

# AUSTRALIAN PARK SYSTEMS - SOME CHANGES AND INNOVATIONS

## Introduction

It is with some trepidation that I approached the task of preparing this paper as Australia, although small in population (some 18 million) has a vast land area equivalent to that of mainland United States of America (excluding Alaska). However, the population it may support on a sustainable yield basis is not much more than that existing given that Australian is the driest continent - the sum of the output from all of rivers is less than that of the Mississippi.

It is also one of the most urbanised countries in the world, most Australians crowding into cities, particularly along the eastern coast.

Needless to say, there are parks of all categories able to provide delightful and rewarding experiences for park visitors and generally their categories are much the same the world over - including National, Conservation, Forest, Marine, State, Urban Regional, Suburban and City Parks as well as Parks of special categories such as historic and theme Parks. Most are managed by governmental authorities except for <sup>most</sup> some theme parks.

### 1. NATIONAL PARKS

Typically National Parks throughout Australia are large conservation parks managed by various State government authorities except for the Great Barrier Reef which is jointly managed by the Queensland and Australian National Park and Wildlife Services.

The following generally applies to National Parks:

- . Boundaries may only be altered by Parliament;
- . Conservation is the dominant management theme;
- . Encouragement of the use of parks by visitors with minimum impact on the natural resources;
- . Control of fire, vermin, weeds using techniques that result in minimum impact on the environment;
- . Interpretation of the parks for visitors;
- . Mining and exploration for minerals or oil is generally prohibited.

The most gratifying feature is that over the past twenty years the areas set aside for national parks have increased dramatically. In round figures, in 1968, 2.6M Ha of land have been set aside for 338 National Parks (NP's), by 1978 the area set aside was 10.1M Ha in 462 NP's and by 1988 18.47M Ha had been set aside in 510 NP's.

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So in the ten years the area of land set aside for NP's had increased nearly four times and in twenty years nearly seven times the 1968 figures.

Although this represents only 2.4% of the land area, other conservation areas have been set aside including Nature Reserves, State Parks, Wildlife Parks and Historic Areas, which bring the total to 40.78M Ha or 5.3% of the land area.

In addition, much greater emphasis has been placed on the reservation of Marine and Estuarine Protected Areas (MEPA's) to the extent that some 38.40M Ha including the Great Barrier Reef Marine Park have been reserved. These MEPA's include Marine Parks and Reserves, Historic Shipwreck Protected zones and Fish Sanctuaries.

Few countries have large nearly natural areas undeveloped or little used by men. Agricultural use, over-population, and careless land use have resulted in the destruction of millions of hectares of land and the destruction of many plant and animal communities as well as the extinction of a number of species. Australia still has large areas of land relatively undamaged, and it is up to the State and the Australian governments to set aside sufficient land to ensure that intact eco-systems are retained, as well as providing sufficient funds to manage, interpret and protect those areas of land set aside as National Parks or other conservation areas. (1)

## 2. ARE CONSULTANTS ALWAYS NECESSARY?

Sometimes money becomes available for a project which requires very urgent action to see that the funds are wisely and prudently spent within a very short period of time. It takes drive and ingenuity of the manager to ensure the project is implemented and completed on time.

One such case occurred in Darwin, the capital of the Northern Territory, when the Curator of the Botanic Garden (Local Government) and staff of the Conservation Commission were asked to produce plans for a project in the Botanic Garden costing up to US\$450,000 during a weekend for consideration by the Cabinet of the Northern Territory Government.

Sketch plans for a three part project comprising a tropical rain forest gully, a freshwater lagoon and a coastal dune regeneration area were prepared and then approved by Cabinet on the Monday. There was no time to employ consultants nor prepare detailed working drawings, all decisions were made on site. The area for the tropical rain forest was impenetrable, being choked with cyclone debris and a dense growth of Coffee Bush - Leucaena leucecephala. The site was cleared, the ponds and waterfall were located by pegs and the contractors were told to do it. The work was paid for on a piecemeal basis.

It was not possible to proceed with the lagoon development due to the presence of scrap metal including a machine gun in its original wartime camouflage. However, the Coastal Dunes Regeneration area and Tropical Rain Forest were completed. All within budget except that an extra \$50,000 was required for additional drainage works for the Tropical Rain Forest, this amount being received two days after being requested verbally.

