

Canning River Regional Park

Management Plan

1997-2007



Management Plan No 36



Department of Conservation
and Land Management



National Parks and Nature
Conservation Authority



CITY OF CANNING

CANNING RIVER REGIONAL PARK

MANAGEMENT PLAN

1997 - 2007

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PREFACE

Regional Parks are areas of Region Open Space which are identified by planning procedures as having outstanding recreation and conservation values. Regional Parks are a new land management category which provides the opportunity for a co-ordinated planning strategy by different land management agencies and private land owners.

Regional Parks were first proposed in the Stephenson and Hepburn Report of 1955 which was the basis of the Perth Metropolitan Region Scheme in 1963. Since then, State planning agencies have been acquiring land in anticipation of the time when Regional Parks would be formally created.

The Canning River Regional Park is the first to have a formal management plan prepared. This was achieved through the co-operation of the City of Canning and the Department of Conservation and Land Management and Ministry for Planning with specialist input from the Swan River Trust.

The role of CALM is to provide its expertise in the preparation of management plans and as a joint land manager. CALM will manage the Conservation Areas that are proposed to be vested in the NPNCA, and the City of Canning the Recreation Areas. The Swan River Trust is responsible for major issues affecting the river and flood plain through its existing legislation. The creation of a Marine Reserve in this section of the Canning River is also being considered.

The Canning River Regional Park is unique, in terms of both the conservation values and the recreational opportunities it encompasses within a highly urbanised environment. This Management Plan, which is based on previously prepared ecological, recreational and historical surveys, seeks to establish a clear vision as to how best to manage and protect this important public asset.

While the Park has undoubtedly high ecological values and is a very popular recreation area, it is at the same time beset by a number of critical management problems such as outbreaks of blue-green algae, and the aquatic weed *Hydrocotyle ranunculoides*, the occurrence of fire, widespread invasion of weeds, areas of degradation and vandalism.

This Management Plan cannot solve all of the river's ecological problems, especially those which are whole of catchment issues. Integrated catchment management in the Canning Catchment is being addressed through the Swan Avon Integrated Catchment Management Program. The Canning Catchment Coordinating Group has been established to coordinate management on a whole of catchment basis and many smaller groups have formed to tackle issues specific to their area. Past and present activities of people also make it impossible to reinstate a pristine natural environment.

Work by management authorities supported by the local community has already begun to reverse the negative impacts on the Park. This Management Plan aims to protect the existing natural areas and provide a sound basis for planning to rehabilitate degraded areas whilst allowing for recreation activities that will not compromise the natural assets of the Park.

ACKNOWLEDGMENTS

Numerous individuals and groups have contributed valuable ideas and information in the preparation of this plan and their efforts are gratefully acknowledged. In particular the contribution of those individuals who were involved in the preparation of the draft plan is sincerely appreciated. This includes Alan Wicks (Draft Plan -coordinator, CALM), Greg Davis (Swan River Trust) and Bob Curry (Ministry for Planning).

The contribution of the Canning River Regional Park Community Advisory Committee chaired by the Hon. Graham Kierath and which included members Jane Blake, Jo Stone, Stephen Faulds, Max Hipkins, Councillor Bruce Mason, Barry Ranford, Kelvin Davis, Brian Hayes, Ann Bellman, Rob Towers from CALM and past members Pauline Hurst, Lance Deegan, Bob Moss and Alan Walker (CALM) is appreciated.

Mrs. Duncanson (Woodloes Homestead), Robert Reynolds (Department of Aboriginal Sites), Luke Pen, Water and Rivers Commission), Peter Morrison (City of Canning), Rae Burrows, Robert Powell, Richard Hammond, Greg Keighery, Wayne Schmidt, Roger Armstrong, Gil Field, Colin Ingram, Grant Revell, Alan Briggs, and Jim Williamson (CALM) also provided helpful comments. Marjorie Jackson typed the Plan and the maps were prepared by Rod Properjohn and Steve Jones of CALM's Information Management Branch.

NOMENCLATURE

Inclusion of a name in this publication does not imply its approval by the relevant nomenclature authority.

CITY of CANNING

The City of Canning jointly with CALM is responsible for the management of the Park. The City of Canning and CALM will develop a Memorandum of Understanding setting out the mechanisms for this joint management arrangement. The City will manage the areas zoned for Recreation and some of the areas zoned for Conservation and Protection as displayed in Table 1.

NPNCa and CALM

Under the CALM Act 1984 conservation reserves are specified as national parks, conservation parks, nature reserves, and other similar reserves and are vested in the National Parks and Nature Conservation Authority (NPNCa). These reserves are managed on behalf of the NPNCa by the Department of Conservation and Land Management (CALM).

The NPNCa is responsible for having management plans prepared for all lands that are vested in it. A Draft Management Plan for the Canning River Regional Park was prepared by CALM and issued by the NPNCa for public comment. Thirty eight submissions were received and were considered in the preparation of this final plan prior to its approval by the NPNCa and the Minister for the Environment.

The Fire and Rescue Service of Western Australia endorsed the plan on 24 June 1997. The Bush Fires Board endorsed this Plan under Section 34(1) of the Bush Fires Act (1954) on 9 July 1997.

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PART A INTRODUCTION

1. REGIONAL PARKS

The Regional Park Concept

The concept of Regional Open Space was first introduced to Western Australia by Stephenson and Hepburn in 1955, and was later adopted in the 1963 Perth Metropolitan Scheme. The intention was to protect open space of regional significance for conservation and recreation.

The Environmental Protection Authority (EPA) Red Book recommendations for System 6 (1983) identified and recommended areas of land to be managed as Regional Parks. These parks are large areas of land with conservation, landscape and recreational value. A system of Regional Parks was envisaged which includes the Canning River Regional Park (System 6 recommendation M68).

Areas of regional significance tend to be composed of nodes of open space connecting such linear natural features as rivers, foreshores, and beaches. The original concept involved private as well as public land. An area designated as Regional Park may include a range of land tenures, ownership, and management agencies, but mainly involving public land.

In 1989, the Government decided that the responsibility for Regional Parks management be established within the Department of Conservation and Land Management (CALM) and that the responsibility for planning the acquisition of lands for region open space be retained by the Ministry for Planning (MFP).

A task force report (1991) was prepared by the former Department of Planning and Urban Development (DPUD) and CALM outlining proposed administration, planning and management of regional open space.

The EPA's Red Book status report (1993) describes the transformation of Regional Parks from concept to reality as being difficult because of the range of land tenure involved and funding requirements for continual management of the Parks.

In June 1997 the State Government announced a commitment to introduce legislation to give Regional Parks legal standing and vesting in the NPNCA. The co-ordination of management of eight metropolitan Regional Parks would be progressively transferred to CALM.

Canning River Regional Park

Both the Swan River Management Strategy (1988) and the State Planning Commission (SPC) (1989), recommend the establishment of the Canning River Regional Park and the preparation of a joint management plan. In order to realise this goal, the Western Australian Planning Commission (WAPC) has continued acquiring land.

Both bodies envisaged joint management of the Park between CALM and the City of Canning. A joint management agreement was established in April 1992, which has since lapsed. A new agreement will need to be considered following the completion of this management plan. A Cabinet minute (16/1/89) approved in principle the establishment of the proposed Canning River Regional Park which will hereafter be referred to as the Park.

At this stage, none of the land in the Park has been vested in the NPNCA, however MFP has commissioned CALM to prepare this management plan in anticipation of the implementation of the management structure proposed in figure 1. CALM's role will be to coordinate the future management of the Park with the City of Canning. A recreation master plan and specific site development plans have also been prepared. (see Part D Recreation) These plans are available for viewing at the City of Canning Offices (see Appendix one for address).

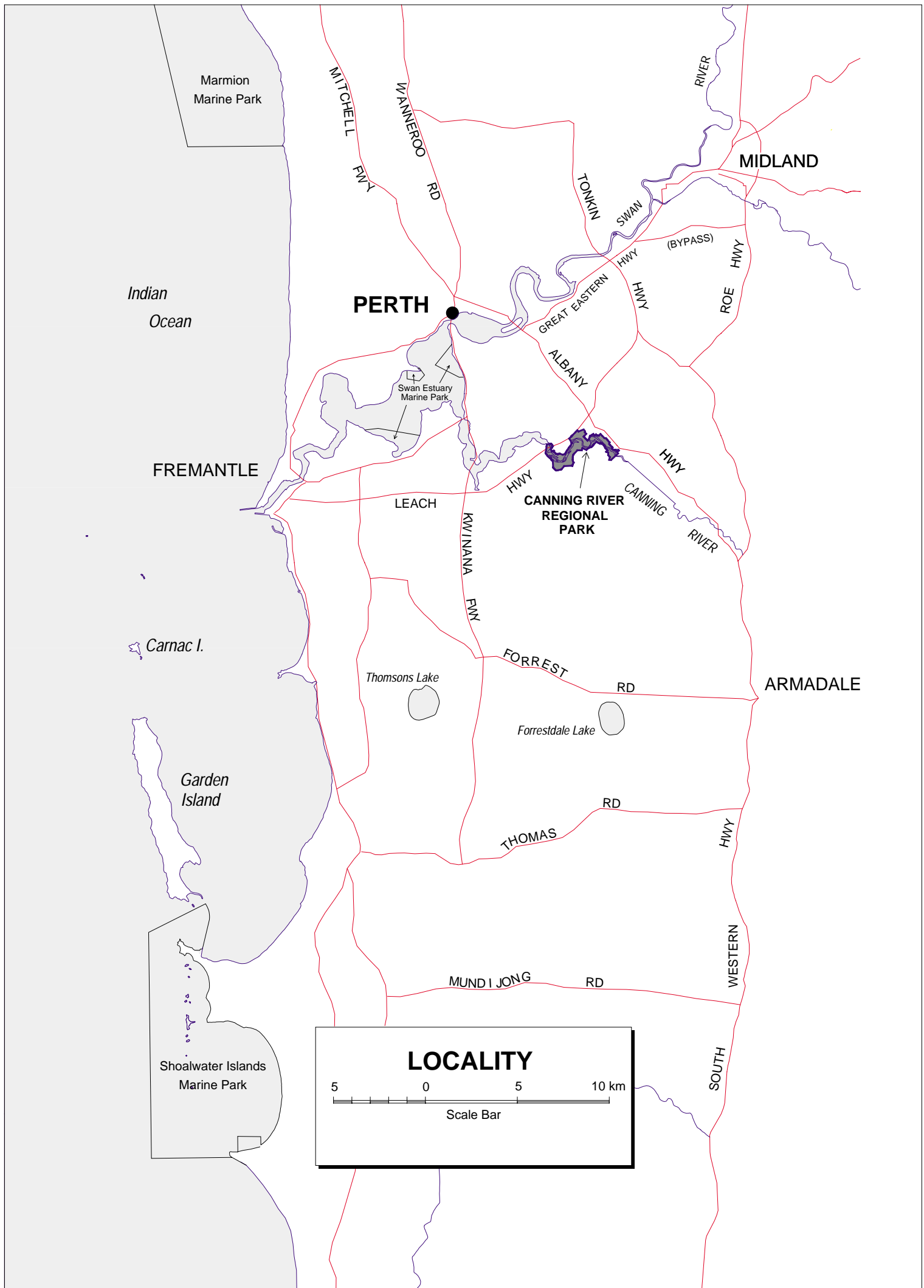
2. OVERVIEW

Location

The Park is located 9 kilometres south east of central Perth in the City of Canning. The Park extends for approximately six kilometres along both sides of the Canning River from the Nicholson Road Bridge in Cannington, to the Shelley Bridge (Leach Highway) in Riverton (Map 1). The Park covers an area of 266 hectares and is of regional significance because of its conservation and recreation resources in a suburban setting.

Conservation values

The Park contains the best estuarine vegetation in the entire Swan-Canning River system. The Park contains a wide diversity of habitats which include: Salt water estuary and deltine Islands; Salt marshes and Riverine



Marmion
Marine Park

Indian
Ocean

PERTH

MIDLAND

FREMANTLE

LEACH

Swan Estuary
Marine Park

**CANNING RIVER
REGIONAL
PARK**

Carnac I.

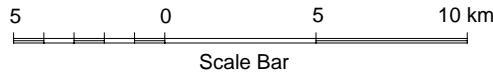
Garden
Island

Thomsons Lake

Forrestdale Lake

Shoalwater Islands
Marine Park

LOCALITY



ARMADALE

MUNDIJONG

SOUTH

THOMAS

FORREST

KWINANA

WESTERN

ALBANY

GREAT EASTERN

TONKIN

SWAN

RIVER

MITCHELL
FWY

WANNEROO
RD

(BYPASS)
HWY

ROE
HWY

HWY

CANNING
RIVER

RD

RD

HWY

HWY

HWY

HWY

RD

RD

Part A. Introduction

environment; freshwater environment; billabong; modified forest and woodlands on the flood plain. The Park is also highly valued as a refuge for birds and other wildlife. The Park is listed on the Register of the National Estate.

Recreation values

Being so close to Perth and surrounded by urban development, highlights the importance of the area as a recreation resource. A wide variety of recreation activities and experiences are available to users of the Park. Recreation development plans have been developed in conjunction with this Management Plan. See Sections 23 and 25.

Previous studies

The Swan-Canning River System and this section of the Canning River in particular have been the subject of numerous studies, and a wide range of literature exists that covers the biological and cultural aspects of the Park.

This Management Plan does not seek to repeat that information, but does refer to it as a basis for identifying and evaluating future management options and directions.

A common management direction

The establishment of a management structure, common goals and agreement on priorities is necessary for safeguarding this regional resource where a number of land owners, the general public and interest groups are involved. This Management Plan has been written in conjunction with all the proposed land managers and comments were sought from the public on the draft plan in order to establish a common management direction. Community involvement and community education are important ingredients in achieving the management goals set out in this plan.

PART B PRINCIPAL MANAGEMENT DIRECTIONS

3. THE VISION FOR PARK

The objective is to adopt a vision for the Park and establish goals that will achieve this.

The vision is that the Park is recognised as an important natural resource of lands and waters, where sustainable habitats and ecosystems are protected, where a wide range of appropriate recreational activities can take place, where degraded areas are restored and protected, where the community and management agencies share the stewardship and educational tasks for park users and the community.

Goals have been set for each major part of the Management Plan, while objectives designed to achieve these goals have also been identified. The following management goals are proposed for the Park .

Conservation

Protect and conserve the Park's natural, cultural and scenic resources and actively rehabilitate the Park's natural resources.

Recreation

Provide opportunities and facilities for appropriate public recreation in a manner that minimises conflict between users and is consistent with other management objectives.

Information, Interpretation and Education

Promote an understanding of the Park's history and natural environment and an awareness and appreciation of its values.

Research and Monitoring

Promote and undertake studies of the Park's natural ecosystems and processes and its recreational and cultural values. Monitor the impacts of visitor use, changes to natural systems and management practices.

STRATEGIES

- 1. Establish conservation as the primary goal of the Park and allow recreation and other uses of the Park to occur to the extent that the primary goal is not impaired. (CC and CALM)**

4. POLICIES

The objective is to integrate the policies of the management agencies to complement and support the vision for the Park.

Swan River Trust Policies

The Park lies wholly within the Swan River Trust Management Area. See also Section 7 for more detail. The Swan River Trust Policies (1993) most relevant to the Park's management are: EA 1 - Conservation, environmental and landscape protection, EA 2 - Foreshore Reserves, EA 5 - Heritage, DE 2 - Cycle Paths and Dual Use Paths on the foreshore, DE 4 - Stormwater disposal and DE 9 - Commercial Development. Copies of the SRT policies are available on request (see Appendix 1).

NPNCA and CALM Management Policies

This plan is based on current National Parks and Nature Conservation Authority (NPNCA) and CALM policies. These policies derive from legislation, principally the CALM Act (1984) and the Wildlife Conservation Act (1950), and associated regulations. Policies are published and distributed throughout CALM as policy statements. They are available to the public on request. These policies, as they relate to this Park, cover aspects such as recreation, conservation and education.

City of Canning Management Policies

The City of Canning management actions need to reflect the policies advocated in this plan. The City is considering the adoption of the principles outlined in this management plan as policy for the future management of the Park.

STRATEGIES

- 1. Manage the Park to support the relevant SRT policies. (CC and CALM)**
- 2. Apply CALM and NPNCA recreation, conservation and education policies in the Park. (CC and CALM)**
- 3. Prepare a specific policy statement for consideration by Council which reflects the**

principles outlined in this management plan. (CC)

5. LAND TENURE AND PARK BOUNDARIES

The objective is to ensure that the values of the Park are protected by security of tenure and its gazetted purpose.

The Park boundary has been determined by the MFP and is based on the boundary advocated by the former SPC in 1989. A number of minor amendments have been made to the boundary advocated in 1989 which are set out in the South East Corridor Omnibus Amendment of 1995.

The boundary for the Park is shown on Map 2. The boundary reflects the current Metropolitan Region Scheme (MRS). Any changes will be consistent with future MRS amendments.

Currently land within the Park is vested in a number of different government agencies or owned privately. There is at present 10 hectares or less than 5% of the Park in private ownership. The WAPC and its predecessors have been progressively acquiring land to meet open space goals in preparation for vesting in the management agencies as advocated in Section 6. Negotiated settlements are required in order to obtain the remainder of the private land within the Park boundary.

