The Six 'Lone Pines' of Jackson's Creek and Their Many Descendants

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In 1942 *The Victorian Naturalist* featured an article by W.H. Nicholls titled 'The Lone Pines of Jackson's Creek' (Nicholls 1942). He gave an account of a small colony of three mature White Cypress Pine *Callitris glaucophylla* syn. *Callitris columellaris* in a gully on the brow of the escarpment, which overlooked the creek about 100 metres below in what is now Sydenham Park. Subsequent discoveries show that he missed three more mature trees at the bottom of the slope, closer to the creek. A recent edition of this journal reported on an exciting find of a colony of remnant *C. glaucophylla* at the CSIRO Maribyrnong site (Adams 2000). In that article she reported that the Jackson's Creek colony 'has declined to only one original tree', adding to the earlier depressing conclusion of Willis' 1970 assessment that this population was 'now almost extinct' (Willis 1970). Happily, this is not the case.

Of the six remnant trees present in 1942 only one has died – the photo that accompanied Nicholls article shows it with two tiny crowns of foliage, and it is now a whitened skeleton (Fig. 1). But the other five are alive and well, and still producing cones (Figs 2 and 3). Nicholls' original 'lone pines' have also had their future chance of survival enhanced. The remaining five old trees in Sydenham Park were surrounded with wire netting, rabbit-proof fencing by staff of the National Park about 1990, with permission from the then Keilor Council. They were fenced into three enclosures. One, near the escarpment, about 100 metres east of the boundary of Organ Pipes National Park, contains two living trees and the dead one; another down by the creek contains another two trees, and a third, about 110 metres further east close to the creek, has one tree. The Friends group has undertaken considerable work at these three sites, to remove Boxthorn, Prickly Pear, Artichoke Thistle, Nightshade and other weed invasions in the decade since the enclosures were fenced.

L.A. Pederick, of the Department of Conservation Forests and Lands, took a core sample from two of the trees in 1985 in order to count the tree rings. His account does not indicate which two of the trees were selected. He experienced problems in obtaining an accurate estimate of age and was unable to sample right to the central pith 'because of the high density and hardness of the wood, eccentricity of cross-sec-

Fig. 1. 'The Sentinel Pine of Jackson's Creek.' This tree is now dead. Photograph by W.H. Nicholls in 1942.

Fig. 2. 'Murray Pines (*Callitris glauca*) at Jackson's Creek.' Photograph by W.H. Nicholls in 1942.

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Table 1. Girth and estimated height of the six *C. glaucophylla* at the Sydenham site, March 2000. Key: GGrd, girth at ground level (mm); G1.5, girth at 1.5 m (mm); Ht, estimated height (m). * Height of side branch, as main trunk snapped off at about 7 m.

Tree	GGrd	G1.5	Ht
Upper: skeleton	1190	910	6
Upper: east	1340	1250	9
Upper: west	1415	1130	12
Lower: east	2010	1530	11*
Lower: west	2550	2180	15
Solitary	1650	1540	9

tion of the trunks, and decay in one of them. Furthermore, interpretation of age was difficult due to the slow growth, frequent indefinite ring formation, and apparent formation of some false rings.' However he managed to count 77 rings in one, omitting 8 cm of rotten wood near the core, and 105 rings in the other, which did not penetrate to the pith. He estimated their age as a minimum 120 years, and concluded, 'on the basis of the number of rings sampled in the trunks of two of the trees, and the difficult terrain on which they are growing, I am of the opinion that the four trees are native to the site' (Pederick 1985).

The girth and height of each of these six old trees, measured in March 2000 (Table 1), indicate considerable age, especially the two in the lower enclosure. Estimates of age obtained by Adams for the Maribyrnong population in which the trees have similar girths (Adams *pers. comm.*) postulate an age of about 220 years for one tree, which has a girth of 2.5 m at 1.5 m from ground .

When the Organ Pipes National Park was established 2 km upstream in 1972, the founders of the Friends group knew of this nearby population of White Cypress Pine. They assumed the trees had little hope of survival outside a protected area. With this in mind, the group used seed from the Sydenham Park remnants to establish a new population of *C. glaucophylla* on suitable soils within the newly established National Park. A recent survey by one of us (DA) discovered 71 trees scattered over the park, at various stages of maturity (Akers 1999) (Fig. 4).

The population of planted *C. glaucophylla* in the National Park is in good condition

Fig. 3. Two of the old *Callitris* in Sydenham Park on the floor of the valley near Jackson's Creek. Photo R. Bender (March 2000).

and has in fact undergone a degree of natural regeneration. In several areas of the park, staff have undertaken a program of rabbit-proof fencing of small areas, and subsequent eradication of rabbits; one of these rabbit-free areas is on the main spur just below the park Visitor Centre. In 1995, Friends of Organ Pipes members Carl Rayner and Ian Taylor surveyed this spur, which has nine mature seed-producing *C. glaucophylla* (Fig. 5), and they discovered a considerable number of new seedlings (Bender 1996).