If you have competent people of good will with a conviction that they can succeed, even if from different departments, then they will succeed. The tropical rain forest gully and the now naturally regenerating sand dunes, are living proof of that success nearly six years after their construction.(2)

### 3. USING PARKS FOR RESEARCH AND ENSURING SURVIVAL FOR RARE AND ENDANGERED SPECIES

Kings Park and Botanic Garden, Perth, Western Australia, is a 400 Ha park on the banks of the Swan River close to the commercial heart of the city. The Kings Park Board was given an Australian Heritage Award in 1988 for its work for the Conservation of Rare and Endangered Flora of Western Australia, which had involved research, nursery, botanic garden, and interpretative staff.

A wide range of techniques have been used to propagate plants including promoting seed set and germination, use of cuttings and grafts, micropropagation in axenic or symbiotic culture, or in vitro fertilisation. It has been necessary to use tripartite symbiotic culture of terrestrial orchids, where both bacteria and fungi are involved, and using in vivo and in vitro techniques.

Of the 266 taxa gazetted as rare flora in Western Australia at the end of 1987, Kings Park had 107 of them. Sixty four of these plants are displayed in the garden for Rare and Endangered flora. Twenty seven of them have definite floricultural potential. In the garden, interpretative signs and labels are used to inform visitors about the plants.

Tissue culture has been used for propagating such species as **Macropidia fuliginosa** and **Anigozanthus gabriellae** as well as colour variants of **A.Manglesii** and **A.Humilis** (3)

### 4. INTEGRATING PRIVATE AND PUBLIC OPEN SPACE LANDSCAPE DEVELOPMENT IN ARID ZONE IN AUSTRALIA

In the 1970's the Electricity Trust of South Australia (ETSA) decided to move the township of Leigh Creek, located in an arid zone 500 Km north of Adelaide, South Australia, and recreate it at a nearby site. The aim was to develop an attractive landscape having minimal water requirements.

Consultants, the Monarto Development Commission (MDC) and Hassell Planning Consultants (4) were employed to design the town. The responsibility for the implementation of the planting scheme was under the control of the A.O. Beal Scientific officer, Horticulture ETSA at Leigh Creek South (4)-(5) who helped select suitable plant species and develop drip irrigation and other techniques to achieve good plant growth under the arid climate. Mean annual rainfall is 205mm, mean annual evaporation (Class A pan) is 3,000mm. The soils were generally extremely alkaline, saline and often sodic. Maximum average temperatures are 33 to 36°C.

The new town was planned by MDC and involved considerable public input resulting in objectives which included provision of large residential lots, high fencing for privacy, avoidance of rectangular grid road patterns, and to provide similar commercial facilities to those in the existing town. Principal concerns of residents included the loss of established trees and gardens. Included in the criteria was the need to provide protection from hot northerly winds in summer and to maximise scenic views and to have a pleasant landscape character.

The site selected was fenced with a vermin proof fence and the town surrounded by a buffer zone of extremely hardy native plants, planted along the contours. Within the parks and streets a diversity of plants were used to help define spaces and screen out undesirable views. Some 350,000 plants were planted in the 280 Ha site including the 50 Ha buffer area and 10 Ha of parks.

Precise water regimes for plants were developed and home owners were issued with a booklet outlining the techniques and plants recommended for residential areas. Limitations of grassed areas, trickle irrigation and leaching were techniques employed to prevent rise in the very saline water tables and provide adequate water for the healthy growth of the selected plants. Grassed public areas were watered with reclaimed water from the sewerage treatment plant.

A high standard of landscape, both public and private, has resulted from the cooperation of the public, a viable town plan on the specially selected site, suitable plants, good design and the best water regimes selected for healthy plant development.

#### 5(a) DEVELOPING A LINEAR PARK ALONG A RIVER

The Torrens is Adelaide's only river and had been much used, abused and misused since settlement. Damming of its rural catchment, deposition of industrial waste, drainage of wetlands, alterations to improve storm water flow and removal of most of the indigenous vegetation had been its sorry lot. However, the river also provides recreational opportunities and scenic landscapes of a riverine system. These were to be enhanced.