STRATEGIES

- 1. Adopt the Park boundary as shown on Map 2. (MFP)**
- 2. Seek to purchase the remainder of the private land as soon as possible and preferably within 12 months from willing land owners. (WAPC)**
- 3. Amend the MRS to include all the proposed park area in the Parks and Reserves Reservation. Ensure consistency between the gazetted boundary and the MRS boundary. (MFP)**
- 4. Recognise Regional Parks as an independent category in the Metropolitan Region Scheme. (MFP)**

5. Vest the land in the management agencies as outlined in Section 6 Zoning. (DOLA)

6. Initiate the vesting of the river component of the Park with NPNCA, as a Marine Park (see Section 6). (CC, CALM, SRT)

7. Investigate the closure of undeveloped Road Reserves within the boundary of the Park and include in the gazetted area of the Park where appropriate. (CALM,CC)

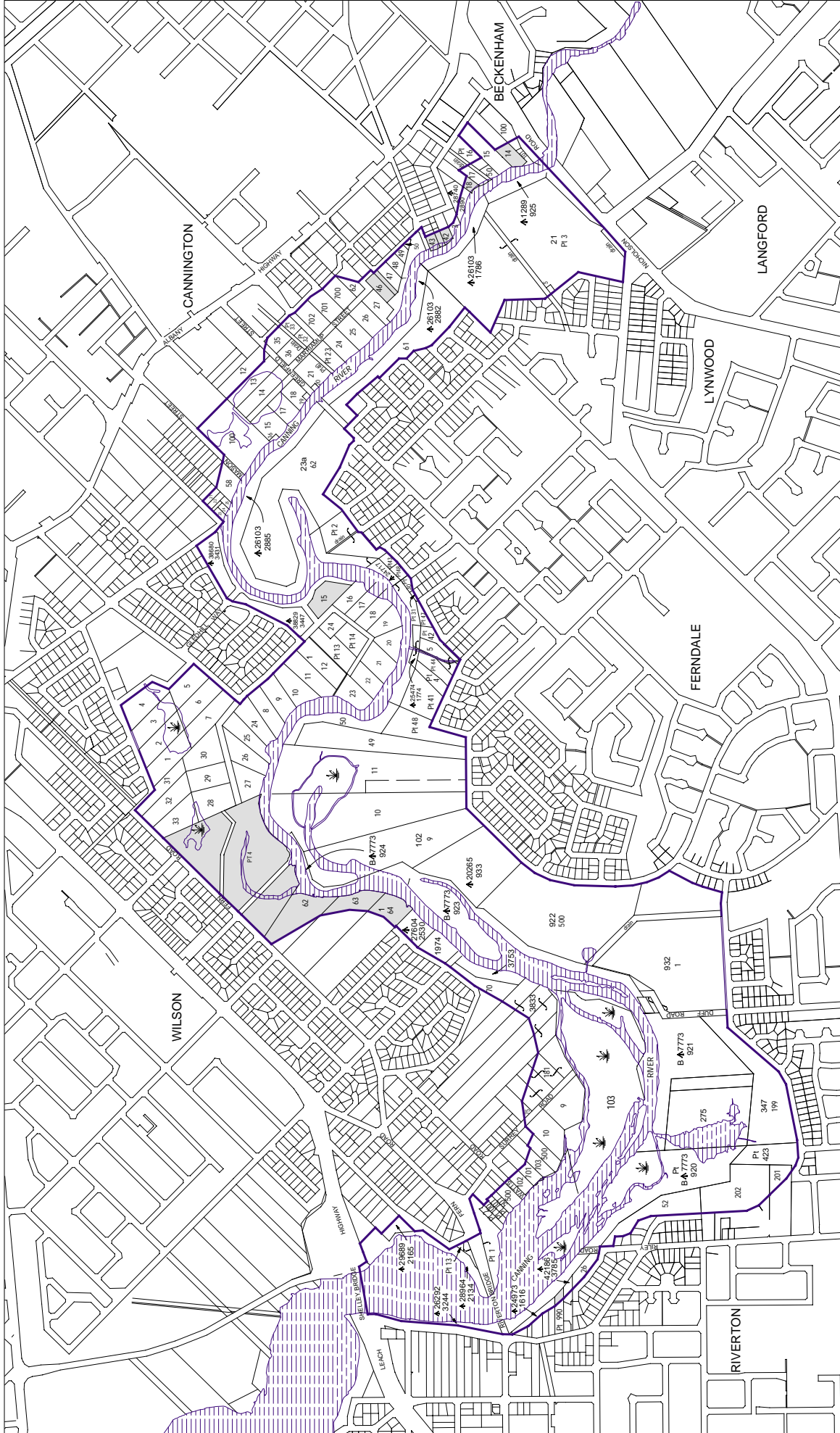
6. MANAGEMENT ZONES WITHIN THE PARK

The objective is to adopt a management zoning system that protects conservation values, provides for appropriate recreation and other uses, and provides for efficient management of the Park.

Management zones are a framework for protecting the Park by minimising existing and potential conflicts between uses and activities. They provide a broad guide to the public uses and management activities which are appropriate in certain areas and indicate which management objectives have priority in any area.

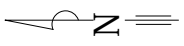
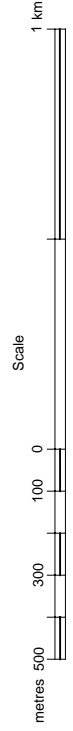
The zoning plan for the Park is based on recommendations made by the former State Planning Commission (1989). It reflects the conservation significance of the area and the intensity and types of recreation uses.

This Management Plan significantly varies from the SPC (1989) recommendations in that it is proposed to make the river within the Park a Marine Park which would be managed by CALM to SRT standards. This is proposed for the following reasons. The river is integral to the conservation and recreation values of the Park. The difficulty of defining management zones between different management agencies will be reduced if CALM manages the river and conservation areas. The status of the Park would be raised if the importance of the river was acknowledged in this way. The zoning plan (Map 3) will guide future management.

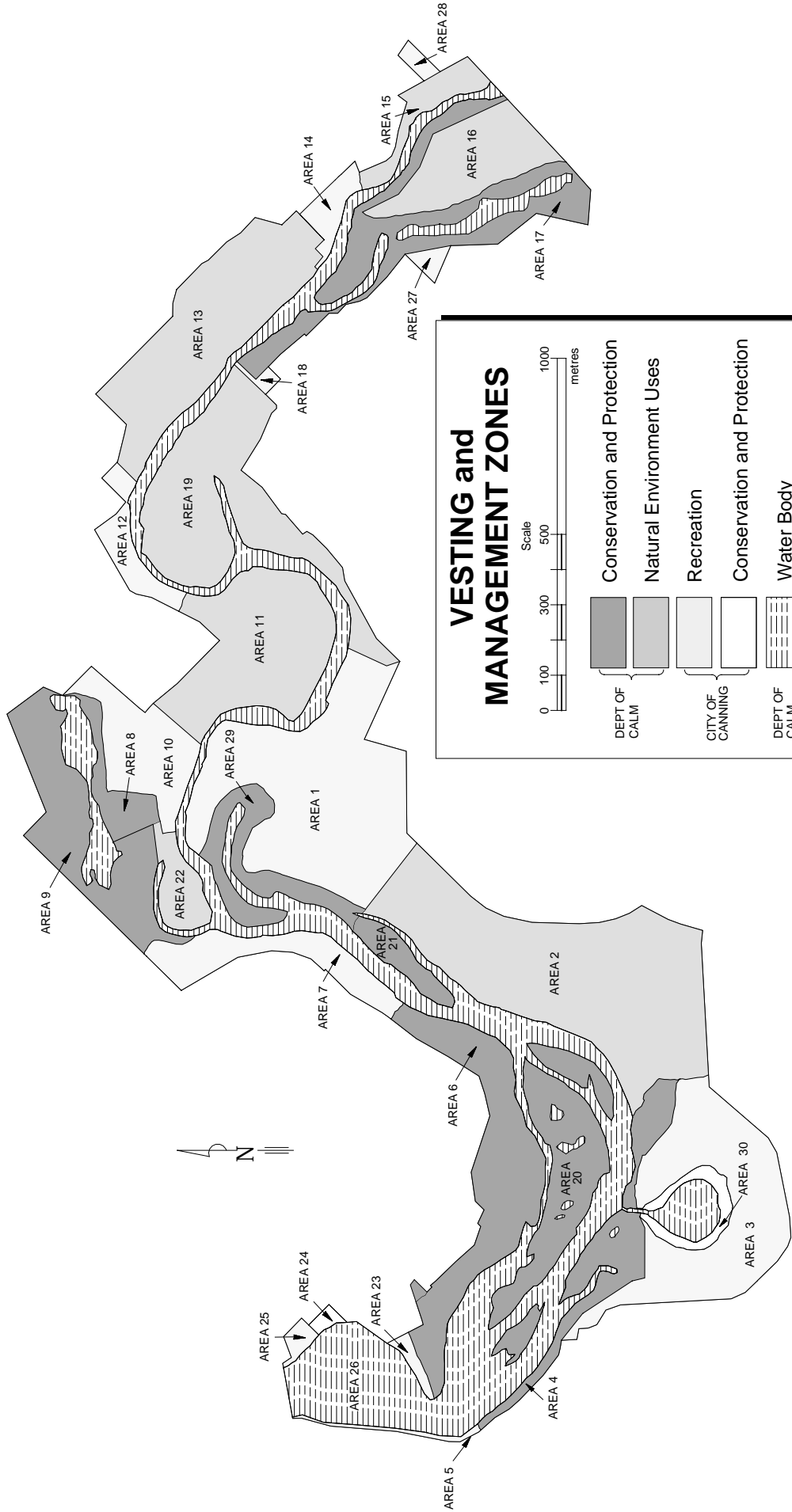


TENURE and PARK BOUNDARY

MAP 2



- Park Boundary
- Private Property



VESTING and MANAGEMENT ZONES

Scale
0 100 300 500 1000
metres

DEPT OF CALM	Natural Environment Uses	Recreation	Conservation and Protection
DEPT OF CALM	Water Body	CITY OF CANNING	CITY OF CANNING

STRATEGIES

1. **Base future management of the Park on the zoning plan. (CC and CALM)**

7. **INTEGRATED MANAGEMENT OF THE PARK AND ADJACENT AREAS**

The objectives are to integrate the management of the Park and seek co-operation from adjoining landowners to support the management goals and objectives of the Park.

7.1 The Park Management Structure

The Park management structure is shown in Figure 1. The joint managers of the Park are CALM and the City of Canning and their areas of responsibility are set out in the previous section on management zones. Close co-operation is required by these land managers for the Management Plan to be implemented efficiently and effectively. It is proposed that the City of Canning and CALM develop a Memorandum of Understanding setting out how they will jointly manage the Park. Many agencies have planning powers and controls that effect the management of the Park and their relationship is shown in Figure 1.

7.2 Adjoining landowners and management authorities

The main management authorities with a vested interest in or adjacent to the Park are: The Swan River Trust, City of Canning, City of Gosnells, Water and Rivers Commission, Main Roads Western Australia, and public utilities such as Western Power and the Water Corporation.

7.2.1 Swan River Management Strategy

This strategy was prepared for the Western Australian Government by the Management Strategy Task force in 1988. It includes recommendations concerning planning, development and use of specific areas of the Swan and Canning Rivers and their foreshores. The Canning Wetlands (Shelley Bridge to Nicholson Road) is identified as a specific area in the strategy and recommendations A64, A65 and A68 to A70 specifically apply to the Park. Recommendation A64 calls for the declaration of the Canning River Regional Park. The preparation of this Management Plan satisfies recommendation A65 of the strategy. Recommendation A68 is for a review of land zoning adjacent to the Park to ensure compatibility with conservation of flora and

fauna. Recommendation A69 concerning the investigation of the mud flats between Shelley and Riverton Bridges into the Park is addressed in this Plan (see section 5, recommendation 6); and recommendation A70 relating to the need to restrict power boat usage in the Park has been addressed in this Management Plan. The Plan has been developed to be consistent with the themes of the Swan River Management Strategy.

7.2.2 Swan River Trust

Overall responsibility for planning, protection and management of the Canning River

The Park falls wholly within the Swan River Trust (SRT) Management Area. The Trust was established to bring together all State and local government authorities which have a major interest in the Swan and Canning Rivers with an overall role of co-ordinating and implementing activity associated with the river. This means that any developments, including a change of use within the Trust's area, must be approved by the Minister for the Environment under Part V of the Swan River Trust Act. The Trust assesses such applications and makes recommendations to the Minister who determines the application.

The SRT was set up on 1 March 1989, under the Swan River Trust Act 1988. Its responsibilities are to plan, manage and protect the SRT Management Area, which includes the waters of the Swan-Canning River system and adjoining Metropolitan Region Scheme Parks and Recreation Reservations.

The Swan River Trust must advertise any significant developments that fall within its management area. CALM has a responsibility to advertise draft management plans, proposed changes to approved management plans and the creation of new reserves. It may be possible to combine these advertising periods.

Implementation of this Management Plan is subject to development plan approval by the SRT. If the SRT considers that implementation proposals differ from the intention of the management plan, then the Trust would treat this as a separate development application requiring public comment. CALM and the SRT (in collaboration with the Water and Rivers Commission) are currently preparing a "Memorandum of Understanding" outlining how their organisations will work together to streamline consideration of development applications. The memorandum will include advertising of significant developments, liaison between CALM field staff and SRT inspectors and the implementation of CALM management plans.

TABLE 1





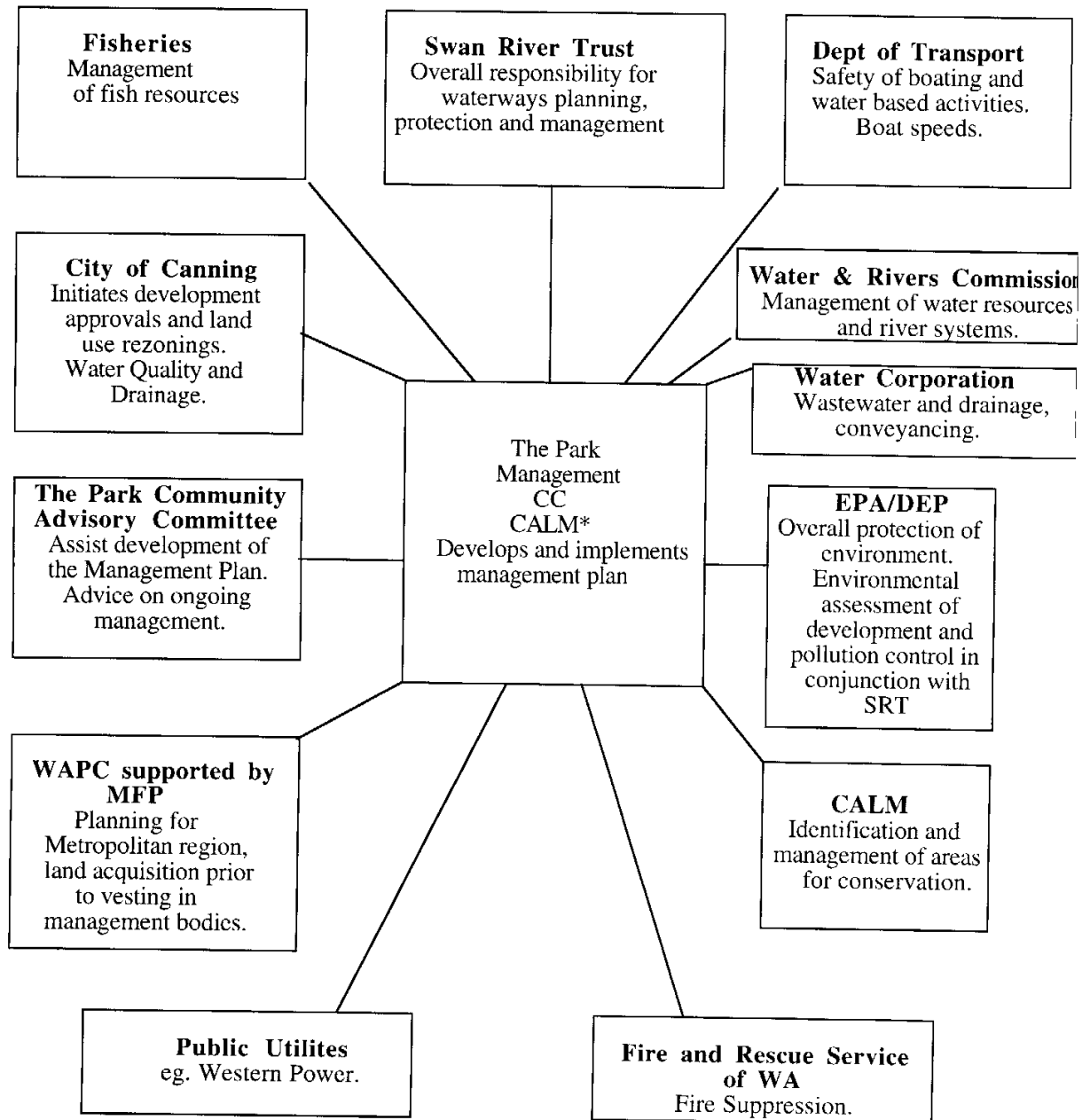
LAND USE ZONES AS INDICATED ON MAP 3			
MANAGEMENT ZONE	PLAN AREA	MANAGEMENT BODY	MANAGEMENT EMPHASIS
<p>CONSERVATION & PROTECTION</p> 	<p>AREA 4 AREA 6 AREA 8 AREA 9 AREA 17 AREA 20 AREA 21 AREA 29</p>	<p>DEPARTMENT OF CONSERVATION & LAND MANAGEMENT</p>	<p>Restricted public access, vehicles prohibited. Development of facilities restricted to minor nature trails, signs, cycle tracks through access where necessary. Rehabilitation of vegetation. Habitat protection for water birds and other fauna.</p>
<p>NATURAL ENVIRONMENT USES</p> 	<p>AREA 2 AREA 11 AREA 13 AREA 15 AREA 16 AREA 19 AREA 22</p>	<p>DEPARTMENT OF CONSERVATION & LAND MANAGEMENT</p>	<p>Predominantly natural environment uses, public access by walking trails and cycle trails. Rehabilitation of vegetation. Some development of facilities necessary.</p>
<p>RECREATION</p> 	<p>AREA 1 AREA 3 AREA 5 AREA 7 AREA 10 AREA 12 AREA 14 AREA 18 AREA 23 AREA 25 AREA 27</p>	<p>CITY OF CANNING</p>	<p>Predominantly passive recreation pursuits, allowing for car parking and picnic facility development, rehabilitation and landscaping of areas. However, allows for limited development of active recreation pursuits, eg. car parking, buildings, reticulated and landscape areas. High use areas.</p>
<p>CONSERVATION & PROTECTION</p> 	<p>AREA 24 AREA 28 AREA 30</p>	<p>CITY OF CANNING</p>	<p>Restricted public access, vehicles prohibited. Development of facilities restricted to minor nature trails, signs, cycle tracks through access where necessary. Rehabilitation of vegetation. Habitat protection for water birds and other fauna.</p>
	<p>AREA 26 Water Body</p>	<p>DEPARTMENT OF CONSERVATION & LAND MANAGEMENT</p>	<p>Maintenance of water quality to ensure survival of aquatic eco system. Allowing those recreational activities which are compatible. Protection of river banks and erosion control.</p>

Figure 1. Management Structure of the Park



(*Areas vested in the NPNCA are managed on their behalf by CALM.)

Part C Principal Management Directions

The Lower Canning River Management Plan

The area to the west of the Park is covered by the Management Plan for the Lower Canning River prepared by the SRT (1995). The release of this Plan satisfies Recommendation A 56 of the Swan River Management Strategy. The Lower Canning Plan overlaps with this Management Plan in the area between the Leach Highway and the Riverton Bridge. The Lower Canning Plan uses the System 6 boundaries whereas this plan uses the boundary advocated by the SPC (1989).

Water quality

The SRT has the ability to influence the quality of water in the river. See Section 10.

7.2.3 City of Gosnells

Hester Park

Hester Park to the east of Nicholson Road, is managed by the City of Gosnells. The park contains 45 hectares of public open space on the western banks of the Canning River. The facilities include: parking, toilets, Dual Use Path and space to launch canoes, making this recreation area a natural focus at the eastern end of the Park. A management plan has been prepared for this area. The philosophy and management practices proposed are compatible with maintaining the values of the Park. Hester Park could serve as the major entry point at the eastern end of the Park. The possibility of including Hester Park in the Park should be investigated.

7.2.4 The City of Canning

Planning and implementing the Canning Regional Centre

The Carousel Shopping Centre is proposed as a Regional Shopping Centre by the City of Canning following the release of the Canning Regional Centre Structure Plan in 1991. The Regional Centre will have a common boundary with the Park. The Structure Plan acknowledges the benefit of having such a natural asset adjacent to the Regional Centre. Work has begun to implement the plan. The Regional Centre will focus attention on the Greenfield Street section of the Park, possibly leading to greater use and demands to rehabilitate degraded areas and to improve the visual appeal of the Park.

