TREE POPULATION SURVEY

5.1 TREE POPULATION SUMMARY

5.1.1 CENTENNIAL PARKLANDS OVERVIEW

Across the four main areas of Centennial Parklands (including Centennial Park, Queens Park, Moore Park and approximated totals for Moore Park Golf Course and E. S. Marcs Field), the total tree population is over 11,300 individual trees.

This total population includes over 115 different tree species and at least 59 genera, although the largest variety of specimens and species are concentrated within Centennial Park.

5.1.2 CENTENNIAL PARK

The current tree population of 7881 in Centennial Park represents the most diverse mix within the Parklands with at least 95 different species within 51 genera.

In spite of this apparent diversity of species, the population is numerically dominated by only two main tree species:

Melaleuca quinquenervia; 2307 specimens and *Pinus pinaster*; 2086 specimens. These make up approximately 56% of the total population. Although visually dominant within the five to six main areas in which these closely planted Maritime Pines and Melaleucas occur, they only form part of the broader palette of trees associated with Centennial Park - in particular, the large figs, oaks and Norfolk Is. Pines that dominate Grand Drive and that are distributed throughout the park.

The ten dominant species in the park account for approximately 83% of the trees -

Melaleuca quinquenervia	2307	29.3%
Pinus pinaster	2086	26.5%
Ficus rubiginosa	821	10.4%
Casuarina cunninghamiana	346	4.4%
Quercus ilex	334	4.2%
Erythrina x sykesii	235	3.0%
Eucalyptus microcorys	115	1.5%
Araucaria heterophylla	112	1.4%
Phoenix canariensis	111	1.4%
Ficus macrophylla	100	1.3%

Given the concentration of the two dominant tree species in only a few areas, their current condition and status and the implications for tree management and future planting should be considered separately to the remaining visually dominant trees. As a proportion of the remaining trees (3488 trees), excluding the Maritime Pines and Melaleucas, these eight species represent the following proportions of the population -

Ficus rubiginosa	23.5%
Casuarina cunninghamiana	9.9%
Quercus ilex	9.6%
Erythrina x sykesii	6.7%
Eucalyptus microcorys	3.3%
Araucaria heterophylla	3.2%
Phoenix canariensis	3.2%
Ficus macrophylla	2.9%

These total 2174 trees out of the current total count of 7881 trees.

The main issue arising from the analysis of this tree population is that a very large proportion of these numerically and visually dominant trees are in the mature to over mature age category and many are in a state of reduced vigour and decline.

5.1.3 QUEENS PARK

Approx. 463 trees. Generally a very limited species mix of only: 25 species among 14 genera.

Dominant species in Queens Park are:

Various *Acacia spp.*	107	23.1%
Erythrina x sykesii	80	17.3%
Monotoca elliptica	80	17.3%
Melaleuca quinquenervia	66	14.3%

These few species make up 72% of the total population in Queens Park. To some extent, this is deceptive as the smaller growing *Acacia spp.* and *Monotoca elliptica* are restricted to few areas within the park. Apart from the Coral Trees, the other large growing species appear to dominate the park, particularly the figs, yet these make up only a small proportion of the population in terms of tree numbers. Of these the most frequently occurring are as follows:

Ficus microcarpa var. hilli	25	5.4%
Ficus rubiginosa	25	5.4%
Lophostemon confertus	11	2.4%
Quercus suber	11	2.4%
Araucaria columnaris	9	1.9%
Ficus macrophylla	9	1.9%
Araucaria heterophylla	6	1.3%
Eucalyptus maculata	6	1.3%
Quercus ilex	6	1.3%

The potential problems arising out of this mix of tree species are:

- The reliance on only a small number of large tree species, particularly the figs and the Corals - with a relatively short prospective life span and tree hazard issues. Among the figs on this site, at least the large, healthy (and therefore dominant specimens) have good prospective life spans over the next 50 years, however at least half of the total fig population probably has only a 40 year remaining life expectancy.
- The largest single area of vegetation cover (*Acacia spp.* and *Monotoca elliptica* on the ridge adjacent to Queens Park Rd.) is dominated by species with a likely lifespan of only another 20 years.