A study of the River Torrens by Land Systems Pty Ltd Landscape Architects (7) was commissioned by the River Torrens Committee, South Australia Government, to coordinate the development and conservation of the river and its environs, eventually the work included a linear park, flood mitigation and a busway project.

The study area embraced 12 local government areas along its 36 kilometres from the Adelaide Hills to the sea. The Committee had envisioned that the study would be limited to a simple beautification plan; but it was expanded into a detailed ecological, land use and recreation study. It reviewed the existing topography, vegetation and land use as well as taking into consideration the demographic factors and recreational trends.

The linear park plan incorporated the following:

- . Low impact flood mitigation scheme
- . Selective clearing and reinstatement of appropriate vegetation
- . Conservation areas
- . Linking with adjacent parklands
- . A wildlife corridor
- . Low maintenance river environment
- . Regional system of walking and bicycle tracks
- . Screening out of undesirable views

The River Torrens Linear Park has now developed into Adelaide's most significant and widely acclaimed park system.

#### 5(b) DEVELOPMENT OF BUSWAY ALONG RIVER CORRIDOR

Integration of a transport corridor along a section of the Torrens River, included 6 Km of guided busway along the river corridor, carefully designated and landscaped to assist in gaining public acceptance for its construction. Land Systems Pty Ltd undertook the design incorporating it in their River Torrens study.

The buses speed along a leafy corridor at speeds up to 100 KPH and, by careful design, their visual and noise impacts have been kept to a minimum, the markedly increased patronage is a sure sign of its success. (8)

#### 6. USE OF SCORIA TO STABILISE GRASSED AREAS FOR PARKING

Yarra Park of 56.3 Ha is just south of Melbourne's central business district. The park encompasses a major cricket ground (M.C.G.) with a capacity of some 100,000 people. It is used not only as a major sports ground, but as a major venue for other outdoor activities. The landscape is mainly of trees and grassland, with the park being irregularly used for parking for major events at the MCG and at a new major tennis centre constructed nearby in 1987.

In 1987 funds were provided to improve the park and renovate the grassland to improve its appearance and its car carrying capacity.

Following successful results elsewhere, 10mm and under scoria (featherrock) was selected as the best medium. The soil was ploughed deeply followed by grading and filling as required. A 50mm depth of the scoria was spread over the surface and rotary hoed into the top 100mm of soil. Another 25mm of scoria was then spread over the top and the area sown down to various mixtures of grasses, selected according to the future use of the area. The result is a surface which will allow good grass and tree growth and withstand intermittent car travel and parking without damage. (9)

#### 7. THE FLORIADE 1988, CANBERRA

Special festivals, adequately marketed will provide an increase in visitor numbers often to the extent that the cost, even if there is no charge for admittance, will be more than justified in the terms of additional tourist funds into the community. Floriade held in Canberra, Australia's capital city in September 1988, a function celebrating the Bicentenary of White Settlement, is one such example.

Floriade, included a multinational festival built around an extensive floral bedding display. Bulbs and annuals, arranged in massed beds within a mature landscape, provided the living colour highlight, augmented by festival weekends featuring ethnic groups dancing, buskers and high quality theatre performances.

In addition, a pavilion was erected to feature the role of parks and conservation in Canberra over the past 75 years as well as displaying selected Australian Native Flora. (10)

Several sculptures from students of the Canberra School of Art were displayed and two were selected for the Queen Beatrix Floriade Sculpture Collection. Also the Queen Beatrix Sculpture Award for students and recent graduates from the Canberra School of Art was announced and winners' sculptures would be purchased for a permanent display. (11)

The success of Floriade was outlined in a Marketing Report (12) which analysed the results of advertising, the demography of visitors, and obtained visitor numbers by photographic surveys, parking area occupancy rates and from statistics at the nearby Regatta Point Planning Centre. Some 60-80,000 visitors attended Floriade over the three week period and its popularity was such that Floriade will again be held in 1989, and extended for another week, as well as doubling the area of its floral displays.

## 8. BICENTENNIAL PARK

To celebrate the Bicentennial of white settlement of Australia, many projects were initiated throughout Australia. Perhaps one of the most ambitious was the Bicentennial Park developed over four years, around 53 Ha of wetlands and 47 Ha of derelict wasteland west of Sydney, New South Wales at a cost of some US\$10M. The site basically comprised a garbage dump and railway embankment, a small mangrove colony and a dredge pond (mostly decorated by a proliferation of weeds).