Planning and development controls

The majority of neighbours to the Park come under the City of Canning Town Planning Scheme No 40 which establishes planning zones within the City.

Services and facility provision

Roads, footpaths, street trees and drains (see below) are examples of services and facilities provided by the City, adjacent to the Park. The manner of construction and maintenance

of these, may impact on the values of the Park.

7.2.5 Water Corporation

Storm water outlets and drains

A large number of stormwater outlets and drains are present in the Park, which raises two main issues. The first is water quality (see below) and the second is the aesthetic and physical impacts of these utilities.

Many outlets are unattractive and more attention to detail is necessary so that they blend with their natural surroundings. Open drains are frequently straight and have almost vertical walls. Consideration should be given to their appearance and function by battering back walls and planting the sides with native vegetation. This would have the effect of improving existing outlets and stripping nutrient from storm water before it reaches the Canning River. Together with modifications to their alignment these treatments should lead to utilities that remain functional and yet merge into their surroundings. In 1993 the then WAWA co-operated with MFP and CALM in works carried out near Cockram Street in an effort to reduce the impact of drainage and sewerage works. A similar approach is needed in other sections of the Park.

The discharge point for stormwater outlets also requires consideration as fresh water flushing of salt marshes and other wetlands may be responsible for the bulrush invasion, Brock and Pen (1984). See Sections 11 and 13.

Water quality

The issue of water quality is discussed in Section 10. The discharge of raw sewage onto the flood plain or directly into the river may occur if a power failure or equipment failure occurs. This occurrence could have serious consequences for the natural environment and must be avoided. The Water Corporation have contingency plans to put into action should this situation arise, however there is no guarantee there will not be sewage overflows.

7.2.6 Public Utilities, eg. Western Power

Electricity supply

Every attempt should be made to reduce the visual impact of power lines and power poles in the Park. Power to services within the Park should be placed underground. Alternative routes for mains power lines should be considered and only routed through the Park as a last resort. The visual impact of any infrastructure proposed by public utilities should be carefully considered.

7.2.7 Private Landowners

The majority of the Park boundary is bordered by private landowners and private residences in particular. These people have the enormous benefit of living in an urban situation immediately adjacent to an extensive natural area. Residences bordering the Park can have a great impact on the Park through the spread of weeds and garden escapees, the appearance of their properties as seen from the Park, having pets in close proximity to wildlife, and increased likelihood of fire. On the other hand these neighbours may help with its management and security.

and CALM guidelines. (CC, WRC and WC)

9. **Ensure design and maintenance and operation of Water Corporation facilities prevents overflow of sewage and consider installing facilities for the storage of sewage overflow and emergency power generators at sewerage pumping stations adjacent to the river. (WC)**

STRATEGIES

1. **Develop a 'Memorandum of Understanding' to facilitate implementation of the Plan. (CC and CALM)**
2. **Promote Integrated Management of the Park with adjoining land managers. (CC, SRT and CALM)**
3. **Educate and encourage neighbouring land owners to support the management objectives of the Park (see Sections 29 and 30). (CC and CALM)**
4. **Prepare plans for the area adjacent to the Regional Centre that take into account the management objectives of the Park. (CC and CALM)**
5. **Liase with consultants, City of Canning and other authorities that will provide facilities and infrastructure for the Regional Centre to ensure that the conservation values of the Park are protected. (CC and CALM)**
6. **Investigate the inclusion of Hester Park into the Park. (MFP, CG, CC and CALM)**
7. **Complete the Memorandum of Understanding between CALM, SRT and WRC. (SRT, WRC and CALM)**
8. **Survey and review current drainage outfalls within the Park with a view to establishing a program for the redesign and rehabilitation of these in accordance with SRT**

PART C CONSERVATION

8. PRINCIPAL CONSERVATION DIRECTIONS

CONSERVATION GOAL

Protect and conserve the Park's physical, cultural and scenic resources.

The objective is to protect the Park's values, restore degraded areas and promote a conservation ethic for the Park.

CONSERVATION STRATEGY

The strategy for conservation management of the Park is to conserve natural areas and minimise conflict between recreational use and conservation values (Section 6), control weeds (Section 13), minimise the effects of fire (Section 14), rehabilitate degraded areas (Section 18) and promote community education and involvement in the management of the Park (Sections 29 and 33).

9. GEOLOGY AND SOILS

The objective is to protect and conserve the existing geological structure and soil associations in the Park.

The Swan-Canning River system is a drowned river valley system, adjacent to a semi-arid hinterland of low relief and sluggish drainage (L.B Collins 1987). These rivers are part of the drainage system of the Swan Coastal Plain, which lies between the Darling Scarp and the sea. A description of the geology and soils of the Swan Coastal Plain may be obtained in Seddon (1972).

The Park contains two distinct soil associations. The Swan Soil Association occurs within the flood plain of the river and consists of clay-silt based wetlands and loamy alluvial river flats. It is rich in humus and relatively fertile. The Bassendean Soil Association occurs on the higher ground throughout the Park, and is typical of the Swan Coastal Plain grey infertile sands.

STRATEGIES

1. **Use clean soil, which is free of disease and weeds and similar to the natural soil types of the area when it is necessary to**

import soil into the Park. (CC, CALM, WP, , WC, WRC, MRWA)

10. THE RIVER AND FLOOD PLAIN

The objective is to manage the Park in a manner which will complement the Swan River Management Strategy (1988) and current SRT policies for the Canning River.

10.1 Management Responsibility

The SRT has overall responsibility for waterways planning, protection and management. It provides advice to the Minister for the Environment who is responsible for development control. (see section 7). The Water and Rivers Commission has responsibility for flood plain management planning and advises planning authorities on matters affecting the passage of floods along rivers and flood plains. Filling of the flood plain (from urban development and land filling) can result in loss of wildlife habitats which provide food and nesting grounds for fauna. Proposals for the filling of the flood plain need to consider the ecological importance of the area. Agencies or organisations such as CALM and the City of Canning will carry out management of the Park. A number of environmental issues are manifest within the Park, namely the presence of *Hydrocotyle ranunculoides* and other aquatic weeds and the increase in nutrient levels evidenced by the recent occurrence of algal blooms.

10.2 Hydrocotyle and other aquatic weeds

Hydrocotyle ranunculoides is an aquatic species native to Europe and possibly North and South America and is a common aquarium plant throughout Australia. First observed in Bannister Creek in 1983, it spread and covered large sections of the river by 1991. It is considered to have the potential to develop into a serious environmental, economic and recreational threat to the Park and other lakes and waterways. There appears to be no other infestation of *Hydrocotyle* in Australia and there is no established protocol for the control and eradication of this weed. Klemm et al (1993) has developed a short term control and a long term eradication strategy for this weed. The long term control of *Hydrocotyle* is still

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being debated and removal of the weir boards to allow a salt water wedge to move up the river has been considered. However, the removal of the weir structure isn't considered as a major focus in the long term strategy. The Trust considers that the weed is currently under control.

10.3 Water Quality

The Canning River is described as moderately nutrient enriched and annual blooms of the microscopic green algae *Euglena* have been reported in this section of the river since 1976. The reduction of nutrient loads would reduce the opportunities for species such as *Hydrocotyle ranunculoides* and *Euglena* to invade. Nutrient reduction is not achievable in the short term and must be considered as part of a long term strategy for the health of the river system.

Nutrient additions to the river is one important source of nutrient and the other is the nutrient contained in the sediments of the river. Even if all nutrient discharges to the river ceased, there is potentially enough nutrient stored in the sediments to maintain high nutrient levels.

The reduction of nutrient loads and sinks within the river is the long term aim of the SRT. The Trust is monitoring drains that enter the river to measure nutrient loads and identify major contributing catchments. Through the Swan Avon Integrated Catchment Management Program and the Swan Canning Cleanup Program the Trust in partnership with the community is focusing on the Southern River and Upper Canning Catchments. A project team supported by a catchment officer has been established to develop a catchment plan for the two catchments which will assist in reducing nutrient loads to the river. The Canning Catchment Coordinating Group is also involved in various activities on a whole of catchment basis with the aim of reducing nutrient loss from the catchment.

Chemical pollutants from industry and households may enter the river from stormwater outlets and petrol, oil, and hazardous chemicals may spill into the drainage network. Sewage pollution has occurred when power failure or equipment failure results in sewage discharge from Water Corporation pumping stations. This material may flow directly into the river or be held on the flood plain for a later clean up. The Department of Environmental Protection controls most of the pollution and industrial discharges to the river. The SRT, Chemistry Centre of WA, Health Department and the Water and Rivers Commission continually monitor the water quality of the rivers and

drains of the Swan and Canning River environs.

10.4 Kent Street Weir

The Kent Street Weir was constructed to maintain freshwater for agricultural purposes for settlers adjacent to the Canning River. The weir stops the movement of saline water in a previously tidal section of river. A secondary function is the access way the bridge provides across the river. The Water and Rivers Commission is responsible for the operation of the weir. Wooden barriers are removed in April, to allow for winter flow and re-installed in October to maintain the depth in the summer months. There is currently 1 (one) water licence for drawing water from the river between Kent Street and Nicholson Road. No further licences will be issued and existing licences will eventually be cancelled through natural attrition.

The construction of the weir has a long history. It started as a sandbag weir in 1913, and has had numerous reconstructions, the last being in 1962. The new pedestrian/cycle path over the weir was opened in 1989. The weir has considerable heritage value as there is a long history in getting the weir built, and its association with previous land uses, in particular farming. The weir has been proposed to be entered on the Register of Heritage Places, under the Heritage Act of Western Australia 1990.

The weir is also highly valued as a recreation resource. The weir has been a popular swimming and fishing spot since the 1920's and is still a major focus for recreation today.

The construction of the weir has impacted on the environment. The change from saline to freshwater in this section of the river has affected the vegetation and led to changes in species composition. The vegetation has adapted over the last 80 years to the changed salinity levels and removing the weir would cause another change in the vegetation community along the river's edge. It is also considered that the spread of Bulrush in this section of the river occurred due to the change in the salinity of the water. See Section 13 (Weeds). The outbreak of *Hydrocotyle ranunculoides* and algal blooms have also occurred in this section of the river. See Section 10.2 above. The weir also provides an increased area of freshwater which encourages bird life and provides recreational opportunities upstream.

The construction of the weir has impacted on the environment as noted above. However, the natural system has adapted to this change. The WRC will be undertaking studies on the wider implication of the weir's operation and the results of this research may influence a

decision on management of the weir. Support will only be given to change the operational function of the weir after full consideration of the long term ecological, recreational and social implications.

The management of the Park can make a contribution to maintaining a healthy river system by adopting the following recommended actions.

STRATEGIES

1. **Provide management support for the *Hydrocotyle ranunculoides* control strategy implemented by the SRT. (CC, WC, MFP, APB and CALM)**
2. **Support government initiatives to monitor and reduce nutrient levels in the Canning River catchment. (CC and CALM)**
3. **Investigate the use of nutrient traps and pollution control mechanisms in conjunction with storm water outlets in the Park, as advocated by SRT policies, (eg DE 4 Stormwater disposal). (CC, CALM and SRT)**
4. **Support and endorse the Swan River Trust Pollution Control Plan and the Western Australian Hazardous Materials Emergency Management Scheme which cover emergency procedures and recommendations regarding control of petrol, oil and chemical spills. (CC and CALM)**
5. **Adopt the management zoning system (Section 6). (CC, SRT and CALM)**
6. **Adopt management practices throughout the Park, especially in the recreation areas that do not add to the build up of nutrients and other pollutants in the river. eg. turf management program based on minimal nutrient loss. (CC and CALM)**
7. **Retain access across the river at the Kent Street Weir. (CC and CALM)**
8. **Continue management of the Kent Street Weir operations to control the water flow until**

studies present alternative options for management. (WRC)

9. **Liaise with WC to develop appropriate methods to address potential sewage overflow into the Park. (CC and CALM)**

11. FLORA AND VEGETATION

The objectives are to protect, conserve, rehabilitate and regenerate the indigenous vegetation in the Park.

The best example of estuarine habitat found along the Swan and Canning Rivers occurs between Riverton Bridge and Kent Street, Brock and Pen (1984). This is one of the main reasons for establishing the Park. Past land uses, and urban development, have had, and are continuing to, impact on the vegetation. The indigenous plant community structure and species composition have been altered by past agricultural practices, clearing, fires, landfill, rubbish dumping and stormwater disposal and has resulted in the Park being a vast repository of weeds. The construction of Kent Street Weir changed the river from saline to freshwater upstream to Nicholson Road, which has subsequently altered the streamside vegetation.

A number of exotic or introduced plants have been planted in the Park. These plants have been planted for amenity purposes in recreation areas, or are remnants of previous land use eg. Woodloes homestead, or other home sites in Ferndale flats or near Nicholson Rd and at other locations. Unless these plants are invasive or a liability to the conservation values of the Park, they should be retained for their heritage value. Given the loss of habitat and food sources, especially for birds, there may be instances where exotic species or non indigenous vegetation is grown to provide a food source all year round. This would require careful consideration by the managers of the Park. See also European History, Section 19.2, and Landscape, Section 20.

A comprehensive vegetation survey of the Park has been undertaken by Brock and Pen (1984) - see Map 4. The SRT is developing a vegetation data base of fringing vegetation of the Swan and Canning River system.

The plant communities found in the Park are summarised below.

11.1 The salt-marsh and shore-rush communities.

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The salt-marsh zone comprises three plant communities. The shore-rush community is associated with salt-marsh but is also found fringing the river. The salt marsh community is being affected by the mosquito control program (see Section 16, Mosquito Control).

The Samphire community occurs on tidal flats, often adjacent to barren salt-pans and is dominated by *Sarcocornia quinqueflora* (samphire). The community is separated from the river by a levee bank vegetated by shore-rush, sheoak and paperbarks.

The Shrubby Samphire community is dominated by *Halosarcia* species and is found adjacent to the Samphire community but at higher elevations. The community often occurs between samphire and the fringing forest of saltwater sheoak and swamp paperbark.

The Club-rush community consists of a single native species, *Bolboschoenus caldwellii* which is normally only found as part of the samphire community. The original samphire community is slowly being replaced by club-rush in areas where freshwater flushing from storm water drains occurs. Eg. Ferndale salt marsh and adjacent to Adenia Road lagoon.

The Shore-rush community is dominated by *Juncus kraussii* and is found in areas which are more frequently inundated by tidal water, where ground levels are higher and salinity is lower.

11.2 Fringing Forest Communities

Three communities comprise the fringing forest of the wetland.

The Saltwater Sheoak-Paperbark Community (*Casuarina obesa* and *Melaleuca raphiophylla*). This community fringes both the estuarine section of the river and some of the salt-marshes at higher elevations and lower salinity. These plant associations are typical of the Canning River Estuary.

The Paperbark Community (*Melaleuca raphiophylla*) is found in swampy areas, some of which have developed only recently with the advent of storm water drains and associated widespread clearing.

The Paperbark-Flooded Gum Community (*Melaleuca raphiophylla* and *Eucalyptus rudis*). Occurs on riverbanks upstream from Kent Street Weir, where freshwater conditions are experienced. The predominant understorey

species, the bulrush (*Typha orientalis*), seems to be encouraged by the high summer water level maintained by the weir.

11.3 Bulrush Communities

Two types of bulrush communities occur, characterised by different species and often distinguished by the different habitats they occupy.

The Bulrush (*Typha orientalis*) an introduced species, is typically found in areas subjected to freshwater flushing, ie. associated with stormwater runoff. It can withstand high salinity and quickly displaces salt-marshes subject to stormwater runoff. Whilst being able to occupy a variety of habitats, it grows most prolifically in stationary water.

The Narrow Leaf Bulrush (*Typha domingensis*) a native species, occurs upstream of the weir at higher elevations than the *Typha orientalis* community. This *Typha* has formed large stands in recent years by colonising abandoned wet pasture.

11.4 The Flooded Gum Community

(*Eucalyptus rudis*) occupies sections of the flood plain. Only two small patches of the plant community remain in Ferndale, to represent a community that was probably widespread along the rivers before settlement. The flood plain was cleared for pasture and only the flooded gums remain with an understorey of weeds and grasses.

11.5 The Veldt Grass Community

occupies the low sand dunes of the Bassendean Soil Association. The dominant species is veldt grass, an introduced perennial (*Ehrharta calycina*).

11.6 Disturbed Communities are characterised by the Flooded Gum Community and other areas once cleared and now abandoned, which are readily colonised by weeds and exotic species and eventually form weed communities.

Other native species such as orchids, sundews, fringe lillies, and trigger plants were identified by Brock and Pen (1984).

11.7 Aquatic Flora

Aquatic plants form the basis of the food chain and are the food source for larger vertebrates, fish, mammals and birds. The distribution of floral species in the river is governed by each species range of salinity tolerance. The estuarine component of the Park which occurs downstream of the Kent Street Weir supports aquatic plants which can tolerate both saline

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and fresh conditions. Macroalgal blooms have occurred between Shelley and Riverton Bridges. There are some patches of seagrass *Halophila ovalis* present in this area. There are

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Map 4



LEGEND

3	MELALEUCA JUNCUS COMPLEX (MJ)
7	BURBOSCHOMUS PREDOMINANT
1	HALOSARCA COMPLEX (H)
19	JUNCUS (J)
19	WATER POOL
20	MELALEUCA WOODLAND/WEED COMMUNITY
21	SCHIMMUS COMPLEX (S)
22	MELALEUCA WOODLAND
22	DEAD TREES
22	MELALEUCA/SHAMP COMPLEX
3	EUCALYPTUS-MELALEUCA RIVERBANK COMPLEX (E)
7	EUCALYPTUS RUDIS WOODLAND
1	TYPHA ORIENTALIS COMMUNITY (T)
8	BARE GROUND
8	WEED COMMUNITY
8	CASUARINA-MELALEUCA
8	GRASSES OR PASTURES
8	BALMEA JUNCUS COMMUNITY (B)
5	MOSAIC OF J & S
4	SARCODONIA COMPLEX (S)

CANNING RIVER REGIONAL PARK

VEGETATION

SOURCE
 Brock & Penn Murdoch University 1983

PLAN 6

no recorded persistent occurrences of floating aquatic plants downstream of the weir.

The Kent Street Weir has significantly slowed the water movement upstream and has provided opportunities for a range of floating and other aquatic species which have included *Hydrilla* and *Hydrocotyle*. Section 10, River and Flood Plain and Section 13, Weeds comments further on *Hydrocotyle* and species emergent on the river banks. *Hydrocotyle* control is favouring the proliferation of other submerged plants such as *Potamogeton*. Other aquatic plants recorded include a species of macroalga *Spirogyra* and three phytoplankton species *Oscillatoria*, *Euglena* and *Carteria*.

