasses in these areas where native shrubs might otherwise take over. "A certain amount of tree and shrub regrowth is perfectly okay", says Jackie. "But wall-to-wall black wattle, blackthorn or dogwood shades out grasses and herbs and may be the last straw for some native plants which have managed to hang on through two centuries of grazing."

WHAT LAND MANAGERS CAN DO

Make a note of the fire frequency intervals recommended for the vegetation types on your property and think about actions you could take to bring fire frequency in line with the recommendations.

Don't burn the whole place at once. Aim to produce a mosaic of vegetation in different stages of post fire development. Jackie's efforts highlight some of the challenges of maintaining grassy woodlands. Although fire is important for maintaining a diverse, grassy understorey, cautious burning can mean unavoidable tradeoffs in fire intensity, extent and ecological success.

Keep a record of when fires occur and what areas they cover, and monitor what happens to plant and animal species in the years after fire. Fire planning is partly a matter of observation and responding to the needs of the land.

Themeda australis, better known as kangaroo grass

Acknowledgements

Thanks to Jackie Miles

Reading

- Miles, J. (2005) *Recognition and management of Endangered Ecological Communities in the south east corner of NSW*. Southern Rivers Catchment Management Authority, Bega. (limited print run, may need to try libraries)

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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