### Park Features

The park, opened on January 1 1988, by the Prime Minister, Mr R.J. Hawke, features the following:

- . Natural areas (53 Ha)
  - Mangroves
  - Saltmarsh
  - Waterbird refuge
  - Creek
- . Formal Parkland (47 Ha)
  - ornamental lake with wooded island
  - native and exotic trees and shrubs
  - grasslands
  - picnic areas
- . Buildings and structures.
  - Treillage
  - Visitor Information Centre
  - Tea House
  - Cooking Pavilion
  - Main entry gates
  - Field Study Centre
  - Viewing Tower
  - Boardwalks

Most of the buildings are of an unusual style and dominate the landscape.

### Difficulties of Site

Because of the extent of clay cover over the 10m deep garbage, it was not possible to provide top soil, imported soil being only used in conjunction with tree planting. In grassed areas, the irrigation systems and fertiliser regimes were designed to compensate for the lack of top soil.

Methane gas produced by decomposition of the garbage is collected near buildings and dispersed, whereas it should have been collected and used to produce power for the park and its neighbours.

## Management and Staff

A seven member Trust oversees the management of the park and a staff of 15 is overseen by a Park Manager. Of the fifteen, ten carry out maintenance, which is highly mechanised.

One Education Officer assisted from time to time by two Rangers man the field study centre which, given the visitor numbers, seems very inadequate to provide a proper service.

## Future Role

Set in the geographic heart of the Sydney metropolis, the park serves a catchment of some 300,000 residents. In the three months following its opening, 291,000 visits were made to the park, with up to 10,000 visitors on one day, most of whom when questioned, expressed the wish to return.

If the park continues to attract this level of visits, very careful management will be required to prevent deterioration of the park resources, perhaps by restricting visitor numbers and/or providing additional facilities. (13)

## 9. DARLING HARBOUR

The greatest urban redevelopment project in Australia was undertaken at Darling Harbour, a run down area of bond stores and warehouses has been redeveloped to provide recreation and other facilities, including parkland. It lies adjacent to the central business district of Sydney, New South Wales. Darling Harbour is becoming Sydney's western gateway of business and recreation.

The following facilities have been or are to be provided:

- . Chinese Garden of one hectare, designed by landscape architects from New South Wales' sister State in China, Guangdong province.
- . Powerhouse Museum - The old powerhouse building is being restored to house the largest display of historic machinery in Australia.
- . Convention Centre, 3500 capacity.
- . Exhibition Centre covering 2.5 Ha.
- . Entertainment Centre, 12,000 seating capacity. Indoor stage.
- . The Park. Emphasis is on native trees and shrubs with dense stands of palms and rainforest to be established under the freeways. A lawn, fountain and children's playgrounds, surrounded by groves of native eucalypts have been provided as well as an amphitheatre for outdoor entertainments.
- . Aquarium to feature sea animals and environments from tropical to temperate.
- . Maritime Museum - will also include vintage ships moored on adjacent berths.



- . Darling Walk - proposed technology entertainment area featuring advanced technological amusements, to be funded privately. Possibly including an Omnimax Theatre and Planetarium as well as Circlevision Theatre.
- . Monorail. Privately funded, links Harbour with C.B.D.
- . Marketplace - To be funded privately, to have 200 specialty shops and restaurants.
- . Casino and Hotel - being developed on eastern fore-shore. Private funding.

My major criticism is the distracting and some ugly views out of the beautiful Chinese garden and consider more could have been done in both mounding and tree planting to screen and protect the beauty and tranquility of the garden itself.

It is a massive undertaking showing effective cooperation between government and private interests which are spending \$2-to-\$1 put in by the State Government and, in spending hundreds of millions of dollars, a derelict area has been transformed into a magnificent recreation and leisure centre for the metropolis of Sydney with its 3.4M residents, and its millions of visitors.(14)

#### 10. CIRCULAR QUAY REDEVELOPMENT, SYDNEY

The Quay area site of the first white settlement in Sydney Australia had become drab and run down. For the Bicentenary of white settlement, it was decided to restore the Quay area which is adjacent to the Central Business District. Restoration works included roads being replaced by paved walkways. New outdoor furniture and fittings designed to blend in with the historic theme have been installed.

