

# TREE MASTERPLAN FOR THE CENTENNIAL PARKLANDS

Prepared for the  
CENTENNIAL PARK & MOORE PARK TRUST

## VOLUME 1



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## ACKNOWLEDGEMENTS

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The Centennial Park and Moore Park Trust commissioned this Tree Masterplan for the Centennial Parklands in recognition that its grand trees are its single most defining and precious element of the landscape. The Trust is mindful that it must actively manage its trees to protect the outstanding qualities of Australia's premier 19<sup>th</sup> century parkland in order to pass on a legacy for the enjoyment and benefit of current and future generations.

The Trust would like to thank the following people and organisations for their time, knowledge and expertise in the preparation of this document.

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# EXECUTIVE SUMMARY



## EXECUTIVE SUMMARY

The Centennial Parklands, comprising Moore Park, Centennial Park and Queens Park provides diverse opportunities for recreation and relaxation in the midst of an increasingly dense and urban setting. In concept and size, the Centennial Parklands is one of the many great urban public parks of the late 19th century. Although distinguished from its European prototypes by the use of native Australian vegetation, the Centennial Parklands faces the same challenges as other Victorian parks: protecting its historic character and features, particularly its mature tree population, while at the same time accommodating ever changing recreational and leisure needs and changes to its setting.

Most of the tree planting in the Parklands spanned the sixty years between the 1860s and 1920s. It commenced with the row and avenue plantings along Anzac Parade (then Randwick Road) in Moore Park and climaxed between 1889 and 1912 with the planting of the Grand Drive, the palm avenues and the paperbark belts in Centennial Park. The 1930s conversion of swampy land in Queens Park to playing fields marked the end of the conversion of the former Sydney Common to the Parklands we know today. The species and patterns - particularly the avenues and belts of figs, oaks, araucarias, paperbarks and palms - of these early plantings continue to characterise the Parklands today.

Since 1996, the Centennial Parkland and Moore Park Trust has undertaken an extensive planning phase in order to integrate the Parklands. The Plan of Management for the Centennial Parklands (1997), the primary result of this effort, consolidates all strategic planning issues throughout the Parklands. One of the five key issues identified in the Plan of Management was the living heritage of the Parklands, and as a major component of this, flora management is considered a priority. In particular, it was the recognition that the absence of a clear planting philosophy and appropriate design principles hinder management programs and planting initiatives that led to the commissioning of this Tree Masterplan. Other studies that address flora management and guided the development of strategies of this Tree Masterplan include the Moore Park Plan of Management (1991), Moore Park Planting Plan (1994), and the Eastern Distributor Landscape Plan (1996), the Ponds Restoration Plan (1996), Visitor Strategy Plan (draft, 1998).

The Tree Masterplan identifies the special qualities of the existing tree population, particularly the landscape character it creates, as well as the culturally important elements such as spaces, vistas, view corridors and avenues. It recognizes the Victorian structure and character of the Parklands as highly significant, and establishes a framework for the conservation and modifications to the tree population. The Tree Masterplan promotes minimal change, and emphasizes incremental tree planting and replacement programmes.

The masterplan is based on analytic studies of the age, condition and maintenance of the trees, their heritage and aesthetic qualities, and the ecology of the Parklands. The results of these studies identified significant heritage and structural plantings and highlighted the following issues related to the management of the trees.

### (i) AGE AND CONDITION

The future of the trees in respect of life expectancy is quite uncertain; we only have limited experience of tree longevity, especially of exotic trees in the Centennial Park environment. Some are short-lived, while others will survive for many years. Analysis of the age and condition of the existing tree population shows a gradual and inevitable decline in numbers and health. Fig trees, which comprise the majority of all trees throughout the parklands can live for many hundreds of years in their natural environment. One hundred and thirty years or urban living to date with a prognosis of another 30 to 50 years of decline suggests a lifespan in the order of 150 to 200 years. The tree loss predicted by this analysis indicates a dramatic change to the landscape character of the Parklands, should tree loss continue to outpace replacements. To avoid this, the Trust must promote a proactive planting and replacement programme and plan accordingly for its staged and sequential implementation. While continuing with a systematic removal and replanting program, it is also essential to consider the habitat values of old trees. Many native and exotic species depend on dead or dying trees for nesting, shelter or feeding. The management of the tree master plan therefore needs to consider retaining trees which are in decline, longer in the outer woodlot areas or where there is little danger to property or public injury.

This programme must focus on conserving, reinforcing, and extending as necessary the essential landscape character of the Parklands, and encompass the following principles as set out in this Tree Masterplan:

- New planting should be undertaken to conserve the landscape character, to strengthen connections, or to reflect changes in use, and,
- New planting should be aesthetically compatible with the surrounding landscape, have manageable maintenance requirements, be ecologically appropriate, and where possible, improve wildlife habitat.