STRATEGIES

- 1. Document and monitor the vegetation and changes to plant communities in the Park. (CC, SRT and CALM)**
- 2. Control weeds (Section 13) and rehabilitate degraded vegetation communities according to priorities (Section 18). (CC, SRT and CALM)**
- 3. Revegetate degraded areas (see also Section 18), using indigenous seed sources collected within the Park or from the nearest viable source. (CC and CALM)**
- 4. Reduce the frequency of fire, utilising strategies set out in Section 14. (CC, , FRWSA, CALM)**
- 5. Investigate altering drainage outlets so that freshwater flushing of salt marshes no longer occurs. (see SRT Policies DE 4 - Stormwater disposal) (CC and WC)**
- 6. Stop rubbish dumping in the Park to prevent further introduction of weeds including garden escapees. (CC and CALM)**
- 7. Investigate any wilful damage to vegetation in the Park and prosecute offenders.(CC, SRT and CALM)**

12. FAUNA

The objectives are to maintain viable populations of all indigenous fauna in the Park, and to provide opportunities for visitors to view and gain an understanding of the Park's native fauna.

Conservation of wildlife habitat is one of the main reasons for establishing the Park. A range of habitats, provides refuge for a large number of birds, mammals, reptiles, insects, spiders, tortoises and fish. Brock and Pen (1984) collated information and carried out further observation to compile a detailed assessment of the fauna of the Park.

12.1 Avian Fauna

A total of 97 bird species have been observed in the Park. The total includes 44 waterbirds, 41 forest and woodland birds and 12 common suburban birds, being about half the number of bird species found on the Swan Coastal Plain. A wide diversity of species exists due to the diversity of habitats in the reserve, namely: open estuarine waters, open riverine waters, beach, mudflat, salt-marsh, rushes, bulrushes, estuarine or riverine fringing forests, forest, woodland, and grassland.

The waterbird records of the Park have been incorporated into the South-West Waterbird Project which has been carried out by the Royal Australasian Ornithologists Union (RAOU), the former Department of Fisheries and Wildlife and later CALM. Of the 11 basic waterbird habitat types recognised in the South-West Waterbird Project, 8 are found in the Park.

The Park is of regional importance as a number of birds use it to breed, many others for feeding and refuge and other migratory birds use it during the summer months. Australia is a signatory to international treaties such as the Japan-Australia Migratory Birds Agreement (JAMBA) and the China-Australia Migratory Birds Agreement (CAMBA). Australia is also a signatory to the Ramsar Convention on Wetlands. There is an obligation under these agreements to protect the wetlands which provide habitat for migratory birds and to wisely manage wetlands generally. An extensive list of birds seen in the Park is found in Brock and Pen (1984) and is also available from the RAOU.

12.2 Terrestrial Fauna

12.2.1 Mammals

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Two mammals, the Brush-tail Possum (*Trichosurus vulpecula*) and the Short nosed Bandicoot (*Isodon obesulus*) inhabit the Park and it is thought that native water rats (*Hydromys chrysogaster*) may also be present.

12.2.2 Reptiles and Amphibians

Five large reptiles are found within the Park and there are also many smaller lizards which are abundant, providing a rich source of food for predatory birds. The five large reptiles are; Long-necked tortoise (*Chelodina oblonga*), Dugite (*Pseudonaja affinis affinis*), Western Tiger Snake (*Notechis scutatus occidentalis*), Bob-tailed Skink (*Tiliqua rugosa*) and the Western Bearded Dragon (*Pogona minor minor*).

Numerous amphibians (frogs) inhabit the area. Species recorded include *Litoria moorei*, *Litoria adelaidensis*, *Heleoporus eyrei* and *Crinia glauerti* and *Crinia insignifera*.

12.2.3 Insects and Spiders

Insects are abundant throughout the Park and include mosquitoes (see Section 16), butterflies, dragonflies, damsel flies, scorpion flies and grasshoppers.

Spiders are also abundant throughout the Park and include (Brock and Pen 1984): the Golden Orb-Weaving Spider (*Nephila edulis*), Saint Andrew's Cross Spider (*Argiope aetherea*) and the Christmas Spider (*Gasteracantha minax*).

12.3 Aquatic Fauna

Studies by McDermot (1981) and Bridgewater and Potter (1982) cited in Brock and Pen (1984) list species of fish found in the Canning River with the latter report carried out specifically in the Park. The most abundant fish was Perth Herring. There are also a number of fish important for recreational fishing which includes the Bar-tailed Flathead, Yellow-eye mullet, Black Bream and Cobbler. A list of the fish species found in the Park is to be found in Brock and Pen (1984).

Zooplankton occurring in greatest abundance include *Acartia clausi*, *Sulcanus conflictus*, *Gladioferens imparipes* and *Oithona sp.* Benthic invertebrates are important to fish and birds which feed on shallow sand mudflat areas of the river and include bloodworm, tubeworm, crab, shrimp, prawn and mussels. The introduced freshwater snails *Lymnaea columella* and *Physa sp.* have also been recorded.

STRATEGIES

1. Continue monitoring, researching and surveying the fauna of the Park. (CC, Educational Institutions, WA Museum, RAOU and CALM)
2. Repeat the type of bird observation study carried out by Brock and Pen (1984) to help ascertain trends of bird numbers and species numbers over the last 10 years. (CC and CALM)
3. Identify and protect bird habitat and breeding areas. (CC and CALM)
4. Identify seasonal mowing areas and areas not to be mown to preserve habitat and breeding sites. (CC and CALM)
5. Apply the intent of the JAMBA and CAMBA migratory bird agreements in the Park. (CC and CALM)
6. Design and locate facilities and infrastructure according to approved plans, to minimise environmental damage and maximise visitor appreciation. (CC and CALM)
7. Continue to develop opportunities to promote an understanding and appreciation of the Park's fauna by:
 - developing an interpretation plan for the Park (see Section 29) (CALM)
 - supporting and encouraging the Canning River Volunteers (see Section 29). (CC and CALM)
8. Educate neighbours about the effects of the dumping of exotic fish in the river system e.g. Carp. (CC and CALM)

13. WEEDS

The objective is to control and where possible, eradicate weeds with the potential to cause serious environmental degradation, using methods which minimise impacts on native species and the environment.

A weed is defined as a plant or species growing out of place. They may originate from within a region, interstate or overseas

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and may or may not be declared under the Agriculture and Related Resources Protection Act 1976.

The presence of weeds is a serious problem in the Park. The existing plant communities as described in the previous section, include established weed communities and many indigenous plant communities that are suffering from weed infestation and competition. The area occupied by weeds continues to grow and unless controlled may lead to the eventual demise of the indigenous vegetation.

There are many reasons for the presence of weeds in the Park. Past land uses such as clearing and developing pasture for grazing, introduced many grass and weed species. Soil disturbance from vehicle access, construction of paths, other facilities or drainage channels allows weeds to establish. Frequent fires promotes the growth of weeds. Drainage outlets that flush out saline wetlands with fresh water promote the growth of weeds to the detriment of the existing vegetation. Garden refuse dumped in the Park introduces many plants that vigorously compete with native vegetation. The dumping of aquarium contents in the river system is also discouraged as this can lead to the spread of aquatic weeds.

The following species listed and located by Brock and Pen (1984) represent potentially serious weed problems and need a control program to address the problem. Blackberry (*Rubus fruticosus*), Caster Oil Bush (*Ricinus communis*), Pampas grass (*Cortaderia selloana*), the giant reed (*Arunda donax*), Pepper tree (*Shinus terebinthifolius*), Coral tree (*Erythrina caffra*), Fig tree (*Ficus sp.*), and Willow tree (*Salix sp.*) of which only blackberry is a declared noxious weed.

Introduced grasses such as veldt, kikuyu and buffalo are well established in the Park, sometimes to the total exclusion of the indigenous vegetation. Grasses used for amenity purposes in parkland settings need to be controlled to stop them invading remnant vegetation. The SRT (1993) trialed the use of 'flauziflop-butyl' to control introduced grasses amongst native vegetation, with promising results.

Bulrushes have invaded many sections of the Park. Storm water outlets in many instances flush fresh water through wetland areas resulting in the displacement of salt-marsh and a change in the species composition of the paperbark-flooded gum (riverbank) community. *Typha orientalis*, the introduced bulrush, is the major invading species to the

detriment of the local bulrush species *Typha domingensis* which is being confined to colonisation of abandoned wet pasture lands. Brock and Pen (1984) document the invasion of the bulrush community. Pen (1981) has shown a relationship between bulrush invasion and a decrease in salinity possibly due to freshwater flushing from storm water outlets.

Whilst *Typha orientalis* is an introduced species, it does perform a number of valuable functions. It provides nesting sites and a food source for swamp hens and other creatures. Bulrush stands may also filter and store quantities of nutrients, thus helping to control outbreaks of blue-green algae. Filter beds would need to be cleaned out to remove nutrients from the system. *Typha* will colonise areas given the right conditions and then stabilises. Unless *Typha* appears to be replacing an entire stand of native species or is covering the entire wetland, it should be left to complement the existing communities. If removed, *Typha* will continue to colonise areas if conditions remain favourable. Its removal from the Park therefore needs to be carefully considered.

All methods of weed control need to be considered ie. chemical, physical, or biological. Ecological considerations place constraints on weed control, as side effects such as those on native plants or habitat, or the pollution of water bodies, may rule out the use of some techniques. There are also financial constraints on the amount of weed control that can be carried out.

Weed control can greatly benefit from community involvement. Management has only limited resources and weed control can be very labour intensive. Management co-ordinated community involvement in eradication or control programs and replanting is highly desirable.

STRATEGIES

- 1. Minimise physical disturbance to plant communities by controlling vehicle and pedestrian access to and within the Park. If utility or facility provision occurs in the Park, rehabilitation and revegetation should be considered as an integral part of the works program. (CC, CALM, WP, WC, WRC)**
- 2. Develop criteria for setting priorities for weed control and then carry out a co-ordinated**

- weed control program. (SRT, CALM, CC, APB)
3. Weed control programs to be part of a rehabilitation strategy and not carried out in isolation. See Section 18 Rehabilitation. (CC, SRT, CALM, APB)
 4. Investigate controlling *Typha orientalis*, the introduced bulrush, including modification of stormwater outlets. (APB, CC, SRT and CALM)
 5. Set boundaries to grass areas used for recreation and control the spread of grasses accordingly. (CC and CALM)
 6. Investigate the operational function of the Kent Street weir as a method to control *Typha orientalis*. (SRT)
 7. Manage and control weed infestations in accordance with CALM Policy Statement No.14. Weeds on CALM Land. (CALM)
 8. Adopt a fire management plan for the Park to help control weeds caused by unwanted fires. (See Section 14). (CC and CALM)
 9. Document and continue to monitor the extent of weed distribution and abundance in the Park and relate results to previous studies to determine their spread. (CC and CALM)
 10. Educate neighbours about rubbish dumping and garden refuse, especially in new areas, and the dumping of aquarium contents in the river system to assist in reducing weed and aquatic weed problems. (CC and CALM)
 11. Ensure the non-target effects of any use of chemicals to control weeds in minimised. (CC and CALM)
 12. Seek alternatives to chemical control of weed infestations when undertaking works in the Park. (CC and CALM)
 13. Liaise with WC regarding weed infestations and control

methods, in creeks and drains that flow into the Park. (CC and CALM)

14. FIRE

The objective is to protect people, property and the conservation values of the Park, by preventing fire from occurring, except for conservation purposes.

Large areas of vegetation in close proximity to urban development will be threatened by fire from natural causes but in many instances, fires will result from human activities, being either accidentally or deliberately lit.

Wildfires need to be avoided in the Park because they threaten human life, property and nature conservation values. Wildfire suppression is the responsibility of the Fire and Rescue Service of WA.

Prescribed burning may be practiced in the Park to protect its values. Most native plants regenerate successfully after periodic burning, a high proportion of which have a fire dependency for reproduction. This involves regeneration from sprouting or seeds. The frequency of fire in the Park needs to be managed so that burning regimes optimises the protection of values, the special reproductive characteristics of sensitive plants and the maintenance of biological diversity.

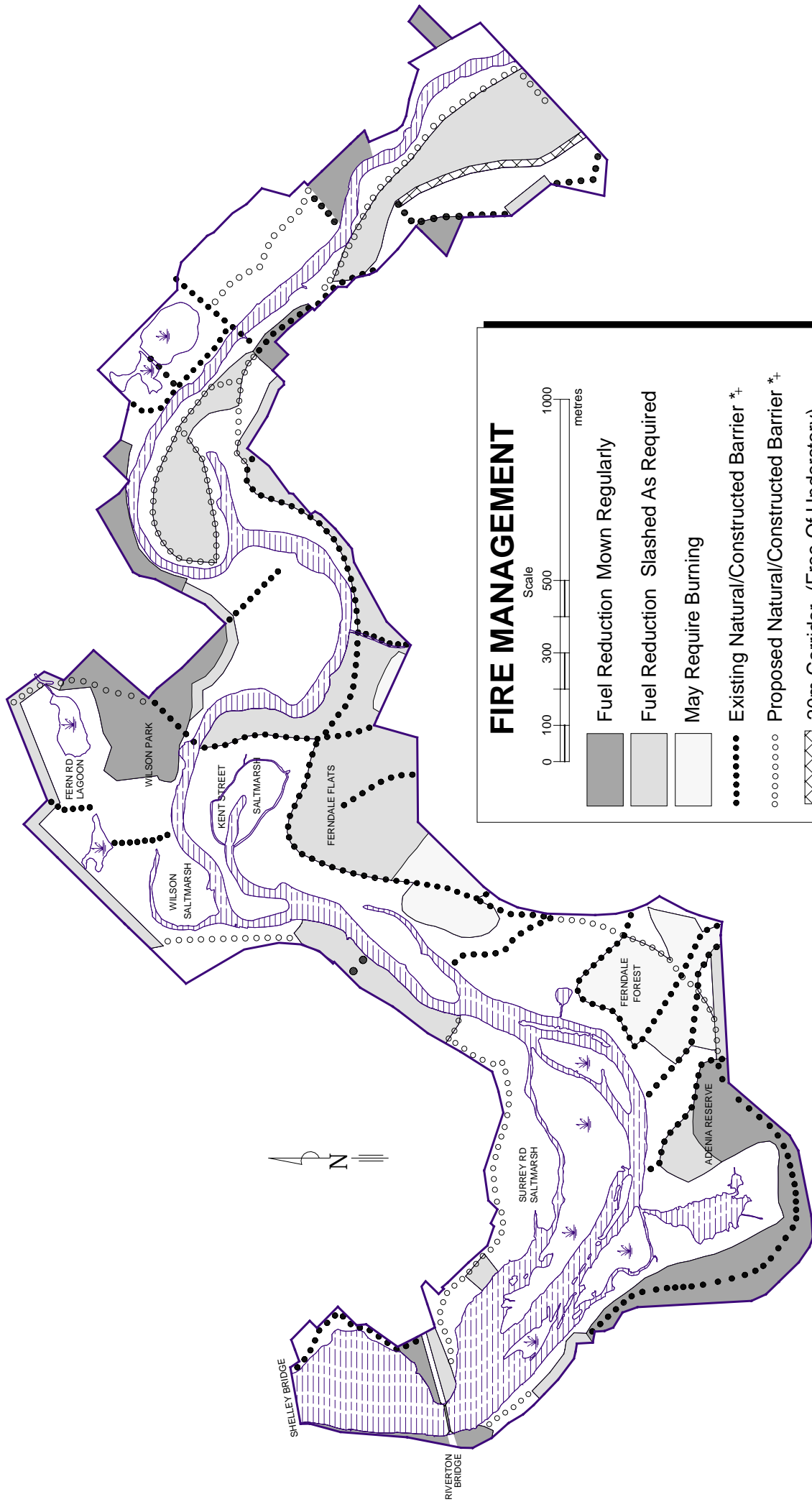
Fires that occur in the Park need to be controlled quickly and the frequency of fires reduced. The Fire Management Strategy that is proposed to help control wildfire in the Park is shown on Map 5. The strategy includes maintaining numerous fire breaks to help control fire and fuel reduction, eg mowing and slashing grassed areas. Large stands of Bulrush also pose a fire hazard. The Department of Conservation and Land Management is guided by Fire Management Policy (1987) Policy Statement No.19.

STRATEGIES

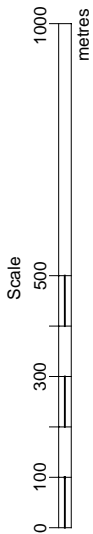
1. Develop and adopt fire management objectives and strategies that protect environmentally sensitive areas from frequent wildfire and including pre suppression activities. (CC and CALM)
2. Maintain a record of the date, cause and impact of all fires in




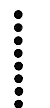


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the Park. Analyse trends and take fire prevention measures where necessary. (CC and CALM)



FIRE MANAGEMENT



-  Fuel Reduction Mown Regularly
-  Fuel Reduction Slashed As Required
-  May Require Burning
-  Existing Natural/Constructed Barrier *+
-  Proposed Natural/Constructed Barrier *+
-  20m Corridor (Free Of Understory)

* tracks, dual use path and drains

3. **Provide the FRSWA with a plan of the Park which sets out all access points, roads and tracks and strategies for protecting highly sensitive areas in the Park. (CC and CALM)**
4. **Where possible, reduce fuel loads by mowing large open grassed areas. Mown areas to be delineated so that mowing practices do not inhibit natural regeneration and fauna habitat. (See Section 12 Rec. 6) (CC and CALM)**
5. **Consider constructing future Dual Use Paths to a standard that will carry fire trucks, so that access is improved to strategic sections of the Park. (CC and CALM)**
6. **Ensure that adequate fire fighting equipment, including equipment developed for fire suppression that operates on the river, is available to the Park. (CALM and FRSWA)**
7. **Allow burning, specifically for the protection of values and the management of native species. (CALM)**

15. EROSION

The objective is to control erosion that is not part of a natural process or where property or assets may be lost.

Erosion and deposition occurs naturally in any river system but there are many factors which prevent the river system from acting naturally. Localised erosion can occur at the surface from wave action, being either wind induced or in heavily trafficked waters, from boat wash and foreshore use. Erosion can occur where banks are altered to provide access for boats and canoes. Degradation of fringing vegetation will also ultimately result in exposed river banks leading to erosion. Uncontrolled foreshore access for pedestrians may also lead to erosion of river banks.

Various options exist to control erosion. Both the Department of Marine and Harbours (1990) and the Swan River Trust (1993) have strategies which include natural solutions and in some instances engineering solutions. Depending on the situation, either type or

both types of solution can be used. The Swan River Trust (1994) advocates stabilisation of river banks using natural vegetation where ever possible.

The Swan River Management Strategy (1988) recommendation A 70, that the need to restrict power boat usage and control boat launching areas be investigated, is endorsed in this plan (see Section 24).

STRATEGIES

1. **Implement measures to deal with erosion by planting vegetation as appropriate and consistent with existing vegetation communities. (CC and CALM)**
2. **Construct suitable bank protection if other measures fail to relieve erosion. (CC and CALM)**
3. **Control access to areas suffering from erosion or likely to erode. (CC and CALM)**
4. **Protect shoreline vegetation by controlling access and the spread of weeds. (CC and CALM)**

16. MOSQUITO CONTROL

The objective is to support an appropriate mosquito control program and to minimise the environmental impact of control measures.