Possible options for this second situation may be to either reinforce (interplant with the same species so as to cycle this type of vegetation on a more or less regular basis OR interplant among the existing *Acacia spp.* and *Monotoca elliptic* mix with longer lived species such as figs. Such an approach would change the character of this area over the longer term but help to accommodate the eventual removal of a significant proportion of the steadily declining fig population. In the mean time, other marginal areas (slopes of this and adjoining ridges could be planted out with a similar *Acacia spp.* & *Monotoca elliptic* mix to continue this style of planting character.

5.1.4 MOORE PARK

Approximately 1140 specimens. The species mix is limited to 44 species among 25 genera.

Numerically and visually, the most dominant species in Moore Park are:

Ficus macrophylla	279	24.5%
Ficus rubiginosa	162	14.2%

Other species are restricted to smaller areas within the park and make up much smaller proportion of tree population. Among the more dominant are:

Eucalyptus spp.	106	9.3%
Populus nigra 'Italica'	71	6.2%
Ficus microcarpa var. hilli	57	5.0%
Phoenix canariensis	53	4.6%
Araucaria cunninghamii	39	3.4%
Quercus ilex	38	3.3%
Melaleuca armillaris	29	2.5%

The main issues arising out of this mix of tree species are:

- Although new replacement trees, adjacent to Anzac Pde., have helped to boost numbers of *Ficus macrophylla*, most of the visually significant, older specimens are in decline due to debilitating factors such as age and pest problems.
- Many of the *Ficus rubiginosa* are newer plantings between older existing Moreton Bay Figs (e.g. Cleveland St.). Although these trees are not visually significant, forming part of the canopy cover along the main avenue plantings, when the Moreton Bay Figs go into decline and require removal, the poor form of many of the Port Jackson figs will become evident.
- The *Populus nigra* 'Italica' are generally insignificant in terms of visual impact because of dominant figs adjacent to most of them, but these trees do represent a safety and management issue for Parklands staff.
- *Phoenix canariensis* These palms are prominent in the restricted areas where they occur within the Park but have a poor prognosis due to the presence of *Fusarium oxysporum* (root rot disease) in the soil.
- *Eucalyptus spp.* and *Melaleuca armillaris* now have relatively short potential life spans due to the characteristics of the species or the result of poor stock, damage or pests and diseases.

- Recent plantings of *Agathis robusta* (73) and *Ficus platypoda* (24) have, to some extent boosted the numbers of trees in the Moore Park and expanded the potential life span of the population. However, these trees tend to have been planted in relatively narrow bands and, therefore, will have only limited impact on the overall appearance of this park both at this stage and over the longer term.

Moore Park Golf Course and ES Marcs Field

At least 1855 trees with total numbers probably closer to 2000. Fairly diverse species mix of at least: 50 different species.
Dominant spp. in these two areas are:

Olea africana	186	10.0%
Ficus microcarpa var. hilli	180	9.7%
Callistemon viminalis	169	9.1%
Eucalyptus spp.	162	8.7%
Acacia spp.	161	8.7%
Melaleuca armillaris	118	6.4%
Populus nigra 'Italica'	115	6.2%
Lagunaria patersonia	84	4.5%

