

OVER the last 25 years I have managed fire access tracks on a number of private landholders' properties including our own (of 6 ha) in the Shire of Mundaring. In that time, the appreciation of native plants and the ecosystem services they provide has extended to the recognition of the erosion control role some of them can play on firebreaks in hilly areas. 'Firebreak management' is now for me an essential part of long-term bushland regeneration and management.

Where once I aimed to remove all vestiges of vegetation from the firebreak, I now use selective pressure to foster the survival of small native plants there. These include our native grasses: eg. *Neurachne alopecuroidea*, Foxtail Mulga Grass; *Amphipogon debilis*, Greybeard Grass; *Microlaena stipoides*, Weeping Grass; and *Tetrarrhena laevis*, Forest Ricegrass. Others include small, grass-like plants such as *Laxmannia squarrosa*, Pin-cushion Grass, small triggerplants, *Stylidium* spp., and *Conostylis* spp. such as *C. setigera*, *C. setosa* and *C. caricina*. If it is native, small and evergreen, or is eaten down by kangaroos, then it can be managed for the purpose of holding soils on hillside firebreaks.

The chosen species do not include dense sedges such as *Mesomelaena stygia* or *Tetraria octandra*, or bulky shrubs which are too difficult to manage to keep low on firebreaks. These can be removed by spot spraying of a Glyphosate-based herbicide and a brushcutter and rake when the firebreaks are mowed over at the end of November each year. Alternatively they can be transplanted, with a generous clod of soil attached, in early winter, preferably while it is raining to minimise stress due to drying of roots. Even fairly sensitive plants such as *Isopogon dubius* and *Grevillea bipinnatifida* have good survival rates (in the order of 80%) when treated carefully, and are an invaluable ready-made resource for assisting in regeneration in degraded areas elsewhere on your property. Care needs to be taken, of course, to

## PRACTICALITIES

### MANAGEMENT OF HILLS FIREBREAKS

by  
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*Opercularia vaginata*

ensure that dieback is not active in the areas you are taking the plants from.

I am assisted in my annual mowing of the firebreaks by a combination of rabbits and kangaroos that are particularly partial to my favourite native grass, Foxtail Mulga Grass. Fortunately, on our place it is mainly the kangaroos that act as live-in firebreak mowers. Another edible firebreak plant appears to be *Opercularia vaginata*, which has a tendency to grow into a mat. The less delectable grasses such as Greybeard Grass and Forest Ricegrass will require active management using a brushcutter. Over time the chosen plants will colonise the firebreak from seed heads left to develop to maturity. With artificial selection pressures a firebreak can be made into a low maintenance disturbance area with its customised native plant community.

To assist in soil stabilisation on firebreaks I also use erosion control trenches to harvest water in a controlled manner off into adjacent

bushland at 5 to 10 m intervals down a hillside. Where there is only infrequent foot traffic, then trenches to a depth of about 15 cm are sufficient if they are angled at about 60° to the line of maximum slope. The optimum trench slope is one where the silt deposition is matched by the silt removed by erosion and deposition beyond the end of the trench.

The actual soil conditions on a property will require a little experimentation with the general orientation of the trenches to ensure that they neither silt up too frequently nor develop into a gully. Care is also needed to ensure that soil from dieback areas is not carried to dieback-free areas on your property. This risk is minimised if the trenches are made when the soil is dry.

Trenches can be made by hand, using mattock and spade. Alternatively, a tractor-mounted scraper blade can be used to trench and mound. Follow up work with hand tools may be required to firm down the soil of the mounds and to carry the lower end of the trench into nearby bushland to ensure that the water harvest infiltrates into the soil to benefit plants. The size of your land-holding will also influence how far you will want to go to minimise transient damage to bushland from your erosion-control trench construction.

With the above-described firebreak system in place for a couple of years the maintenance effort required is low and can provide a side benefit of feed to native fauna such as Brush Wallabies and Grey Kangaroos. The system provides a better balance between the risk of fire damage to bushland and built structures, and the certainty of erosion and water-course degradation, than rigidly following the bare, mineral-earth recommendation for firebreaks.

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