Features include:

- . Replacement of solid walls of Circular Quay Railway Station with glass.
- . Spacious esplanade between North edge of Circular Quay railway station and the ferry wharves, shops and restaurants.
- . Roadway removed at Campbells Cove and replaced with paved pedestrian walk.
- . First Fleet Park extended to water's edge increasing its area three times, and is being extensively re-landscaped.
- . Promenades to the Opera House and glassed lower level promenade to protect pedestrians - will also include open air cafe and an information centre.
- . Paving of Opera House forecourt with granite replacing asphalt.

The total project costing some US\$56M will also allow the Opera House to be more readily seen and appreciated as a number of buildings which had obstructed its view were removed. An imaginative revitalisation which is being and will be enjoyed by many residents and visitors. It forms a fitting gateway to the Harbour City. (15)

11. NUNAWADING CITY COUNCIL PARK & RECREATION SERVICES

Very few municipal Councils in Australia provide as extensive park and recreation services as the City of Nunawading, Victoria. A suburb of Melbourne, it has an area of some 4,000 Ha and about 100,000 residents. Nearly 19% (US\$5.3M) of the city's annual income for 1988/89 was being spent on capital works, management, operations and maintenance of its park and recreation facilities and services.

Services and facilities provided include:

- . Horticultural Centre
- . Parks and Gardens, 28 major  
168 minor (includes 10 bush-land parks)
- . Swimming Pool (heated)
- . Community Gardens
- . Interpretative Programs
- . School Holiday Programs
- . Encouragement of volunteers to assist with programs and operating facilities
- . Recreation Centres
- . Golf Course (18 hole)
- . Public Halls
- . Mobile Play Equipment
- . Street landscaping
- . Recreation Activities for Disabled persons
- . (other budgets provide for Arts and Library services)

Horticultural Centre

Perhaps the most progressive innovation has been the development of the Council's Nursery into a community Horticultural Centre from concept in 1975 to reality in 1981, and embracing the following activities: *The most popular*

- . Nursery for most plants for streets, parks and community facilities
- . Courtyard garden setting for community activities
- . 80 seat hall for community activities especially those related to gardening/natural history
- . Guided tours
- . Display gardens
- . Source of horticultural information for residents
- . Gardeners' workshops
- . Shows, horticultural

*land displays*

*Its popularity is highlighted by the recent survey on outdoor activities which showed that gardening for pleasure was one of the most popular outdoor recreational activities with over 50% of the population over 15 ~~years~~ <sup>years</sup> gardening + more from 14-55, over 35%.*

### Interpretative Services

In 1980, the Council adopted a policy on interpretation to foster the development of programs to stimulate greater public enjoyment of the parks by broadening the scope of recreational opportunities, public understanding of the natural and cultural features and to develop greater public understanding of the environment in general. Since that time interpretative services have been developed, and information and visitor centres constructed.

The provision of the Horticultural Centre and the Interpretation services are just two examples of the commitment by Nunawading to outstanding progress in the parks and recreation field which should be emulated by Councils throughout Australia and by providing additional enjoyable, and interesting activities they will assist in the development of an environmental conscience in all people. (16)

### 12. METROPOLITAN PARKS, MELBOURNE VICTORIA

In 1973 the Melbourne and Metropolitan Board of Works decided to establish Metropolitan Park system for the Melbourne Metropolitan Area following an interim development order issued in 1971, which set aside six tracts of land as proposed public open space, and totalling 3,400 Ha. Generally the areas were large and were to provide for recreation opportunities that the local Councils could not. Special attention was given to areas with significant natural features, creeks or river valleys, remnant bushland, special topographical features, tree covered landscapes and other scenic vistas. The first Park was opened in 1976 and since that time, 22 million visits have been made to the Parks, and are reaching nearly 5 million per annum to the five Metropolitan Parks open for visitors.

The aim is to provide visitors with regional recreational experiences in an attractive landscape without damaging the park nor interfering with the enjoyment of others. The park system includes farmland, orchards, market gardens, natural conservation areas as well as open spaces for picnics and play.

The total area set aside for parkland is 5,414 Ha of which nearly 80% is in public ownership, the Board having spent some US\$40M on land purchases for the parks.