The conservation of an overall character of an area may, in some cases, involve thinning and removal of trees. For the most part, tree removal will occur by natural attrition. Exceptions include situations where a tree (or trees) is posing a risk to public safety, or where gradual removal will not achieve the desired character or form. The latter situation applies to

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the linear plantings, especially the fig avenues which define much of the Parklands. The successful renewal of this character requires block removal and replacement. While dramatic, this is the only known and accepted approach to create growing conditions that allow for the uniform and consistent habit characteristic of avenues. Whilst the grand avenues are majestic in their scale and domination in the landscape, they offer significant management challenges. The replacement of individual trees within avenues must be carefully considered. Where there is adequate light and space, tree replacement may be successful. However, generally it is not recommended due to the probability the tree will perform poorly. The renewal of avenues also face the challenge of differential age - renewing avenues which are kilometres in length within a timeframe that allows for a constant rate of growth.

Tree removal programmes must address the following points:

- Tree removal must be based on arboricultural, heritage and design analyses.
- Tree replacement will precede tree removal where possible.
- The removal or non-replacement of individual trees, clumps or small groves must occur gradually, preferably by natural attrition, so that change will be incremental and subtle.
- The pruning, removal and replacement of trees is a sensitive public relations matter. The Trust must implement a public relations programme to explain and promote the need, awareness, and acceptance of all projects requiring significant tree removals.
- Block removal and replacement of trees, the preferred method for conserving avenues, should only be undertaken when the condition of the existing trees has deteriorated to a critical level and the character of the avenue is significantly compromised.
- Trees to be removed are subject to habitat activity assessment,
- Aged existing trees should be maintained wherever possible, such as in the outer woodlot areas, to provide shelter, protection, nesting and roosting sites

## (ii) RETENTION OF IDENTITY AND CHARACTER

While Moore Park was created in 1867 and the Centennial Celebrations Act created Queens and Centennial Parks in 1887, the three parks comprising the Centennial Parklands today evolved with individual characteristics. It has only been since 1991 that the three parks have been recognised and managed as an important remnant of the Sydney Common. The recent consolidation of the parks provides the impetus and opportunity to strengthen the identity of each park and at the same time articulate an overall Parkland character. The Tree Masterplan promotes tree planting and minimal change to achieve these objectives, as shown in the following summary of recommended strategies:

- New planting must respect and compliment the significant design elements and maintain the heritage integrity of the Parklands;
- Integrate the tree plantings across the Parklands to establish an overall character for the Parklands, without compromising the individual character of each park;
- Maintain the principle of long term tree replacement that respects, improves and fosters an individual and special character for each of the three parks.
- Develop and encourage particular areas of the Parklands as natural areas to foster native flora and fauna. Link corridors where possible.

## (iii) LINK THE PARKLANDS TO THE CITY

The consolidation of the three parks also provides an opportunity to reverse the trend of encroachment from adjacent urban development that has plagued the Parklands for years. The following strategies are recommended:

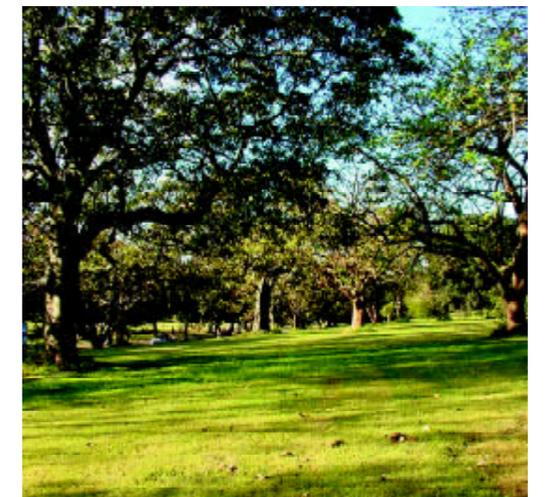
- Extend the existing woodland plantings on the perimeter of the Parklands to link the Parklands to the city and more clearly define its edges.
- Develop relationships with stakeholders, and State and Local Government agencies, particularly their park and planning staff to identify opportunities and strategies for extending and linking the Parklands tree character into the surrounding urban areas.

## (iv) CULTURAL VALUE

While the recreational and aesthetic appreciation of the Parklands is quite high, appreciation and awareness of its heritage value is quite low. The development of interpretation programmes which convey the historic and horticultural significance of the Parklands and its specific features will instill more pride and give rise to a stronger advocacy of its heritage value.

## (v) VARIETY OF TREE SPECIES

The physical and biological conditions of poor soil, harsh climate, high water table and aggressive diseases limit the range of plants that can be successfully grown in the Centennial Parklands. Over the years many tree species have been tried and failed, and major avenues have failed over a short period of time from disease. Today there is an established but limited palette of tree species best suited to the restrictive growing



“Tree management and associated horticultural practices are continually developing and evolving in response to a greater understanding of the environment and the ongoing monitoring of tree performance.”

conditions found throughout the Parklands. With improved planting and establishment techniques, it is now possible to expand this palette by experimenting with new species.

Experimentation is a historic practice in the Centennial Parklands dating back to its inception, but must be considered with a respect for the heritage and landscape values of the Parklands and conducted in a controlled manner to reduce associated risks. While the concept of trial plantings is an ideal, it does take many years to gain a confident understanding of a tree species' performance. Generally the Trust has relied on observations of successful plantings in surrounding municipal areas as a guide to likely performance. The Trust is currently trialling Cabbage Tree Palms to determine resistance to the fungal disease.