Wetlands in urban areas often require a management response to mosquito populations. Brock and Pen (1984) list eleven species of mosquitoes that occur along the Canning River. The mosquitoes may cause a nuisance to nearby residences and are a public health risk as some species have the potential to transmit diseases such as Ross River Virus. The Health Department of WA administers a mosquito control program that subsidises Contiguous Local Authority Groups (CLAGs) that have been identified as having locally contracted mosquito-borne viruses, to control mosquitoes and protect from viruses. The City of Canning would therefore have to demonstrate known cases of locally contracted mosquito borne disease before qualifying for this assistance. The NPNCA also has a formal policy on mosquito control.

Mosquitoes also form part of the diet of local and migratory birds. Ninox Wildlife Consulting (1990) showed that peaks in the number and abundance of waterbird species in mosquito breeding areas during the summer months coincides exactly with an equivalent peak in populations of the mosquito *Aedes vigilax*. This species is known to be a Ross River Virus carrier north of Carnarvon. Reports of the virus being recovered from the south west population around the Perth area have only recently (1996) been recorded.

The City of Canning has an extensive mosquito control program in place. Breeding sites have been identified and some sections of the wetlands altered by drainage and filling to reduce mosquito nuisance. Constant monitoring is carried out and, when necessary, chemical control methods are used to complement the physical modifications to breeding areas.

The effectiveness of the mosquito control program however does have ramifications for the natural environment. Salt marsh areas are drained by minor disturbance to the surface or runnelling which is very effective. The water is directed to larger drainage channels which link to the river. Over time the larger drainage channels have grown in size and length as machines are used to dig out silt and keep them flowing. The drainage activities have had the effect of altering the salt marsh vegetation. Constant monitoring of breeding sites requires vehicle access to many sensitive sections of the Park. Constant access can cause areas to degrade and may contribute to creation of breeding habitat for mosquitoes. The amount and type of access to breeding areas needs to be monitored.

STRATEGIES

- 1. Review the mosquito control program annually, for its effectiveness in reducing mosquito numbers and continue to seek alternatives which are environmentally acceptable. (CC and CALM)**
- 2. Monitor mosquito control management practices and amend if necessary. (CC and CALM)**

17. PETS AND FERAL ANIMALS

The objective is to minimise the impact of pets and feral animals on the Park's environment.

17.1 Pets

The ownership of pets in close proximity to the Park has ramifications for park management. Domestic cats are likely to hunt for birds, reptiles and other creatures. Cat owners should be encouraged to keep them at home especially at night and have them de-sexed to help control feral populations. Dogs may roam unattended in the Park or be taken there for exercise. Dog walking is a common activity in the Park and a legitimate activity in certain areas. However, restraint of dogs is necessary if they are not to have an adverse effect on wildlife and on the activities of other park users. Dog owners should not allow their dogs to roam. Other pets such as rabbits and rats that escape into the Park will also need to be removed. Pet fish should not be disposed of in the river, or waterways and drains flowing into it.

17.2 Feral Animals

Feral cats, foxes and rabbits occur in the Park but precise numbers are not known. All these animals have a detrimental effect on the Park's wildlife and their control and removal will help protect the integrity of the Park. Feral ducks (which are mostly escaped domestic ducks) should be monitored for any interbreeding with native ducks and the hybrids removed from the Park. Hybridisation between domestic and native ducks is believed to be a threat to the survival of native duck species. Park users should be discouraged from feeding ducks and other birds. Artificial feeding encourages greater numbers of birds than can be naturally supported. Uneaten food such as bread also provides increased nutrient (in an already nutrient rich river) and decaying bread can also allow botulism to spread in bird populations.

STRATEGIES

- 1. Exclude dogs from conservation areas; ensure dogs are on a leash elsewhere in the Park except for gazetted dog exercise areas. (CC and CALM)**
- 2. Install dog excreta bins in gazetted dog exercise areas where appropriate. (CC)**
- 3. Review the current gazetted dog exercise areas within the Park in consultation with CALM, in**

light of strategies within this study. (CC)

- 4. Educate local residents about the impact that cats and domestic escapees may have on native fauna, with the aim of encouraging residents to either not own pet cats, rabbits and rats or strictly control them (eg keep cats in at night). The danger of dumping pets in the Park should also be included. (CC and CALM)**
- 5. Implement baiting for foxes in the conservation zones coinciding with an appropriate warning system for park users, especially dog owners. Run an education program in conjunction with the baiting program. (CC and CALM)**
- 6. Monitor the Park for feral animals (eg cats, hybrid and exotic ducks, foxes, rats), determine their impact on conservation values, and investigate control options. (CC and CALM)**

18. REHABILITATION

The objective is to restore degraded areas of the Park to a stable condition, resembling the natural environment.

Environmental degradation is a major management issue in the Park. Uncontrolled vehicle and pedestrian access in the past has caused severe degradation. The Access and Circulation Plan (Section 25) sets out roads and tracks in the Park. Other areas are to be left to rehabilitate but should be monitored and active restoration carried out if necessary.

Past land uses have resulted in modifications to vegetation communities (Section 11) and weeds have also become a major problem (Section 13). The provision of utilities and facilities in the Park (Section 26) also adds to the areas that need rehabilitation works carried out.

A variety of techniques are available for landscape rehabilitation and the most appropriate is determined by the specific circumstances encountered. All plant material or seed used in rehabilitation works should originate from the Park or the nearest viable

seed source, in order to conserve the integrity of the vegetation communities. Riverbank regeneration should be given a high priority.

Local residents and school groups should be encouraged to be actively involved in the propagation and rehabilitation works (see Section 33). These activities must be co-ordinated by the joint managers of the Park.

STRATEGIES

- 1. Prepare a rehabilitation plan and set priorities for rehabilitation works. (CC and CALM)**
- 2. Co-ordinate rehabilitation works between all the land managers and relevant community groups. (CC, SRT and CALM)**
- 3. Close and rehabilitate unnecessary vehicle tracks and footpaths. (CC and CALM)**
- 4. Rehabilitate areas immediately following the installation of utilities or recreation facilities. (Implementing Authority, co-ordinated by CC and CALM)**
- 5. Carry out rehabilitation works as part of any weed control program. (CC and CALM)**
- 6. Establish a seed collection of fire sensitive plants within the Park. (CC and CALM)**
- 7. Use locally collected seed (from the nearest viable source) for propagating plants or for direct seeding. (CC and CALM)**
- 8. Actively involve members of the local community and schools in rehabilitation works. (CC and CALM)**

19. CULTURAL RESOURCES

19.1 ABORIGINAL HISTORY

The objective is to protect and where appropriate interpret Aboriginal cultural features in the Park.

An insight into Aboriginal associations with the Canning River is summarised in Richards

Part C Conservation

(1991). At the time of European settlement, the Swan and Canning basins supported a population of Aborigines. At least six family groups are thought to have claimed territorial rights to the land which is now the metropolitan area. The wetlands were important to Aborigines for food and materials for shelter and artefacts. The Department of Aboriginal Sites has identified an archaeological site (S1989) within the Park. Numerous other sites have been recorded outside the boundaries of the Park. Other sites may exist within the Park, so it is important that people involved with park management and the Canning River Volunteers (in liaison with the Aboriginal custodians) should be familiar with the identification of sites and artefacts and be acquainted with the Aboriginal Heritage Act 1972-1980.

STRATEGIES

- 1. Ensure that management obligations are fulfilled according to The Aboriginal Heritage Act 1972-1980, before any development takes place. (CC and CALM)**
- 2. Arrange for an Aboriginal site study of the Park to be undertaken and ensure Aboriginal consultation is part of the process. (CC and CALM)**
- 3. Incorporate information on the Aboriginal history of the Park into interpretive material where appropriate. (CC and CALM)**

19.2 EUROPEAN AND ASIAN HISTORY

The objective is to protect and where appropriate interpret European and Asian historical features of the Park.

An Historic Survey of this section of the Canning River was carried out by Richards (1991) which "is not a history of the Park itself but rather a guide to the reference material and sources of information about how the area now occupied by the Park was used and settled in former times".

This document makes fascinating reading and provides ample material for the preparation of interpretation material, park signs, information displays and for the Canning River Volunteers. The information served as a valuable reference during the development of the Recreation Development Plans.

A historic walk has been established in Adenia Reserve which identifies a number of different features in that area including a Sikh Cemetery. Plaques associated with this walk have been vandalised and need to be maintained. An information shelter is in place but requires information panels.

One prominent historic site with strong associations with the Canning River is Woodloes Homestead located in Woodloes Street. The property is significant locally and to the State. The homestead is owned by the City of Canning and is open to the public. With the rear of the property to be included in the Park, a site plan is needed so that connections between the homestead and the river can be maintained. See also Section 26.

STRATEGIES

- 1. Continue to collate information on historic sites located in the Park and establish an archive of visual and written material including calibrated photography to be available for interpretive use and conservation. (CC, Historical Societies and CALM)**
- 2. Nominate sites for heritage listing on either the Municipal Heritage Inventory, or State and National Heritage Lists. (CC and CALM)**
- 3. In accordance with the ICOMOS Burra Charter, develop management guidelines for any historic sites in consultation with other appropriate conservation bodies, such as the WA Museum, WA Maritime Museum, National Trust, Australian Heritage Commission and historical societies. (CC and CALM)**
- 4. Identify, and conserve or restore important sites such as the clay pits, old bricks and Sikh burial ground in Adenia Reserve, the tank stand in Ferndale flats and the wharf near Wharf St. (CC and CALM)**
- 5. Where appropriate, incorporate information on the European and Asian history of the Park into interpretive material. (CC and CALM)**

6. **Encourage the Woodloes Homestead managers to develop a site plan which includes links with the Park. (CC and CALM)**
7. **Maintain the historic walk developed in Adenia Reserve. (CC and CALM)**

20. LANDSCAPE

The objective is to maintain and improve the natural and cultural landscape qualities of the Park.

Landscape description

The Park lies within the Swan Coastal Plain landscape character type (CALM 1994 Reading the Remote, Landscape Character Types of WA). The coastal plain gently slopes westwards from the Darling Scarp to the Indian Ocean. The Park is located on the lower reaches of the Canning River where it meets with the Swan Estuary. This area provides some of the least disturbed estuarine and wetland vegetation associations in the entire Swan-Canning River System. The Park includes a variety of different environments which include salt water estuary and islands, salt marshes and riverine environment, freshwater environment, a billabong and modified forest and woodland on the flood plain.

As well as natural resources, cultural features play an important role in the landscape qualities of the Park. Human habitation has had a great impact. Firstly, the Park is surrounded by urban development. Secondly, modifications within the Park are many and include, large exotic grassed areas, vehicle and footbridges, Kent Street Weir, recreation facilities and parkland developments such as garden beds and reticulated lawn areas, carparks, toilets and other built structures, signs, fences, public utilities (power lines, drains, drainage channels, pits etc.) and degraded areas (vehicle tracks, weed infested areas, areas devoid of vegetation) and so on.

Landscape Quality

The Park landscape encompasses areas which can be described as high, medium, or low visual quality. These categories can be mapped using the Visual Management System. Once mapped, any modifications within the Park and adjacent to the Park can be assessed according to the visual quality rating and the ability of the landscape to incorporate the proposed change.

There are many areas of high scenic quality. Most of these occur in the Conservation Zone and include natural areas with water as a major element. Given the relatively flat nature of the Park, it is possible to experience total enclosure in a natural setting whilst being within metres of urban development. Other areas of high scenic quality include Parkland settings usually associated with water.

A modified landscape is not always considered negatively. Having built structures in the middle ground (a bridge for example or the Central Business District skyline in the background) with a natural foreground and middle ground can also contribute to high visual quality.

Areas of low visual quality would include, large cleared areas, highly degraded areas (eroded or weed infested) built structures such as drainage outlets, back fences of houses, dumped rubbish, factories, large mown areas, power lines and other utilities in the Park.

Landscape Character

The objective of this section is to maintain or improve the natural and cultural landscape of the Park. Whilst this means protecting natural areas in the Park, in other instances this involves rehabilitating modified landscapes of the Park. Rehabilitation works should use indigenous (local) plants grown from locally collected seed or from the nearest viable seed source. The created landscape should therefore resemble the character of the original landscape even if it has not been possible to replicate the landscape due to lack of technology or resources. View corridors, incorporating the use of low vegetation, should be considered in rehabilitation planning. This policy of planting only local native plants does not apply to Woodloes Homestead (immediate vicinity of the house), the farm area adjacent to Nicholson Road and the house site at Ferndale flats or other historical sites provided that particular plants are not invasive thereby creating difficulties for management. In general, planting native plants that are not endemic to the area should be avoided.

STRATEGIES

1. **Classify landscape features in the Park according to the Visual Management System and co-ordinate this with SRT landscape plans for the Canning River. (CALM)**
2. **Identify and protect the important landscapes in the Park. (CC, SRT, MFP, CALM)**

3. **Assess the visual impacts of development proposals on the periphery of the Park so that adverse impacts can be avoided. (CC, SRT, CALM)**
4. **Rehabilitate degraded and weed infested areas according to rehabilitation priorities. (CC and CALM)**
5. **Provide a high standard sign system based on the CALM sign manual. (CC and CALM)**
6. **Ensure recreation facilities and park furniture are of a high standard and suited to the surrounding landscape. Facility provision should be planned and agreed to by the joint managers. (CC and CALM)**
7. **Ensure utilities and associated structures are sympathetic in design, materials and colour to complement surrounding landscape elements and be sited away from natural focal points, out of viewer sight lines and where vegetation or landform screening can be utilised. Liaison with Western Power, WC and other authorities before works are carried out in the Park is essential. (CC and CALM)**

PART D RECREATION

21. PRINCIPAL RECREATION DIRECTIONS

RECREATION GOAL

Provide the public with recreation opportunities and facilities that are consistent with other management objectives and that minimise conflict between users.

The objectives are to:

- **Ensure recreation is in accordance with the City of Canning and CALM recreation policies and guidelines.**
- **Promote recreational experiences for the public use areas of the Park which are:**
 - **based on enjoyment and appreciation of the Park**
 - **equitable**
 - **non-disruptive**
 - **consistent with the natural settings and conservation values of the Park.**
- **Integrate recreation experiences with interpretation and education programs.**

RECREATION STRATEGY

The Park is a large open space surrounded by suburbs and so has a high demand as a recreation facility. The strategy for recreation management is to encourage non-disruptive use of the Park while ensuring that the special qualities of the Park are not compromised. Activities which result in conflict between users will be discouraged. In planning for recreation, the Park will be considered as a regional resource and not just available to local groups.

A Master Plan and development plans for specific recreation areas has been developed in consultation with the City of Canning and CALM. (See Section 23 Master Plan).

22. VISITOR USE

The objective is to provide a range of recreation opportunities in the Park, while minimising environmental impacts and conflicts between visitors.

A Recreation Survey was carried out by P & M Tooby Pty. Ltd.(1990) in the Park, in order to provide a basis for recreation planning for the future. The survey lists a range of activities taking place in the Park, with the most common being: cycling, walking, sightseeing, picnicking, swimming, boating, relaxing, ball games and walking the dog. Natural features, such as the river and bushland, combined with parkland settings, attracted people to the Park.

Adventure play provides a wonderful experience for children and is encouraged.

People travelled to the Park by a variety of means, with the greatest numbers coming by car but large numbers also cycled. Smaller numbers either walked or came by canoe. Of 300 people interviewed, most lived nearby and 90% stayed for 1-3 hours. A strong message of the value of this natural area was conveyed with many people wanting its current character to be maintained.

Casual observation of visitor numbers and use also indicates that facilities are generally meeting demand. The Park is heavily used on weekends and experiences infrequent heavy use during special events such as Miniature Railway activities.

STRATEGIES

1. **Provide and maintain suitable and safe facilities and services to cater for visitors. (CC and CALM)**
2. **Promote visitor activities which are appropriate to the natural and cultural values of the Park. (CC and CALM)**
3. **Continue to monitor visitor numbers, activities and preferences within the Park. (CC and CALM)**
4. **Provide suitable interpretive information for park users. (CC and CALM)**
5. **Install emergency equipment at appropriate locations. (CC and CALM)**

23. RECREATION MASTER PLAN

The objective is to develop a Master Plan to facilitate recreational opportunities in the Park which is supportive of other management objectives.

A Master Plan for the Park has been prepared. This plan reviews and updates where necessary, a previous Master Plan prepared for the Park by P & M Tooby Pty Ltd in 1990. A summary of the recreation facilities proposed for the Park can be seen on Map 6.

The Master Plan reflects the Management Zones and land uses described in Section 6. Access, internal circulation and type of facilities provided was determined by the zone, being either Conservation, Natural Environment Uses, or Recreation.

The Conservation Zones are to be protected, with limited access offered by either Dual Use Path or walk tracks with the emphasis being on the enjoyment of nature. The Natural Environment Use Zones have greater access and the emphasis is on indigenous vegetation regeneration necessitated by previous land use practices, ie grazing. Provision of some facilities is anticipated.

The designated Recreation Zones are the most intensively used and highly modified sections of the Park. The emphasis has been on providing well designed recreation areas without detracting from the natural values of the Park. Facility provision for visitors is concentrated in these areas.

The Master Plan accompanied by Recreation Development Plans for most recreation zones (see Section 25) is available for viewing at the City of Canning Offices.

STRATEGIES

- 1. Implement the Master Plan and associated Recreation Development Plans. (CC and CALM)**

24. ACCESS

The objective is to provide a structured access system to and within the Park, while ensuring park

values and park users are not adversely affected.

Having a large park surrounded by urban development means that access is a major issue. Whilst access for recreation and education purposes is a legitimate use, uncontrolled vehicle and pedestrian access has severely degraded some areas. Easy access has also meant that dumping of rubbish and garden refuse has also been a problem.

The Park may be accessed by vehicle, pedestrians, bicycle, boat, canoe and wheel chairs. An access and circulation plan was prepared as part of the Recreation Development Plan process and is available at the City of Canning.

Road access

Major arterial roads pass within close proximity to the Park and include the Albany Highway to the north, the Leach Highway to the west and Nicholson Road to the east.