Shortly after, one of us (RB) commenced a regular monitoring program of the growth and survival of these seedlings. Over 40 of these seedlings had wire netting tree guards placed around them in the hope of protecting them from the Eastern Grey Kangaroos and Black-tailed Swamp Wallabies that have taken up residence within the National Park since 1989. Around 35 seedlings still survive, the tallest now being about 80 cm.

There are now three generations of White Cypress Pine along the creek – the old

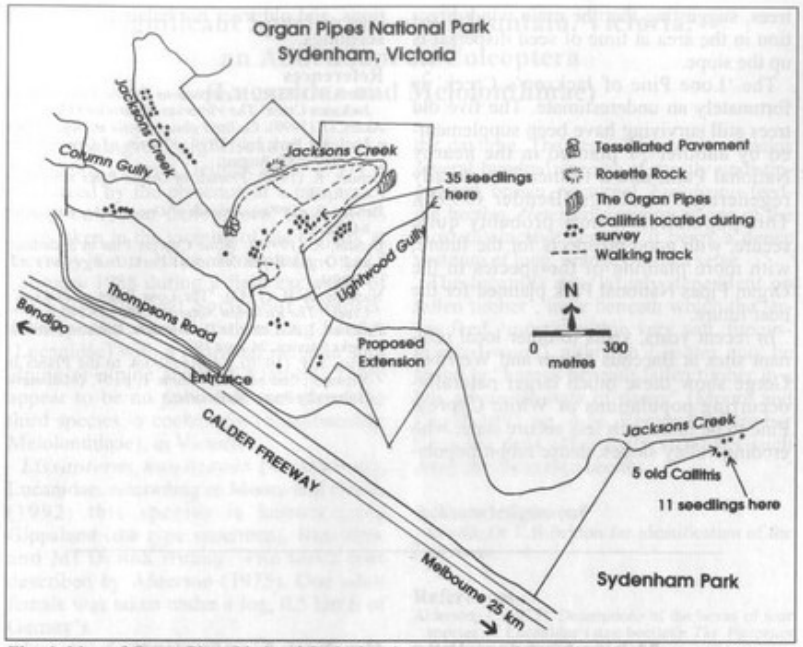

Fig. 4. Map of Organ Pipes National Park showing survey results and location of the old *Callitris* trees.

Fig. 5. Regenerating *Callitris glaucophylla* in a rabbit-proof enclosure on the main spur near the Visitor Centre, Organ Pipes National Park. Photo R. Bender (1997).

specimens in Sydenham Park, the propagated trees planted in the 1970s around the National Park, and a new generation of self-generated seedlings within a rabbit-proof fenced enclosure on one spur. No seedlings are evident around the other 62 trees, though quite a few are producing seed-cones. A project to install exclusion fencing around these other trees is to start soon, once grant funding is obtained for materials.

In 1998, at a working bee in the upper enclosure at Sydenham Park (containing the trees reported by Nicholls), one member, Claude Odorisio, mapped 11 seedlings that had established in the newly cleared scree slope of the gully (Bender 1999a). These are all uphill of the two mature

trees, suggesting that the main wind direction in the area at time of seed dispersal is up the slope.

The 'Lone Pine of Jackson's Creek' is fortunately an underestimate. The five old trees still surviving have been supplemented by another 71 planted in the nearby National Park, and a further 35 naturally regenerated seedlings (Bender 1999b). This population is now probably quite secure, with good prospects for the future, with more planting of the species in the Organ Pipes National Park planned for the near future.

In recent years, visits to other local remnant sites at Bacchus Marsh and Werribee Gorge show these much larger naturally-occurring populations of White Cypress Pine to be in a much less secure state, with eroding valley slopes, dense rabbit populations, and old trees not balanced by young seedlings.

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White Cypress Pine – the New Generation

There are few occasions when it is nice to be proved wrong, but the note by Bender and Akers (2000) describing five surviving 'lone pines' of Jacksons Creek, rather than the single tree I referred to (Adams 2000), is one such occasion. The tree girths and age estimates they report for the Jacksons Creek trees, and those of the Maribyrnong population, fit well with those for the trees at Bacchus Marsh, and the population overlooking the Werribee Gorge. Some individuals at Werribee Gorge have girths in excess of 300 cm GBH (girth at breast height) and ages probably in excess of 300 years. As more of the scattered data on the White Cypress Pine populations around Melbourne come to light, a much clearer picture of the species' pre-European distribution and importance in the regional flora is emerging.

The expansion of the White Cypress Pine population from a state of 'almost extinction' to one of active regeneration and security, should serve as an encouraging example of the contribution to long-term species conservation which can be achieved by dedicated community groups. It will be a great day for local conservation, and restoration of the regional flora, when all of the White Cypress Pine populations have a new generation of trees and the same healthy future as the 'Lone Pines of Jacksons Creek'.

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