

The Victorian Volcanic Plains Grassland – past, present and future

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Summary: The Grasslands of the Victorian Volcanic Plains have been replaced with introduced pastures and crops since European settlement with the loss of many plant and animal species. What remains, on public and private land, has high conservation value and urgent protection.

Keywords: grassland, native, Australia, conservation

Introduction Prior to European settlement in the 1830s the grassland of the Victorian Volcanic Plains covered 21,000 km² of the plains west of Melbourne. European agricultural practices have severely impacted upon this grassland and only a few remnants remain of what was described in 1836 as “... *enchantingly beautiful – extensive rich plains all around with gently sloping hills in the distance, all thinly wooded and having the appearance of an immense park. The grasses, flowers and herbs that cover the plains are of every variety that can be imagined...*” (Lunt *et al.*, 1998). Although the grassland remnants are poorly understood and threats remain, there is a growing recognition of their intrinsic value and the need to protect them.

Past These basalt plains were formed by five million years of volcanic activity. The grassland flora contained over 550 species of grasses, lilies, daisies, orchids and other forbs (Conley and Dennis, 1984). It was lightly grazed by kangaroos and emus and was habitat for specialised mammals, birds and reptiles. It was also home to Aborigines for over 20,000 years. One of the first European settlers reported “*a region more extensive than Great Britain, equally rich in point of soil, and which now lies ready for the plough in many parts, as if specially prepared by the creator for the industrious hands of Englishmen*” (Lunt *et al.*, 1998). Within 20 years, livestock had spread across the plains. Immediate impacts included displacement of Aborigines, loss of bird and mammal species, destruction of lichen layer, soil erosion, weed invasion and the first signs of salinity. Cultivation, cropping, introduction of the rabbit, swamp drainage, reduction in fire frequency, fertiliser use and closer settlement fragmented the grasslands and led to the extinction of many plant species.

Present High quality grassland remnants now total less than 3,000 ha, mostly in small road, railway and cemetery reserves, and still under threat. Larger areas, invaded by introduced species, can still be found on many private properties, particularly on non-arable, stony areas (Table 1). Some are valued by their owners, others are at risk as financial pressures increase and technology allows access to areas previously considered too rocky to plough. All are likely to suffer ongoing degradation.

Table 1. The flora diversity of three privately owned grasslands on the Victorian Volcanic Plain

Site	Native species	Introduced species
Hamilton	47	28
Darlington	55	23
Birregurra	21	15

Management options to maintain biodiversity are poorly understood and seldom studied. Government and private organisations and individuals are now working to save grassland remnants through grazing management research, flora and fauna surveys, revegetation programs, seed collection and establishment research and farmer education.

Future Although adapted to the climate and low fertility soils, the perceived economic value of the grassland is low compared with well-fertilised European pastures. Farmers will need financial incentives and management skills to retain their grassland remnants. Research contributing to the understanding of financial and management issues confronting grassland farmers has begun and will need to be ongoing.

Conclusions This once vast, species-rich grassland has been reduced to fragments and is in great danger of disappearing altogether. Much of the damage occurred so soon after European settlement that it is hard to know exactly what was lost. Only through coordinated research and extension activities and financial assistance to grassland farmers can the remnants be preserved. There are promising indications that this is beginning to occur.

References

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