Two major features of the parks' service to the community are the provision of a Ranger Service as well as active and enjoyable interpretative programs for visitors of all ages.

#### Ranger Service

One management practice adopted since their inception, is that when the parks are open for visitors, Rangers are on duty to assist visitors in any way possible. Regulations have been developed to assist the Rangers should problems arise. However,

they allow as much freedom as possible and do not interfere in activities if the visitors are not causing damage to the resource, nor interfering with the enjoyment of others. In addition they make special efforts to help disabled visitors as much as possible to ensure they enjoy their visit.

### Interpretation Facilities and Programs

Since the parks' inception, special attention has been paid to interpretation and the following facilities and services have been provided:

- . Visitor Centres in four parks
- . Interpretative Rangers
- . Brochures on all parks
- . Guided tours including nocturnal tours (possum prowls), historic trails
- . Children's farm
- . Special programs for Senior Citizens, Heritage and Arbor Week programs
- . Earth Education, environmental programs
- . Interpretation/ Education Officers
- . Interpretative trails including a Disabled persons (Blind) trail
- . Checklists for Birds
- . Teacher education programs
- . Junior ranger programs
- . Family days - activities for families

### Earth Education

Earth Education specifically sets out to teach school children an understanding and appreciation of the need for acting in harmony with the Earth and its life. Designed for 10-12 year olds, the program developed by the Institute for Earth Education, an international non-profit organisation, emphasises the inter-connections among all life and the individual's responsibility for both experiencing them and preserving the Earth - The Earthkeepers!

The aim should be to provide all students in those age groups to take part in these programs and which would require a large increase in both teachers with the commitment and parklands being used for this purpose. (17)

### 13. THEME OF CONGRESS : OUR WORLD - A PARK FOR ALL PEOPLE

As people and natural resource managers, parks and recreation professionals are in a unique and special situation to deliver a message to the community regarding stewardship and concern for people, the environment and the resources of this world.

If real action is not taken soon regarding many of the environmental problems besetting the earth, it may be too late to prevent irreparable damage to the delightful, complex and fragile eco-systems that sustain us. One scientist, Dr Nicolas Polunin of the World Council for the Biosphere, Geneva Switzerland, said the world is reeling from at least 20 menaces, the worst of which is too many people. (18)

His list included the following:

- . Overpopulation
- . Greenhouse effect
- . Major diseases such as aids
- . Pollution of land, water and air
- . Depletion of Resources
- . Genetic manipulations gone wrong
- . Nuclear Warfare
- . Destruction of Ozone shield
- . Devegetation and Desertification
- . Stress and crime

What is the use of giving our parks tender loving care, while outside influences are wrecking the environment in which the parks have thrived?

I believe that park professionals, in particular, have the opportunity, indeed the duty, to develop programs in each and every park they manage, to alert people to the fact that the world and its people need as much tender loving care as the parks. A park system has not come of age until it has lively, interesting, challenging and sympathetic interpretative programmes structured for all ages and conditions of man.

- . Every program must have an environmental message!
- . Every park must be seen as a special environmental resource.
- . Every park of 20 Ha or more must be staffed with interpreters who have a special empathy for people and the environment as well as the ability to deliver the environmental message in an interesting, entertaining and enjoyable manner.

I see this as the greatest challenge to park professionals in the world today. Tomorrow may be too late!

#### Positive Actions for Park Systems

To achieve the best results for the community and the environment, undertake the following actions:

- . Minimal use of resources by parks departments;
- . Use machinery that runs on natural gas;
- . Recycle materials both from park operations and from visitors;
- . Extensive tree plantings both within parks and in other areas;

- . Develop exciting and interesting environmental programs for people of all ages and conditions;
- . Undertake research on park resources and visitors;
- . Employ interpreters, obtain, train and encourage suitable volunteers to assist your interpreters and other programs in the parks.
- . Ensure that your parks are accessible to people with disabilities and that programs and facilities are designed so that they may take part. (19)
- . Expand the park influence by going out into your communities and delivering messages through schools and social organisations;
- . Encourage staff, by example, to develop lifestyles which have minimal environmental impact.

Finally, by ensuring your park system has an effective and positive influence in the community you serve, they will, in turn, support your work so that you may play a very significant part in helping to ensure that Our World does become a 'Park for all People'.

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