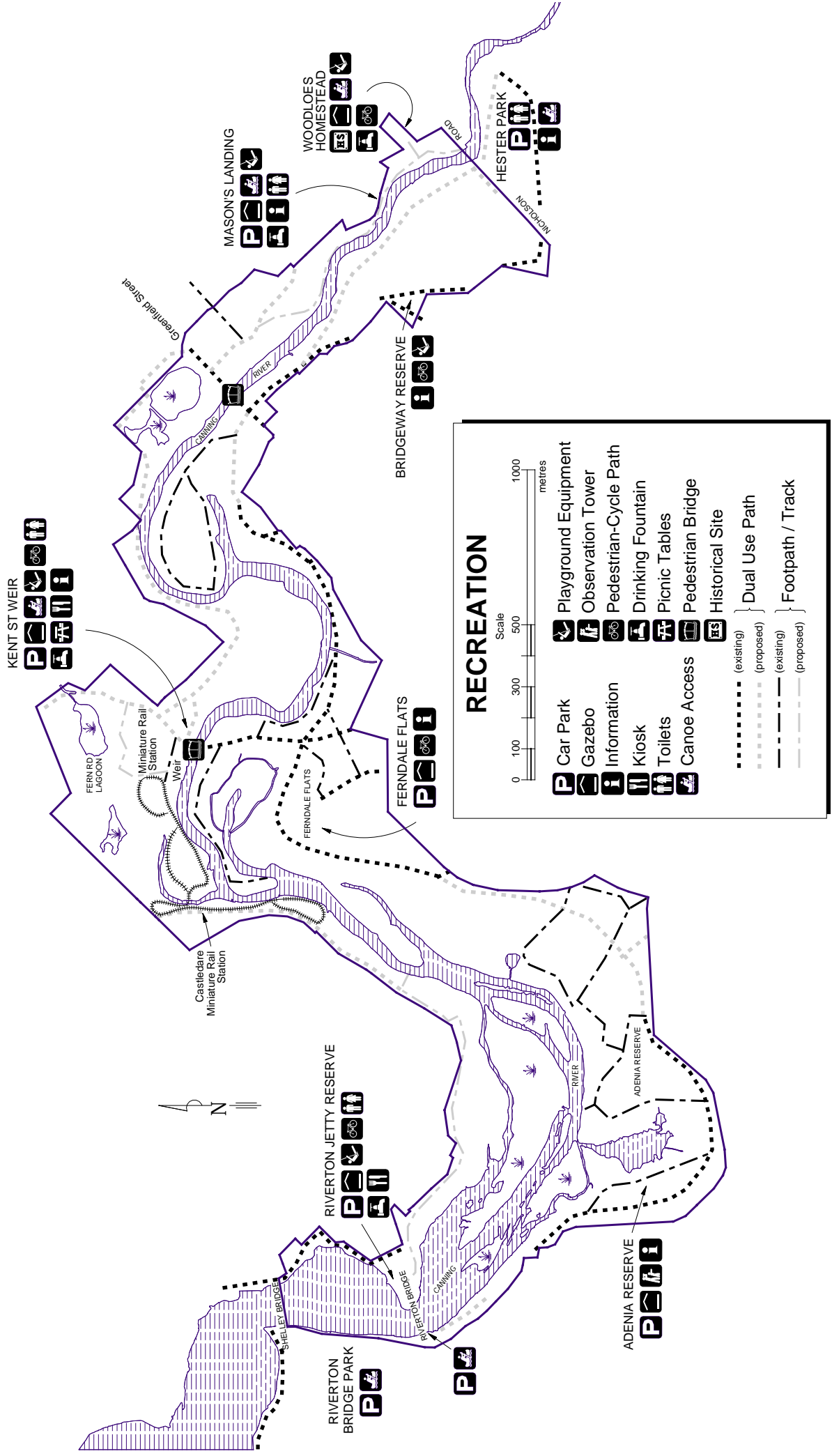
However, direct access to the main recreation areas is by minor suburban streets, and carparks are provided at the following locations: Riverton Bridge Reserve, Ferndale Flats, Bergall Court, Mason's Landing, Kent Street Weir, Castledare, and Riverton Jetty Reserve. It is proposed to upgrade or provide additional parking south west of Riverton Bridge, off Nicholson Road and at Mason's Landing. Parallel parking may also be considered near the river end of Duff Road if sufficient need can be identified.

Boat and canoe access

The Department of Transport is responsible for safety and navigation in and on the waters within the Park. Motorised boats are currently limited to a speed of 4 knots upstream of Riverton Bridge. Canoes regularly use the river. Convenient water access for boats is available in the Riverton Bridge area, whilst canoes can be launched at Riverton Bridge, Wilson Park, Mason's Landing and Hester Park which is upstream from Nicholson Road. The use of motorised watercraft is considered inappropriate in the Park unless it can be established that it does not compromise the Park's conservation or recreational values.

Cycle and Pedestrian Access

A Dual Use Path (DUP) route traverses the Park south of the river. This route relies on using suburban streets to link with sections within the Park. It is proposed to extend the DUP so that the entire length of the Park is serviced and connections made to the existing DUP's east and west of the Park. When Nicholson Road Bridge is upgraded in the future, provision should be made for a DUP to pass beneath the bridge. North of the river it



KENT ST WEIR

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

CASTLEDARE MINIATURE RAIL STATION

MINIATURE RAIL STATION

WEIR

FERN RD LAGOON

CHANNING

RIVER

MASON'S LANDING

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

WOODLOES HOMESTEAD

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

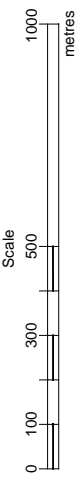
BRIDGEWAY RESERVE

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

FERNDALE FLATS

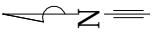
- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

RECREATION



- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

- (existing)
- (proposed)
- (existing)
- (proposed)
- } Dual Use Path
- } Footpath / Track



RIVERTON JETTY RESERVE

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

RIVERTON BRIDGE PARK

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

ADENIA RESERVE

- Car Park (P)
- Gazebo
- Information (i)
- Kiosk
- Toilets
- Canoe Access
- Playground Equipment
- Observation Tower
- Pedestrian-Cycle Path
- Drinking Fountain
- Picnic Tables
- Pedestrian Bridge
- Historical Site

ADENIA RESERVE

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ADENIA RESERVE

Part D. Recreation

is also proposed to provide a DUP in certain sections of the Park. Path design standards should reflect recreational use as a primary purpose. The use of these paths as a commuter route is not encouraged.

Pedestrians and cyclists may cross the river at Greenfield Street, Kent Street Weir, Riverton Bridge, and Nicholson Road. No further river crossings are advocated at this stage.

There are also many informal walking tracks allowing access to many quiet sections of the Park, offering a unique experience to walkers. There are also areas in the Park where access is discouraged. Cyclists are not permitted in these areas.

Maintenance Vehicle Access

Boundary access for maintenance vehicles is provided at many points throughout the Park, including vehicles carrying out mosquito control works.

As far as practicable these vehicles should use the DUP.

Vehicle use within the Park, should be justified and strictly controlled. Uncontrolled access has resulted in degradation in some areas. A review of the whole track system is necessary to limit the impact of vehicles .

Private Vehicle and Motor Bike Access

Private vehicles, trail bikes and motor bikes are restricted to designated parking areas and access roads. Access is restricted, as they may endanger other park users, adversely affect wildlife and cause damage to the landscape.

Animals

Riding horses or other animals in the Park is considered to be in conflict with other park values and users and is not permitted.

River Crossings

Vehicle crossings occur at either end of the Park at Shelley Bridge (Leach Highway), Nicholson Road Bridge and upstream from Shelley Bridge at Riverton Bridge. An amendment to the Park boundary may be required at a later date due to possible future duplication of the Shelley Bridge to the south of the present structure within the existing road reserve boundary. Pedestrian and cyclist bridges occur at Kent Street Weir and Greenfield Street. These bridges are not to be used by motor cyclists. No other bridges are necessary at this stage but the situation needs to be monitored to determine whether additional pedestrian bridges are required.

Disabled Access

Disabled access is possible at many sites throughout the Park. The Dual Use Paths provide the opportunity of movement within the Park. All future developments should cater for disabled people as a standard design criteria. This includes access to conservation and recreation areas.

STRATEGIES

- 1. Implement the access and circulation plan. (CC and CALM)**
- 2. Provide access for people with disabilities at a variety of locations. (CC and CALM)**
- 3. Notify the MRWA of the proposal for a Dual Use Path under Nicholson Road Bridge, so that it can be accommodated when a new bridge is built. (CC and CALM)**
- 4. Seek the support of the SRT in recommending to the DOT that specified motorised water craft be permitted within the Park and all other powered water craft prohibited. (CC and CALM)**
- 5. Restrict private cars, motor bikes, trail bikes to designated carparks and access roads only. Design facilities that restrict vehicles to designated areas. (CC and CALM)**
- 6. Install signs and bike racks to prevent unwanted access to other areas. Restrict cyclists to Dual Use Paths only.**
- 7. Prohibit animal riding in the Park. (CC and CALM)**
- 8. Monitor the impact of management vehicles on the Park and modify procedures as necessary. (CC and CALM)**

25. RECREATION SITES AND FACILITIES

The objectives are to provide a range of well designed recreation sites

Part D. Recreation

equipped with high quality recreation facilities.

The Master Plan (see Section 23) sets out the recreation sites based on the Management Zoning system as detailed in Section 6. The Master Plan, Recreation Development Plans and a Recreation Development Plan Report are available for viewing at the City of Canning offices.

Plans have been prepared for the following sites, whose locations are shown on Map 6:

Castledare - concept plans
Ferndale Flats
Greenfield Bridge Area
Mason's Landing
Riverton Bridge Park
Riverton Bridge Area
Kent Street Weir-Wilson Park

STRATEGIES

- 1. Improvements to the Recreation Sites and facilities are to be based on the Master Plan and Recreation Development Plans. (CC and CALM)**

26. LEASES AND COMMERCIAL OPERATIONS

The objective is to ensure that leases and commercial operations are consistent with the objectives of the plan and the purpose of the land in order to facilitate the use and enjoyment of the Park and generate income to help offset management costs.

26.1 Management Policies in relation to commercial development.

The Swan River Trust has responsibility for planning, protecting and managing Perth's river system and all development proposals need approval from the Minister for the Environment who is advised by the SRT (see Section 7). Trust policies DE 9 - Commercial Development - General, and DE 10 - Restaurants, cafes, kiosks and tearooms are of particular relevance when contemplating commercial operations in the Park.

Commercial concessions may be granted on lands or waters managed by CALM to provide appropriate facilities and services for visitors. Proposals are carefully considered by CALM and require approval by the NPNCA and the

Minister. Concessions must be consistent with the purpose of the Reserve and the protection of its values.

The City of Canning as manager of the Recreation Areas should assess leasing and commercial operations according to the goals and objectives as set out in this Management Plan.

Commercial operations in the Park are not precluded and provide the opportunity to offer services to the public and the opportunity to raise revenue to assist in the management and provision of facilities in the Park.

26.2 Kiosk at Riverton Jetty Reserve

The lease agreement for this kiosk, has recently been renewed. One building accommodates the kiosk and the toilets. The site also has parking, barbecue and picnic facilities, play equipment and occupies an attractive setting. The kiosk is considered an appropriate facility at this site. This site may be considered for a low key development in the future.

26.3 Canning Rugby Club

This club has a lease with the City of Canning for the grounds at Kent Street until 2002. The club has facilities which include: club house, playing field, lighting and play equipment. The facilities are fenced off from the general public which effectively divides the public area at Kent Street Weir in half.

The SPC (1989) in regard to organised sport, notes that the Park should not be seen as a repository of land to meet the demands of local recreation groups. This management plan supports the notion that no more land should be alienated for organised sports and that recreation activities should be compatible with the conservation values of the Park. The Rugby Club has been a tenant at Kent Street since 1974 but with the formation of the Park its presence will not be compatible with the goals as set out in this management plan. Preliminary discussions concerning relocation have been held between the City of Canning and the Rugby Club. The relocation of the club to an alternative venue would require detailed assessment of the assets held by both the City and the Club at Wilson Park and the provision of substantial funding to facilitate relocation.

26.4 Woodloes Homestead

Woodloes homestead is situated in Woodloes Street on a block that runs through to the river. The homestead was designed and built around 1874 by Architect Francis Bird who was a partner of the Mason and Bird Timber Company. Mason was a pioneer of the Jarrah

Part D. Recreation

Timber Industry in Western Australia. Timber was harvested from the Scarp and sent downstream from Mason's Landing which is close to Woodloes Homestead.

The WAPC has been acquiring the rear of blocks in this street for inclusion in the Park but at this stage the entire Woodloes site remains outside the Park.

The homestead is owned by the City of Canning and managed by a committee on behalf of the council. A Conservation Plan was prepared for the homestead by the National Trust of Australia (W.A.) in March 1993.

The homestead is an important part of local history with strong associations with the river. Expansion of the homestead grounds and better access to the river are issues that need consideration. It is proposed that Lot 14 (currently vacant land) adjacent to the homestead be purchased and added to the homestead grounds. The existing site is already too small and the extra land could be used for parking, toilet facilities, storage and other uses to be decided by the Woodloes management. The WAPC is encouraged to purchase this land as part of its land purchase program.

26.5 Castledare Miniature Railway

The Castledare Miniature Railway of Western Australia Incorporated is a club of miniature rail enthusiasts with their activities based adjacent to the river on land owned by the Catholic Church at the Castledare Boys Home.

Over the years, the club have developed quite extensive facilities, including over 5 kilometres of track, railway station, signal box, turn table, storage sheds and workshops. The track runs adjacent to the river, through Fern Lagoon to Wilson Park and back again. At the Castledare site there are toilets, a kiosk, and limited picnic facilities. Large lawn areas serve as a carpark.

The rail stock is owned by individuals and run by volunteer labour. The Miniature Railway on "run days" usually on the first Sunday of the month and during school holidays attracts large numbers of visitors. Train rides are often combined with a barbecue/picnic and there is space for informal ball games.

Planning authorities have included part of the Castledare site in the Park as a buffer to protect the river. The Catholic church is also developing plans that propose development on their land. Negotiations will be entered into, which will result in determining the precise location of the boundary in this section of the

Park. It is hoped that the viability of the Miniature Railway activities are considered as part of the negotiations.

A lease agreement needs to be negotiated with the rail enthusiasts by the new land managers to ensure the continuing presence of the miniature railway in the Park. During negotiations, the following are some of the issues that need to be addressed; the effects of the Castledare redevelopment on the railway activities, the provision and maintenance of picnic and barbecue facilities, upgrading the toilet facilities, provision of parking, a station at Wilson Park, vandalism and security, the impact of the railway activities on the natural environment, possible extensions to the rail network, interpretation facilities associated with the railway, and generating revenue to contribute to management of the Park.

It is also considered that the railway offers the opportunity for low impact access to sensitive areas of the Park providing opportunities for education.

Both the City of Canning and CALM believe that the railway is a benefit to the Park and that the Miniature Railway should continue to operate.

26.6 Farm area near Nicholson Road (Area 16, Map 3)

The area bounded by Nicholson Road, the billabong and the river is currently leased. The site is used as a holding area for sheep and a workshop for animal transport trucks. The lessee is on notice that the site may need to be vacated following the adoption of this management plan.

The site is zoned natural environment uses (see Section 6) and management would include rehabilitation and provision of some facilities. If the site was vacated immediately it would require ongoing maintenance and considerable effort in rehabilitation. Both of these measures incur a cost.

An alternative is to continue to lease the site and use the capital to begin rehabilitation and provide facilities in the Park. In the long term, if there was sufficient interest, the area could be a focal point for an education program which might include the following themes:

- Past land uses (including a proposal for a model farm)
- Landcare principles
- Rehabilitation and vegetation regeneration
- Nature study using the billabong and the river

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- Local history by visiting Woodloes Homestead and Mason's Landing
- Used as a base and connected by the Dual Use Path system to visit other sections of the Park

26.7 Boating and Bicycles

Non-motorised water craft and cycling are consistent with the management objectives of the Park and are encouraged. A licence to operate a hire business is issued by the relevant authority. Licences to approved operators will be subject to licence conditions. Applications for commercial activities in the Park will only be considered after environmental and social assessment.

26.8 Cafe or Kiosk at Wilson Reserve-Kent Street Weir

Kent Street Weir is the main recreation area in the Park and is serviced by many facilities. With the possibilities of focusing the Miniature Railway activities and development of an Interpretive Centre there, it may be opportune to include the provision of a cafe or kiosk as a service to visitors and also as a source of revenue for the Park. This matter requires further investigation by the joint managers of the Park.

26.9 Ice cream vans or fast food outlets

These businesses might operate in the Park subject to issuing an Itinerant Vendors Licence or Stall Holders Licence by the City of Canning. They must comply with the City's requirements, including not conflicting with other park users. Their operations would be checked by the Planning and Health Departments. These businesses would not operate in Conservation Zones.

26.10 Visitor's (Interpretive) Centre

Brock and Pen (1984), the Tooby Master Plan Report (1985) and Richards (1991) advocate the provision of a visitors centre or a similar facility that could house historical and ecological data and present it to the public. This Management Plan proposes that a single purpose visitor centre not be built. The concept of visitors information being provided in conjunction with other community activities or combined with a commercial activity such as a cafe should be considered.

A location for this type of facility needs to be decided. The siting will be determined by the management zones. This sort of building would be permitted in a Recreation Zone and may be acceptable in a Natural Environment Uses Zone. Any building needs to be sensitively designed and sited. The amount of existing infrastructure would also be taken

into consideration. There are a number of site options including:

1. Kent Street Weir /Wilson Park - in a Recreation Zone.
The site is centrally located, and has the most developed infrastructure, such as parking, toilets, picnic facilities of all the recreation sites. The river can be crossed, providing access to large areas of the Park and is linked to the Dual Path System. Consequently, it is a popular site.
2. Adenia Reserve - in a Recreation Zone.
This is a large parkland area that was developed with bicentennial money. No formal parking areas are provided but there is ample room to park on Adenia Road. It is close to the Conservation Areas.
3. Farm - in a Natural Environment Uses Zone (Area 16, Map 3).
The area is conspicuous from Nicholson Road, and so has easy access. The site is currently undeveloped, and potentially has a variety of attractions (see Section 25). There is no existing infrastructure.
4. End of Watts Road - in a Conservation Zone.
This location was advocated by Brock and Pen (1984). A site suitable for a building is available on an area previously disturbed by land fill. This site may have been suitable for a small education facility but poses a number of problems for the type of facility as proposed above. There is no existing infrastructure, the site is small and there is no room for parking, and is very close to nearby residences.
5. Greenfield Street Area - in a Natural Environment Uses Zone.
This site is close to the Canning Regional Centre, experiences lots of foot traffic, and currently has no infrastructure, apart from a dual use path.

At this point the Kent Street Weir site is the preferred option.

STRATEGIES

1. **Establish and manage commercial operations in accordance with CALM Policy Statement No 18, Recreation, Tourism and Visitor Services. Concessions in the Park may be provided if they are consistent**

- with the purpose of the Park, the Swan River Strategy and approved by the NPNCA and the Minister for the Environment. Proceeds from commercial operations are to be used for park management or infrastructure. (CALM)
2. Ensure that conditions of commercial concessions are fulfilled by the concession holders. (CC)
 3. Integrate the management of Woodloes Homestead and the Park. (CC/Woodloes Management Committee and CALM)
 4. Purchase Lot 14 Woodloes Street to enable Woodloes Homestead to expand. (WAPC)
 5. Ensure the continuation of the Miniature Railway in the Park by providing security of tenure (lease). (CC and CALM)
 6. Investigate extension of the railway to enable further low key access and interpretation of park features. (CC, CALM and Miniature Railway Club)
 7. Investigate relocating the Canning Rugby Club. (CC)
 8. Consider re leasing the farm (Area 16, Map 3) following vesting of land in NPNCA with the aim of using funds to rehabilitate the site. (CALM)
 9. Exclude stock from the Park except for the immediate surrounds of the farm area. Fence the foreshore area of the farm to prevent stock wandering and to ensure public access. (CALM)
 10. Investigate the feasibility of locating a kiosk/cafe at Kent Street Weir. (CC)
 11. Investigate provision of interpretive material and park information in combination with other commercial activities, such as a kiosk. Consider incorporating sponsorship opportunities with this facility. (CC and CALM)

12. Ensure any advertising in the Park is suitable, conforms to management guidelines, and is located in the appropriate management zones. (CC and CALM)

27. SERVICES AND UTILITIES

The objective is to provide cost efficient, effective and safe services and utilities to the Park and to negotiate with authorities placing utilities in the Park so that environmental impacts are avoided or negligible.