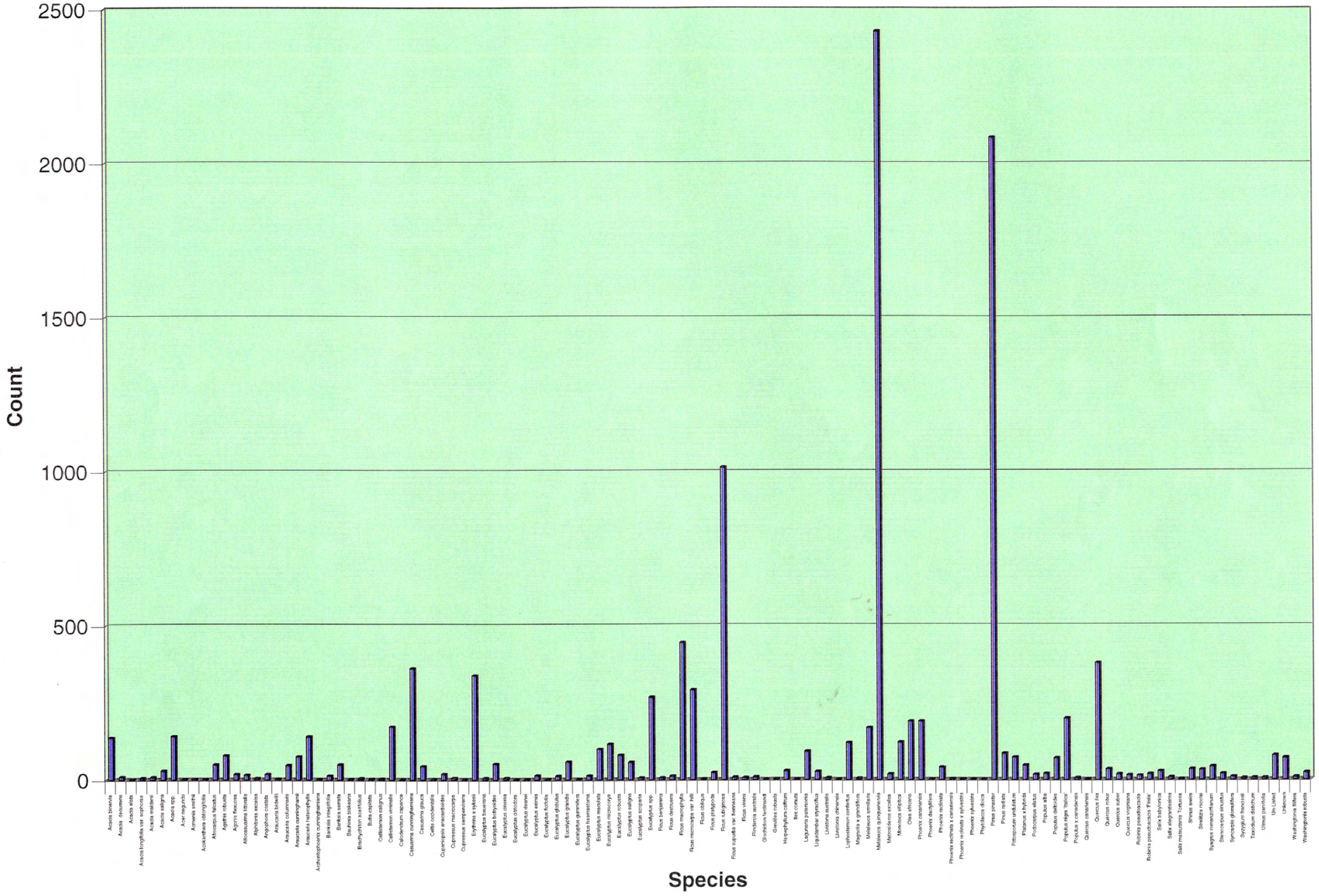
Other important but less dominant species include:

Lophostemon confertus	62	3.3%
Ficus macrophylla	57	3.1%
Melaleuca quinquenervia	49	2.6%
Populus deltoides	47	2.5%
Eucalyptus saligna	46	2.5%

The frequency of these species varies between the Golf Course and ES Marcs Field, with the Golf Course containing a higher proportion of the long lived species.

Generally, the main issues arising out of this mix of tree species are:

- The *Olea africana* contribute a relatively large proportion of the population having become a weed species. These threaten the viability of some other species due to their rapid spread. These trees will represent an ongoing management problem if allowed to spread unchecked.
- *Acacia binervia* make up more than half of the *Acacia spp.* on the Golf Course The wattles are important because they make up groups with strong visual impact on the landscape in some areas. However, their short life span creates issues for their ongoing management.
- *Eucalyptus spp.* in the two areas have relatively short potential life spans due to the poor growing conditions, the result of poor stock or planting or damage from pests and diseases.
- The groups of *Melaleuca armillaris* are important only in terms that they are often the dominant species in separate groups between fairways yet are already noticeably in decline. Careful early removal and interplanting among these trees may gain benefit from the windbreak effect to assist establishment of alternative species.
- *Populus nigra 'Italica'* represent a high number as a proportion of total population but of lower visual significance because most are in very poor condition and grouped together in random locations. However, these trees do represent a safety and management issue for Parklands staff.



context
Landscape Design

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CENTENNIAL PARKLANDS TREE SPECIES TOTAL

Drawing No: V 2.7