

The role of fences in urban bushland

The City of Bayside is approximately 37 square kilometres with 293 hectares of open space.

Nineteen of these hectares comprise of the inland bushland network (see Table 1 below). Currently some of the higher quality/vulnerable areas of heathlands, such as wildfire and ecological burn sites, are fenced to protect the heath. These bushlands make up less than 6.5 percent of Bayside's open space with approximately two percent fenced to protect vulnerable species.

Heathland	Size (hectares)
Balcombe Park	4.18
Bay Road Heathland Sanctuary	2.17
Cheltenham Park	2.98
Donald MacDonald Reserve	6.51
George Street Reserve	2.1
Gramatan Avenue Heathland Sanctuary	0.3
Long Hollow Heathland	1.12

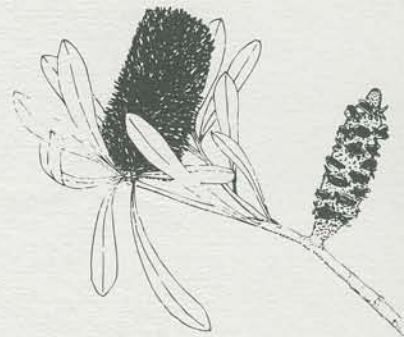
Some of these fenced areas contain the last traces of significant flora and fauna species within Bayside. Nine of these fauna species are considered **locally critical**¹, four of these species are **locally endangered**¹, ≥18 species are listed as **locally vulnerable**¹, while the Grey-headed Flying-fox is listed as a threatened species under the Victorian Flora & Fauna Guarantee Act 1988 (see Table 2 below).

Table 1, Heathland Size.

Species	Status
Dusky Moorhen ²	Locally Critical
Red-rumped Parrot	Locally Critical
Laughing Kookaburra	Locally Critical
Striated Pardalote	Locally Critical
Yellow-rumped Thornbill	Locally Critical
Yellow Thornbill	Locally Critical
New Holland Honeyeater	Locally Critical
Richard's Pipit	Locally Critical
Red-browed Finch	Locally Critical
Common Bronzewing	Locally Endangered
Superb Blue Wren	Locally Endangered
Flame Robin	Locally Endangered
Eastern Yellow Robin	Locally Endangered
Black-shouldered Kite	Locally Vulnerable
Brown Goshawk	Locally Vulnerable
Australian Hobby	Locally Vulnerable
Nankeen Kestrel	Locally Vulnerable
Galah	Locally Vulnerable
Sulphur-crested Cockatoo	Locally Vulnerable

Species	Status
Tawny Frogmouth	Locally Vulnerable
Spiny-cheeked Honeyeater	Locally Vulnerable
Yellow-faced Honeyeater	Locally Vulnerable
Singing Honeyeater	Locally Vulnerable
White-naped Honeyeater	Locally Vulnerable
Eastern Spinebill	Locally Vulnerable
All species of Microbats	Locally Vulnerable
Rakali ²	Locally Vulnerable
Marbled Gecko	Locally Vulnerable
All Skinks except the Common Garden Sun Skink	Locally Vulnerable
All species of frogs	Locally Vulnerable
Grey Headed Flying Fox	Threatened species under the Victorian Flora and Fauna Guarantee Act 1988.

Table 2, Significant Species within Bayside



Habitat quality will not only be directly damaged by the destruction of heath species from the implementation of paths, it will also be negatively affected with an increase of weed species, from edge effect, soil compaction and a change in soil biota.

Edge effect promotes weed growth through disturbance and the spread of weed seed from people, animals including dogs and foxes, and wind and water. Edge effect not only increases the risk of weed infestation on tracks but also some distance either side of a track into the vegetation. Full-scale edge effect has been shown to alter the edge of vegetation anywhere from nine metres up to 64 metres.³

Microclimate changes can also be attributed to the edge effect. It is likely that changes would occur to wind speed, soil temperature, air temperature, available light and a change in soil moisture content. These changes are likely to favour more tolerant weed species.

An edge effect can also be responsible for a reduction in the abundance of indigenous fauna due to increased pressure from pest animals, both domestic and non-domestic including cats, foxes and dogs. Pest animals generally utilise formed pathways to move between areas of heath giving them a wider hunting range.

Soil compaction decreases appropriate site conditions for sensitive indigenous flora species while allowing hardier weed species to proliferate. Soil compaction can also lead to a change in soil biota through increased water run off and erosion. These changes not only increase the likelihood of suitable weed habitat but also decrease the abundance of invertebrates which play an important role as a food source for larger species and as consumers of organic matter.

A number of species are now considered extinct within the City of Bayside due to land degradation and loss of habitat from human activities. Species that are extinct include kangaroos, wombats, quolls, bandicoots, koalas, various ground-dwelling birds, reptiles and small mammals such as the Antechinus, a small carnivorous marsupial. Some species like the Antechinus were present until quite recently, less than 10 years ago.

To prevent further loss of species we should not only be keeping existing fences but be fencing off larger areas of the heathlands and protecting the flora and fauna that is still intact before it is too late.

Matthew Hutchins

Citywide Bushland Manager
Bushland Crew 1

References

Cropper, S. (1996) *Bayside's Flora and Fauna - A compilation of surveys*.
Botanicus Consulting

Rowley, L., Edwards, R. & Kelly, P. (1993) *Edges - Their Effect on Vegetation and Wildlife*. Retrieved June, 3, 2009, www.dpi.vic.gov.au

¹ Cropper 1996

² Not commonly found in heathlands

³ Rowley *et al.* 1993