Power Lines

To minimise the visual impact of power supply within the Park, it is advocated that all power lines be placed underground. Mains power lines should be placed so that there is minimal visual impact.

Stormwater Outlets and Drainage Facilities

There are many stormwater outlets and drainage facilities throughout the Park, whose installation and maintenance is the responsibility of the Water Corporation or the City of Canning. These utilities have a big impact on the Park : visually (see Section 20 Landscape); or ecologically (see Sections 11 Vegetation and 13 Weeds). The impact of these utilities can be reduced and requires co-operation and consultation between the differing managing bodies. (see Section 7).

Roads

Roads should only be constructed in the Park if they are for management purposes or as part of facility provision for recreation. The only sealed roads present in the Park are short sections to carparks. Facilities should be located near the boundaries so that there is no need to place roads into the Park. SRT policies contain provision for a road interface between residential lots and the SRT management area which includes the Park. Management vehicles should as far as possible, use the Dual Use Paths to limit the need for roads and to limit the impact of these vehicles. The type and necessity of management vehicle use in the Park should be considered carefully by the managers.

Parkland maintenance

The parkland and recreation areas need to be maintained to provide amenity to users, help reduce the risk of fire and be done in a manner that will not devalue the conservation values

Part D. Recreation

of the Park. Issues such as mowing in areas managed for natural regeneration and over fertilising lawn areas and thus contributing to nutrient runoff need to be addressed.

Rubbish Collection

Rubbish bins are located in the recreation areas and collection is the responsibility of the City of Canning. The number of bins provided should be kept to a minimum and visitors encouraged to take their rubbish home with them and recycled. Any requirement for additional toilets during the life of the plan needs to be justified. Any additional toilets will meet approved design criteria and be placed so as to have the least amount of visual impact on the area and to cause minimal impact to neighbours.

STRATEGIES

- 1. Place power lines to facilities and amenity lighting underground, to improve aesthetics of the Park. (CC and WP)**
- 2. Rationalise, upgrade and landscape drainage channels and other infrastructure to include principles of water sensitive urban design. (WC, CC, SRT)**
- 3. Ensure all roads in the Park are for internal access and not for through traffic. Oppose the construction of roads within the Park unless for approved recreation or management purposes. (CC, SRT, CALM)**
- 4. Use management practices that will not compromise the conservation values of the Park ie. strictly defining mowing areas and carefully assessing any fertilising requirements. (CC CALM)**
- 5. Promote “take it home” rubbish education. (CC, CALM)**
- 6. Additional toilet facilities may be required at locations such as Adenia Reserve or Greenfield Street. These or any other toilets should be connected to sewer outlets. (CC)**

28. SIGNS

The objective is to provide effective signs that allow visitors easy access to the Park's features, lead to more effective use of the recreation areas and promote a greater understanding of the Park.

The type of signs used will have an impact on two levels. Firstly, the quality of information provided and secondly the visual impact of the signs on the surroundings. It is important that the sign system be of high standard and be uniform throughout the Park. It is proposed that the CALM Sign Manual be used to guide all signs provided for the Park. The Sign Manual is used throughout the CALM estate and also by many local authorities.

Recognition of the Park will also be enhanced by the continued use of the Park Logo on appropriate signs, and interpretive material etc. The Logo was chosen from a local schools competition.

STRATEGIES

- 1. Produce and implement a sign plan for the Park to include both marine and terrestrial areas. (CC and CALM)**
- 2. Adopt the CALM sign manual as the basis for signs erected in the Park. (CC, CALM, other agencies, lease holders)**
- 3. Adopt the colour scheme for signs outlined in the Recreation Development Plan Report. (CC and CALM)**
- 4. Use the Park Logo on feature and information signs. (CC and CALM)**
- 5. Liaise with other departments and agencies such as the MRWA, and DOT, to ensure uniformity of signs on and adjacent to the Park. (CC and CALM)**

**Figure 2
Park Logo**

PART E COMMUNITY RELATIONS

29. INFORMATION, INTERPRETATION AND EDUCATION

INFORMATION, INTERPRETATION AND EDUCATION GOAL

Promote awareness and understanding of the natural and cultural values of the area and to foster appreciation and care.

The five objectives are:

- **To provide interpretation, information and education about the Park in accordance with the (CALM) Swan Region Interpretation Plan. Ensure information is integrated with and complementary to that already provided or planned to be provided regionally and locally (in particular the material in the Swan Estuary Marine Park and Wetlands like Thomsons Lake and Forrestdale Lake).**
- **To develop and maintain an information and education program for both the local and the broader communities conveying the Park's values for Conservation and Recreation, as well as the associated management concerns (eg water quality).**
- **To promote the Park as a valuable entity in its entirety.**
- **To encourage a sense of ownership and pride in the Park by the local community.**
- **To encourage the use of the Park for educational purposes and as a vehicle for broader education about riverine systems.**

In 1989, the City of Canning and CALM set up and trained a number of volunteers to assist in the management of the area. Since that time, the Canning River Volunteers have been an extremely important and active group, leading regular interpretative activities for the public, providing considered and invaluable advice and comments about management issues and getting excellent press coverage for issues and activities in the Park. Their efforts

have assisted in raising the awareness and understanding in the local community of the Park's identity and values.

School groups have been and continue to be the source of heavy demand for educational activities and talks at the Park. Many local schools have been involved with Arbor Day activities including planting and rehabilitating degraded areas.

According to the Interpretative Plan for CALM's Swan Region, the key features to be interpreted in the Park are;

- the river - its properties, behaviour, effects on the landscape, changes over time and space.
- riverine vegetation - importance, changes over time.
- cultural history - Aboriginal and non aboriginal.
- concept of Regional Parks - why?, who manages?, how?, role of local community?.

These interpretive stories complement those planned elsewhere.

To date, a number of materials for interpretation and education have been developed for the Park. These include material on the social and natural history and the Park in general. Media include brochures, reports, signs and displays. A co-ordinated approach is necessary to ensure efficient use of funds, targeted material, a recognisable image of the Park and consistent messages.

STRATEGIES

1. **Continue to liaise with all interest groups to ensure a co-ordinated approach to interpretation and education on and adjacent to the Park. (CC and CALM)**
2. **Prepare a communications plan for the Park to promote public awareness and appreciation of its natural and cultural values, management programs and of the worth and purpose of Regional Parks generally. (CC and CALM)**
3. **Continue to encourage, promote and support the Canning River Volunteers with essential**

Part E. Community Relations

resources to carry out their activities. (CC and CALM)

- 4. Continue to use the ibis logo for the Park on all publications and on appropriate signs throughout the Park. (CC and CALM)**
- 5. Investigate providing park information and interpretive material in a multi purpose facility and the possibility of a partnership as in the strategies in Section 26. (CC and CALM)**
- 6. Seek sponsorship or other revenue raising activities to help provide for interpretive facilities and services. (CC and CALM)**
- 7. Develop a riverine education package for use by both primary and secondary school groups. This should be a collaborative effort with other established programs and have clear links to the national and state curricula. (CC and CALM)**
- 8. Encourage use of the Park by study groups, University extension courses, holiday programs and for appropriate special events. (CC and CALM)**

30. INTERACTION WITH THE COMMUNITY AND OTHER ORGANISATIONS

The objective is to provide the public and organisations with the opportunity to be involved in the Park's management and planning.

Ongoing liaison with local community groups and associations is essential, as is liaison with interests further afield. The community was made aware of the preparation of this Management Plan through newspaper advertising, articles and City of Canning publications. Contact with the Canning River Volunteers was also made for input into this plan.

Liaison between CALM, City of Canning, lease holders and other Government agencies has also taken place and will continue.

The public is involved in the implementation of this plan through membership of the Park

Community Advisory Committee. A call for nomination to this committee was advertised during April 1994 and established in June 1994. The committee consists of 8 community members and representatives of the management agencies. The committee's brief was to assist in the development of the management plan and to provide advice in regard to the ongoing management of the Park.

Members of the public can also become involved in the Park in a most constructive way by joining the Canning River Volunteers, or attending activities organised in the Park.

STRATEGIES

- 1. Maintain an active Community Advisory Committee. (CALM and CC)**
- 2. Keep the public informed of management actions, activities and developments in the Park by regular features in the local paper and City of Canning publications. Use State newspapers, radio and television coverage as required. (CC and CALM)**
- 3. Liaise with, and support the Canning River Volunteers. (CC and CALM)**

PART F RESEARCH AND MONITORING

31. RESEARCH AND MONITORING

RESEARCH AND MONITORING GOAL

Promote and undertake studies on the Park's social values and natural processes and monitor the impacts of visitor use and management.

The objective is to develop and maintain knowledge regarding visitor use, natural processes and the influence of people on the Park.

There are many opportunities for research within the Park. The Ecological Studies Report produced by Brock and Pen (1984) was comprehensive but is now more than 10 years old. This data needs to be updated in the near future. Visitor impacts, management impacts and external influences all need to be evaluated for their impact on the Park.

There has only been one small visitor survey carried out and more in depth and up to date information would be beneficial. Social monitoring that determines visitor satisfaction and impacts is receiving increasing attention from park management agencies throughout Australia.

It would be appropriate that research projects and monitoring programs involve as wide a range of people as possible. The involvement of volunteers, educational institutions and individual researchers can reduce research and monitoring costs and assist in providing information to management bodies and the broader community.

Individual sections of the Management Plan provide strategies concerning monitoring and research that needs to be carried out.

STRATEGIES

- 1. Implement an integrated program of survey, research and monitoring (including social monitoring) within the Park. (CC and CALM)**
- 2. Encourage the participation of volunteers, educational**

institutions and other organisations in research projects within the Park and promote research programs and findings that address key issues. (CC and CALM)

PART G IMPLEMENTATION

32. PRIORITIES, FUNDING AND STAFF

The objective is to manage the Park using the priorities developed for implementation.

The priorities for management of the Park have been established by the joint managers of the Park and are shown in Appendix 2.

Many strategies are outlined in this Management Plan. While some are guidelines, others are prescriptions for specific actions. This management plan will be implemented by the City of Canning and CALM within the framework of available resources, according to priorities within the plan.

Funding Arrangements

It has recently been announced that CALM will take over responsibility for the co-ordination of this Regional Park in conjunction with the City of Canning. Acquisition of private lots proposed for inclusion in the Park rests with the WAPC.

Staffing Arrangements

The City of Canning currently manages the Recreation Areas of the Park using staff from their Parks and Reserves Department and contractors as necessary. Management of those areas proposed for vesting in the NPNCA will be co-ordinated through CALM's Perth District Office.

STRATEGIES

1. **Prepare 5 year implementation plans, taking into account the priorities outlined in Table 1. Review the implementation plan annually and prepare an annual progress report for the management agencies and available to the general public. (CC and CALM)**
2. **Implement the Park Management Plan with available resources and ensure ongoing protection and maintenance of the Park. (CC and CALM)**
3. **Consider seeking corporate sponsorship and other innovative funding**

arrangements for the Park. (CC and CALM)

33. COMMUNITY INVOLVEMENT

The objective is to actively encourage as much community involvement as possible, in implementing the management plan.

It is very important that the community is actively involved in implementing the management plan. This encourages a sense of ownership of the Park by the community. There are limited resources available to carry out works in the Park and there is a large potential pool of volunteer labour, with a high level of skills that needs to be harnessed and used wherever possible.

There are a number of different ways that the members of the community could be involved in implementing the management plan.

- By joining the Canning River Volunteers (See Appendix 1)
- By participating in Arbor Day activities in the Park which are organised or co-ordinated by management
- Using the community service program to assist Park management

However, it is important that all works carried out are carefully planned and must be co-ordinated by the managing bodies.

STRATEGIES

1. **Encourage and support the activities of the Canning River Volunteers. (CC and CALM)**
2. **Continue Arbor Day and similar activities in the Park. (CC and CALM)**
3. **Continue using Community Service programs in the Park. (CC and CALM)**
4. **Co-ordinate all activities of volunteers in the Park. (CC and CALM)**

34. TERM OF THIS PLAN

The term of this plan will be 10 years and then it should be reviewed. Section 61 of the CALM Act provides for the plan to be amended as required. If major changes to the plan are proposed, the revised plan will be released for public comment. The vesting body, the NPNCA, has the responsibility of monitoring the implementation of the management plan.

STRATEGIES

- 1. Review the implementation of the plan annually prior to preparing the works program for the following year. The review should identify which strategies have been achieved and to what degree any new information may affect management. (CC and CALM)**

- 2. Revise the Plan within 10 years from the date of gazettal of the final management plan. (CC and CALM)**

References and Bibliography

REFERENCES AND BIBLIOGRAPHY

- Adam, K.A. & Associates (1991). Canning Regional Centre Structure Plan. DPUD, WA.
- ANON. The Bulrush - Its Importance in the Herdsman Lake Ecosystem.
- Bikewest (1991). Bicycle Facilities Design Guidelines. Bikewest, Perth, WA.
- Bridgewater, P.B. and Potter I.C. (1982). Reports to the Department of Conservation and Environment on vegetation and fish studies of the Canning River at Riverton.
- Brock, M.A. & Pen, L.J. (1984). Ecological Studies of the Canning River Wetland. City of Canning, Perth, WA.
- City of Canning (1982). Canning River Region Open Space Plan. A series of bulletins. City of Canning, Perth, WA.
- Collins, LB (1987) in John J. Editor. The Swan River Estuary Ecology and Management, proceedings of a symposium held at Curtin University, Curtin University Environmental Studies Group Report No.1, Curtin University, WA.
- Department of Conservation and Environment (1983). The Darling System - System 6 Part 1, General Principles and Recommendations Part 2, Recommendations for specific localities. Report 13. Department of Conservation and Environment, Perth, WA.
- Department of Conservation and Land Management (1986). Rehabilitation of Disturbed Land. Policy Statement No. 10. CALM, WA.
- Department of Conservation and Land Management (1986). Weeds on CALM Land. Policy Statement No. 14. CALM, WA.
- Department of Conservation and Land Management (1991). Community Involvement (Public Participation and Volunteers). Policy Statement No 15. CALM, WA.
- Department of Conservation and Land Management (1987). Fire Management Policy. Policy Statement No. 19. CALM, WA.
- Department of Conservation and Land Management. Sign Manual. CALM, WA.
- Department of Conservation and Land Management (1989). Visual Landscape Management System. Perth, WA.
- Department of Conservation and Land Management (1994). Reading the Remote, Landscape Character Types of Western Australia. Perth, WA.
- Department of Marine and Harbours (1990). Swan River Trust Foreshore Erosion Study 1990. Perth, WA.
- Environment Protection Authority (1993). Red Book Status Report. Perth, WA.
- Green, N. (1984). Broken Spears: Aboriginal and Europeans in the Southwest of Australia. Focus Education Services, Perth, WA.
- Hames Sharley (1991). Hester Park Management Plan. City of Gosnells, WA.
- Klemm, VV, Siemon, NL and Ruiz-Avila, RJ (1993) Hydrocotyle ranunculoides: A control strategy for the Canning River Regional Park. Swan River Trust Report No 6.
- Management Strategy Task Force (1988). Swan River Management Strategy. Government of Western Australia.
- Marchant, N.G. et al. (1987). Flora of the Perth Region Part 1 and 2 Department of Agriculture, Perth, WA.
- Mc Dermot, A.L.J. (1981). The distribution of teleosts in the Canning River. Unpublished Honours Thesis, Murdoch University, W.A.
- Meagher and Le Provost (1975). Ecology of the Canning River Wetlands (Mosquito Study). A report to the Town of Canning.
- National Capital Development Commission (1983). Cycleways. NCDC Technical Paper 37, Canberra. ACT.
- Neal, P. (1994). Green Values Landscape Design No 227, U.K. Landscape Institute Journal, Surrey, England.
- Ninox Wildlife Consulting (1990). The Significance of Mosquito Breeding Areas to the Waterbirds of Peel Inlet, Western Australia. Report No. 20, Waterways Commission, Perth, WA.
- Palassi Architects (1993). Conservation Plan, Woodloes Homestead, Cannington. Prepared for the National Trust of Australia WA.
- Pen, L.J. (1983). Peripheral vegetation of the Swan and Canning Estuaries, 1981. Department of Conservation and Environment, Bulletin 113, Perth, WA.

References and Bibliography

- Powell, R. (1990). *Leaf and Branch. Trees and Tall Shrubs of Perth*. Department of Conservation and Land Management. Perth, WA.
- Richards, O. (1991). Canning River Regional Park Historical Survey. DPUD, WA.
- Seddon, G. (1972) A Sense of Place. University of Western Australia, Perth, WA.
- State Bicycle Committee. Planning and Design of Bicycle Facilities. Ministry of Transport , Victoria.
- State Planning Commission (1989). Canning River Regional Park. SPC, Perth, WA.
- Swan River Trust (1993). A trial to determine the effect of the herbicide fluazifop-butyl on the flora and fauna of the Swan River System. Report No. 12, SRT, Perth, WA.
- Swan River Trust (1993). Policies. SRT, Perth, WA.
- Swan River Trust (1993). Hydrocotyle ranunculoides: A control strategy for the Canning River Regional Park. Report No. 6 SRT, Perth, WA.
- Swan River Trust (1994). Draft Lower Canning River Management Plan, Report No. 15 SRT, Perth, WA.
- Thurlow, B.H., Chalmers, J., Klemm, V., (1986). Swan-Canning Estuarine System: Environment, Use and the Future. Report No. 9. Waterways Commission, WA.
- Tooby, P. & Tooby M. (1985). Canning River Regional Park Master Concept Plan Report. For City of Canning, Perth, WA.
- Tooby, P. & Tooby M. (1990). Canning River Regional Park Recreation Survey. Report to City of Canning, Perth, WA.