## (vi) TREE MANAGEMENT

Tree management and associated horticultural practices are continually developing and evolving in response to a greater understanding of the environment and the ongoing monitoring of tree performance. Earlier planting techniques were not able to fully consider the complex environmental conditions across the Parklands and may have contributed to the poor performance and failure of trees. In light of new technology and information, the Tree Masterplan recommends the following regarding tree management:

- All future tree planting programmes must be preceded by an environmental analysis to determine planting techniques, which will improve tree establishment and enhance the quality of growth.
- Whilst many trees across the Parklands are in decline, it is expected that they will continue to live for many years to come. Maintenance regimes must aim to extend the life of these trees.
- New trees will be sourced from suppliers who have demonstrable quality standards and a commitment to best practice in the propagation of plant material.
- Assess fauna habitat value when making decisions about tree maintenance practices.

## (vii) FAUNA MANAGEMENT

Centennial Parklands, while highly urbanised and close to the centre of Australia's largest city, nevertheless retains a range of native fauna species, which spend all or part of their life cycles in the park. The competing objectives of recreational use, cultural heritage conservation and the nature of the traditional design and historic plantings,

make the Parklands a place that could never support the range of species that once inhabited the swamps prior to European settlement. Visitors to the Parklands will still derive much pleasure from their encounters with the native fauna that has found suitable habitat and this fauna is also important for research and education. With sound management of the trees of the parklands, much valuable fauna habitat can be provided.

The Trust has responsibilities for protection of native fauna under the National Parks and Wildlife Act, the Threatened Species Conservation Act and the Australian Natural Heritage Charter.

It is therefore important to conserve the fauna that remains and to plan for future reinstatement of some species that no longer are found in the Parklands.

- Before any tree removal, undertake a fauna inspection to determine activity and prepare a strategy for managing the particular species.

## (viii) PRIORITY ISSUES

The Tree Masterplan contains recommendations for two specific and pressing problems.

The first is the coral tree *Erythrina Sp.*, a flowering deciduous tree, which provides contrast to the homogenous, evergreen canopy of the major Parkland trees, and is intrinsic to the picturesque landscape character of Centennial and Queens Parks. However, the coral tree is particularly susceptible to decay and collapse and is recognised as a high risk species. The coral trees of the Centennial Parklands are mature to over mature, with many individual trees actively failing. The Tree Masterplan proposes to retain and replant with coral trees in the low risk areas clear of property, paths, and roads such as the woodland perimeter. In the higher risk areas, adjacent to paths roads and picnic facilities, the Tree Masterplan proposes to replace the coral trees with another flowering deciduous tree. Retention and replanting of coral trees in low-risk areas will also diversify fauna habitat. Coral flowers provide an autumn food source for many birds particularly honeyeaters, and they are said to be favoured as nesting sites for Tawny Frogmouths, which exist in the Parklands.

The second issue is the future of palm trees across the Parklands. Palms are an intrinsic element of the landscape and represent J.H. Maiden's vision of imbuing Sydney's public parks with a tropical character. The Canary Island date palms *Phoenix canariensis* on Parkes Drive were the first, and until their recent decline from *Fusarium oxysporum*, one of the most remarkable, palm avenue plantings in Australia. The palm avenue became an icon for Centennial Park, and was the primary image on the Centennial Park logo prior to the establishment of the Centennial Parklands. Palms with similar grand proportions to both the original



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Canary Island date palms and the more recent cotton palms *Washingtonia filifera*, and which are disease resistant and will grow successfully in the Parklands are very limited and remain untested. Although there is great uncertainty as to the future viability of palms, they should not be discounted at this time; instead, it is intended to defer replanting palms until efforts to research alternatives are more conclusive and to provide opportunities for palms to be reintroduced at a later time.

Accordingly, a replanting scheme for Parkes Drive involves one palm and one tree species in a simple repetitive pattern. This approach will enable the park to retain the essential character of a colonnade of broad trunks framing views while thorough research into palm trees continues. The tree species must be a disease resistant evergreen, single stem and high-canopied tree that can be sourced and planted now. The proposed tree species is the kauri pine (*Agathis robusta*), a tall, slim, elegant and single stemmed tree, well suited to create a 'colonnade' of trunks. An initial planting of kauri pine with every second row left unplanted will allow space for palms to be reintroduced in the future.

#### (ix) IMPLEMENTATION OF THE MASTERPLAN

Implementation of this plan will be incremental over decades and most likely generational in its scope. The longevity of trees, even though they are in decline, is still largely unknown. The Trust's forward planting programme will thus be confined to 5 year segments to allow for stock sourcing and the re-programming of work to accommodate changing priorities that might arise during each period. It is expected that the significant and major replanting of avenues and groves will not commence for at least 10 to 15 years and perhaps longer if the existing trees remain viable. The avenues and groves will continue to be monitored for health, and the decline in their quality as significant forms in the landscape will to a large extent determine the programming for major replanting.