ABBREVIATIONS

A list of abbreviations used in this plan:

APB	Agriculture Protection Board
CALM	Department of Conservation and Land Management
CAMBA	China Australia Migratory Birds Agreement
CBD	Central Business District
CC	City of Canning
CG	City of Gosnells
THE PARK	Canning River Regional Park
DOLA	Department of Land Administration
DOT	Department of Transport
DPUD	Department of Planning and Urban Development (now MFP)
DUP	Dual Use Path
ICOMOS	The International Charter for the Conservation of Monuments and Sites. The Burra Charter was adopted by the Australian ICOMOS in 1981.
JAMBA	Japan Australia Migratory Birds Agreement
LGA	Local Government Authorities
MLA	Member of the Legislative Assembly
MFP	Ministry for Planning
MIRWA	Main Roads Western Australia
MRS	Metropolitan Region Scheme
NPNC	National Parks and Nature Conservation Authority
RAOU	Royal Australasian Ornithologists Union
RAMSAR	Convention on the Conservation of Wetlands of International Importance: Especially as Waterfowl Habitat. Known as the Ramsar Convention
SPC	State Planning Commission (now WAPC)
SRMA	Swan River Management Authority
SRT	Swan River Trust
FRSWA	Fire and Rescue Service of WA
WAPC	Western Australian Planning Commission
WC	Water Corporation
WP	Western Power
WRC	Water and Rivers Commission

Appendices

Appendix 1 : CONTACTS

City of Canning

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Kelmscott WA 6111

9390 5977

Department of Conservation and Land Management

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Appendix 2: PRIORITIES FOR IMPLEMENTATION OF THE STRATEGIES

ONGOING PRIORITY

Section

4. Policies

1. Manage the Park to support the relevant SRT policies. (CC and CALM)
2. Apply CALM and NPNCA recreation, conservation and education policies in the Park. (CC and CALM)

6. Management Zones within the Park

1. Base future management of the Park on the zoning plan. (CC and CALM)

7. Integrated Management of the Park and adjacent areas

2. Promote Integrated Management of the Park with adjoining land managers. (CC, SRT and CALM)

9. Geology and Soils

1. Use clean soil, which is free of disease and weeds and similar to the natural soil types of the area when it is necessary to import soil into the Park. (CC, CALM, WP, WC, WRC, MRWA)

10. The River and Flood Plain

1. Provide management support for the *Hydrocotyle ranunculoides* control strategy implemented by the SRT. (CC, , WC, MFP, APB and CALM)
4. Support and endorse the the Swan River Trust Pollution Control Plan and the Western Australian Hazardous Materials Emergency Management Scheme which cover emergency procedures and recommendations regarding control of petrol, oil and chemical spills. (CC and CALM)
6. Adopt management practices throughout the Park, especially in the recreation areas that do not add to the build up of nutrients and other pollutants in the river eg turf management program based on minimal nutrient loss. (CC and CALM)

12. Fauna

1. Continue monitoring, researching and surveying the fauna of the Park. (CC, Educational Institutions, WA Museum, RAOU and CALM)
4. Identify seasonal mowing areas and areas not to be mown to preserve habitat and breeding sites. (CC and CALM)
5. Apply the intent of the JAMBA and CAMBA migratory bird agreements in the Park. (CC and CALM)
6. Design and locate facilities and infrastructure according to approved plans, to minimise environmental damage and maximise visitor appreciation. (CC and CALM)

13. Weeds

3. Weed control programs to be part of a rehabilitation strategy and not carried out in isolation. See Section 18 Rehabilitation. (CC, SRT, CALM, APB)
7. Manage and control weed infestations in accordance with CALM Policy Statement No 14. Weeds on CALM Land. (CALM)
13. Liaise with WC regarding weed infestations and control methods, in creeks and drains that flow into the Park. (CC and CALM)

ONGOING PRIORITY(cont'd)

Section

14. Fire

2. Maintain a record of the date, cause and impact of all fires in the Park. Analyse trends and take fire prevention measures where necessary. (CC and CALM)
7. Allow burning, specifically for the protection of values and the management of native species. (CALM and CC)

17. Pets and Feral Animals

1. Exclude dogs from conservation areas; ensure dogs are on a leash elsewhere in the Park except for gazetted dog exercise areas. (CC and CALM)
6. Monitor the Park for feral animals (eg cats, hybrid ducks, foxes, rats), determine their impact on conservation values, and investigate control options. (CC and CALM)

18. Rehabilitation

2. Co-ordinate rehabilitation works between all the land managers and relevant community groups. (CC, SRT and CALM)
7. Use locally collected seed (from the nearest viable source) for propagating plants or for direct seeding. (CC and CALM)

19.1 Aboriginal History

1. Ensure that management obligations are fulfilled according to The Aboriginal Heritage Act 1972-1980, before any development takes place. (CC and CALM)

19.2 European and Asian History

1. Continue to collate information on historic sites located in the Park and establish an archive of visual and written material including calibrated photography to be available for interpretive use and conservation. (CC, Historical Societies and CALM)
7. Maintain the historic walk developed in Adenia Reserve. (CC and CALM)

20. Landscape

3. Assess the visual impacts of development proposals on the periphery of the Park so that adverse impacts can be avoided. (CC, SRT, CALM)
4. Rehabilitate degraded and weed infested areas according to rehabilitation priorities. (CC and CALM)
7. Ensure utilities and associated structures are sympathetic in design, materials and colour to complement surrounding landscape elements and be sited away from natural focal points, out of viewer sight lines and where vegetation or landform screening can be utilised. Liaison with Western Power, WC and other authorities before works are carried out in the Park is essential. (CC and CALM)

22. Visitor Use

1. Provide and maintain suitable and safe facilities and services to cater for visitors. (CC and CALM)
2. Promote visitor activities which are appropriate to the natural and cultural values of the Park. (CC and CALM)
3. Continue to monitor visitor numbers, activities and preferences within the Park. (CC and CALM)

ONGOING PRIORITY (cont'd)

Section

25. Recreation Sites and Facilities

1. Improvements to the recreation sites and facilities are to be based on the Master Plan and Recreation Development Plans. (CC and CALM)

26. Leases and Commercial Operations

1. Establish and manage commercial operations in accordance with CALM Policy Statement No 18 Recreation, Tourism and Visitor Services. Concessions in the Park may be provided if they are consistent with the purpose of the Park, the Swan River Strategy and approved by the Minister for the Environment. Proceeds from commercial operations are to be used for park management or infrastructure. (CALM)
2. Ensure that conditions of commercial concessions are fulfilled by the concession holders. (CC)
12. Ensure any advertising in the Park is suitable, conforms to management guidelines, and is located in the appropriate management zones. (CC and CALM)

27. Services and Utilities

1. Place power lines to facilities and amenity lighting underground, to improve aesthetics of the Park. (CC and WP)
3. Ensure all roads in the Park are for internal access and not for through traffic. Oppose the construction of roads within the Park unless for approved recreation or management purposes. (CC, SRT, CALM)
4. Use management practices that will not compromise the conservation values of the Park, ie. strictly defining mowing areas and carefully assessing any fertilising requirements. (CC and CALM)
6. Additional toilet facilities may be required at locations such as Adenia Reserve or Greenfield Street. These or any other toilets should be connected to sewer outlets. (CC)

28. Signs

2. Adopt the CALM sign manual as the basis for signs erected in the Park. (CC, CALM, other agencies, lease holders)
3. Adopt the colour scheme for signs outlined in the Recreation Development Plan Report. (CC and CALM)
4. Use the Park Logo on feature and information signs. (CC and CALM)
5. Liaise with other departments and agencies such as the MRWA and DOT, to ensure uniformity of signs on and adjacent to the Park. (CC and CALM)

29. Information, Interpretation and Education

1. Continue to liaise with all interest groups to ensure a co-ordinated approach to interpretation and education on and adjacent to the Park. (CC and CALM)
4. Continue to use the ibis logo for the Park on all publications and on appropriate signs through the Park. (CC and CALM)
8. Encourage use of the Park by study groups, University extension courses, holiday programs and for appropriate special events. (CC and CALM)

33. Community Involvement

2. Continue Arbor Day and similar activities in the Park. (CC and CALM)

ONGOING PRIORITY (CONT'D)

Section

33. Community Involvement (cont'd)

3. Continue using Community Service programs in the Park. (CC and CALM)
4. Co-ordinate all activities of volunteers in the Park. (CC and CALM)

HIGH PRIORITY

Section

3. The Vision for Park

1. Establish conservation as the primary goal of the Park and allow recreation and other uses of the Park to occur to the extent that the primary goal is not impaired. (CC and CALM)

4. Policies

3. Prepare a specific policy statement for consideration by Council which reflects the principles outlined in this Management Plan. (CC)

5. Land Tenure and Park Boundaries

1. Adopt the Park boundary as shown on Map 2. (MFP)
2. Seek to purchase the remainder of the private land as soon as possible and preferably within 12 months from willing land owners.
5. Vest the land in the management agencies as outlined in Section 6 Zoning. (DOLA)

7. Integrated Management of the Park and adjacent areas

1. Develop a 'Memorandum of Understanding' to facilitate implementation of the Plan. (CC and CALM)
3. Educate and encourage neighbouring land owners to support the management objectives of the Park (see Sections 29 and 30). (CC and CALM)
5. Liaise with consultants, City of Canning and other authorities that will provide facilities and infrastructure for the Regional Centre to ensure that the conservation values of the Park are protected. (CC and CALM)
8. Survey and review current drainage outfalls within the Park with a view to establishing a program for the redesign and rehabilitation of these in accordance with SRT and CALM guidelines. (CC and WRC and WC)

10. The River and Flood Plain

2. Support government initiatives to monitor and reduce nutrient levels in the Canning River catchment. (CC and CALM)
5. Adopt the management zoning system (Section 6). (CC, SRT and CALM)
7. Retain access across the river at the Kent Street Weir. (CC and CALM)
8. Continue management of the Kent Street Weir operations to control the water flow until studies present alternative options for management. (WRC)
9. Liaise with WC to develop appropriate methods to address potential sewage overflow into the Park. (CC and CALM)

HIGH PRIORITY (cont'd)

Section

11. Flora and Vegetation

4. Reduce the frequency of fire, utilising strategies set out in Section 14. (CC, FRSWA, CALM)
6. Stop rubbish dumping in the Park to prevent further introduction of weeds including garden escapees. (CC and CALM)
7. Investigate any wilful damage to vegetation in the Park and prosecute offenders. (CC, SRT and CALM)

12. Fauna

3. Identify and protect bird habitat and breeding areas. (CC and CALM)
8. Educate neighbours about the effects of the dumping of exotic fish in the river system e.g. Carp. (CC and CALM)

13. Weeds

1. Minimise physical disturbance to plant communities by controlling vehicle and pedestrian access to and within the Park. If utility or facility provision occurs in the Park, rehabilitation and revegetation should be considered as an integral part of the works program. (CC, CALM, WP, WC, WRC)
2. Develop criteria for setting priorities for weed control and then carry out a co-ordinated weed control program. (SRT, CALM, CC, APB)
8. Adopt a fire management plan for the Park to help control weeds caused by unwanted fires. (See Section 14). (CC and CALM)
10. Educate neighbours about rubbish dumping and garden refuse, especially in new areas, and the dumping of aquarium contents in the river system to assist in reducing weed and aquatic weed problems. (CC and CALM)
11. Ensure the non-target effects of any use of chemicals to control weeds is minimised. (CC and CALM)

14. Fire

1. Develop and adopt fire management objectives and strategies that protect environmentally sensitive areas from frequent wildfire and including pre suppression activities. (CC and CALM)
3. Provide the FRSWA with a plan of the Park which sets out all access points, roads and tracks and strategies for protecting highly sensitive areas in the Park. (CC and CALM)
6. Ensure that adequate fire fighting equipment, including equipment developed for fire suppression that operates on the river, is available to the Park. (CALM and FRSWA)

15. Erosion

3. Control access to areas suffering from erosion or likely to erode. (CC and CALM)
4. Protect shoreline vegetation by controlling access and the spread of weeds. (CC and CALM)

16. Mosquito Control

1. Review the mosquito control program annually, for its effectiveness in reducing mosquito numbers and continue to seek alternatives which are environmentally acceptable. (CC and CALM)

HIGH PRIORITY (cont'd)

Section

16. Mosquito Control (cont'd)

2. Monitor mosquito control management practices and amend if necessary. (CC and CALM)

17. Pets and Feral Animals

2. Install dog excreta bins in gazetted dog exercise areas where appropriate. (CC)
4. Educate local residents about the impact that cats and domestic escapees may have on native fauna, with the aim of encouraging residents to either not own pet cats, rabbits and rats or strictly control them (eg keep cats in at night). The danger of dumping pets in the Park should also be included. (CC and CALM)

18. Rehabilitation

1. Prepare a rehabilitation plan and set priorities for rehabilitation works. (CC and CALM)
4. Rehabilitate areas immediately following the installation of utilities or recreation facilities. (Implementing Authority, Co-ordinated by CC and CALM)
5. Carry out rehabilitation works as part of any weed control program. (CC and CALM)
6. Establish a seed collection of fire sensitive plants within the Park. (CC and CALM)
8. Actively involve members of the local community and schools in rehabilitation works. (CC and CALM)

20. Landscape

5. Provide a high standard sign system based on the CALM sign manual. (CC and CALM)
6. Ensure recreation facilities and park furniture are of a high standard and suited to the surrounding landscape. Facility provision should be planned and agreed to by the joint managers. (CC and CALM)

22. Visitor Use

4. Provide suitable interpretive information for park users. (CC and CALM)
5. Install emergency equipment at appropriate locations. (CC and CALM)

23. Recreation Master Plan

1. Implement the Master Plan and associated Recreation Development Plans. (CC and CALM)

24. Access

1. Implement the access and circulation plan. (CC and CALM)
4. Seek the support of the SRT in recommending to the DOT that specified motorised water craft be permitted within the Park and all other powered water craft prohibited. (CC and CALM)
5. Restrict private cars, motor bikes, trail bikes to designated carparks and access roads only. Design facilities that restrict vehicles to designated areas. (CC and CALM)
7. Prohibit animal riding in the Park. (CC and CALM)
8. Monitor the impact of management vehicles on the Park and modify procedures as necessary. (CC and CALM)

26. Leases and Commercial Operations

5. Ensure the continuation of the Miniature Railway in the Park by providing security of tenure (lease). (CC and CALM)
7. Investigate relocating the Canning Rugby Club. (CC)

HIGH PRIORITY (cont'd)

Section

28. Signs

1. Produce and implement a sign plan for the Park to include both marine and terrestrial areas. (CC and CALM)

29. Information, Interpretation and Education

2. Prepare a communications plan for the Park to guide the promotion of public awareness and appreciation of its natural and cultural values, management values and of the worth and purpose of Regional Parks generally. (CC and CALM)
3. Continue to encourage, promote and support the Canning River Volunteers with essential resources to carry out their activities. (CC and CALM)

30. Interaction with the Community and Other Organisations

1. Maintain an active Community Advisory Committee. (CALM and CC)
2. Keep the public informed of management actions, activities and developments in the Park by regular features in the local paper and City of Canning publications. Use State newspapers, radio and television coverage as required. (CC and CALM)
3. Liaise with, and support the Canning River Volunteer Guides. (CC and CALM)

31. Research and Monitoring

2. Encourage the participation of volunteers, educational institutions and other organisations in research projects within the Park and promote research programs and findings that address key issues. (CC and CALM)

32. Priorities, Funding and Staff

1. Prepare 5 year implementation plans, taking into account the priorities outlined in Table 1. Review the implementation plan annually and prepare an annual progress report for the management agencies and available to the general public. (CC and CALM)
2. Implement the Park Management Plan with available resources and ensure ongoing protection and maintenance of the Park. (CC and CALM)

33. Community Involvement

1. Encourage and support the activities of the Canning River Volunteers. (CC and CALM)

34. Term of this Plan

1. Review the implementation of the plan annually prior to preparing the works program for the following year. The review should identify which strategies have been achieved and to what degree any new information may affect management. (CC and CALM)
2. Revise the plan within 10 years from the date of gazettal of the final management plan. (CC and CALM)

MEDIUM PRIORITY

Section

5. Land Tenure and Park Boundaries

3. Amend the MRS to include all the proposed park area in the Parks and Reserves Reservation. Ensure consistency between the gazetted boundary and the MRS boundary. (MFP)
6. Initiate the vesting of the river component of the Park with the NPNCA, as a Marine Reserve. (CC, CALM, SRT)

7. Integrated Management of the Park and adjacent areas

7. Complete the Memorandum of Understanding between CALM, SRT and WRC. (SRT, WRC and CALM)
9. Ensure design and maintenance and operation of Water Corporation facilities prevents overflow of sewage and consider installing facilities for the storage of sewage overflow and emergency power generators at sewerage pumping stations adjacent to the river. (WC)

10. The River and Flood Plain

3. Investigate the use of nutrient traps and pollution control mechanisms in conjunction with storm water outlets in the Park, as advocated by SRT policies, (eg DE 4 Stormwater disposal). (CC, CALM and SRT)

11. Flora and Vegetation

1. Document and monitor the vegetation and changes to plant communities in the Park. (CC, SRT and CALM)
2. Control weeds (Section 13) and rehabilitate degraded vegetation communities according to priorities (Section 18). (CC, SRT and CALM)
3. Revegetate degraded areas (see also Section 18), using indigenous seed sources collected within the Park or from the nearest viable source. (CC and CALM)
5. Investigate altering drainage outlets so that freshwater flushing of salt marshes no longer occurs. (see SRT Policies DE 4 Stormwater disposal) (CC and WC)

12. Fauna

2. Repeat the type of bird observation study carried out by Brock and Pen (1984) to help ascertain trends of bird numbers and species numbers over the last 10 years. (CC and CALM)
7. Continue to develop opportunities to promote an understanding and appreciation of the Park's fauna by:
 - developing an interpretation plan for the Park (see Section 29). (CALM)
 - supporting and encouraging the volunteer guides (see Section 29). (CC and CALM)

13. Weeds

4. Investigate controlling *Typha orientalis*, the introduced bulrush, including modification of stormwater outlets. (APB, CC, SRT, CALM)
5. Set boundaries to grass areas used for recreation and control the spread of grasses accordingly. (CC and CALM)

14. Fire

4. Where possible, reduce fuel loads by mowing large open grassed areas. Mown areas to be delineated so that mowing practices do not inhibit natural regeneration and fauna habitat. (See Section 12 Rec. 6) (CC and CALM)

MEDIUM PRIORITY (cont'd)

Section

15. Erosion

1. Implement measures to deal with erosion by planting vegetation as appropriate and consistent with existing vegetation communities. (CC and CALM)

17. Pets and Feral Animals

3. Review the current gazetted dog exercise areas within the Park in consultation with CALM, in light of strategies within this study. (CC)
5. Implement baiting for foxes in the conservation zones coinciding with an appropriate warning system for park users, especially dog owners. Run an education program in conjunction with the baiting program. (CC and CALM)

18. Rehabilitation

3. Close and rehabilitate unnecessary vehicle tracks and footpaths. (CC and CALM)

19.1 Aboriginal History

2. Arrange for an Aboriginal site study of the Park to be undertaken and ensure Aboriginal consultation is part of the process. (CC and CALM)
3. Incorporate information on the Aboriginal history of the Park into interpretive material where appropriate. (CC and CALM)

19.2 European and Asian History

2. Nominate sites for heritage listing on either the Municipal Heritage Inventory, or State and National Heritage Lists. (CC and CALM)
3. In accordance with the ICOMOS Burra Charter, develop management guidelines for any historic sites in consultation with other appropriate conservation bodies, such as the WA Museum, WA Maritime Museum, National Trust, Australia Heritage Commission and historical societies. (CC and CALM)
4. Identify, conserve and/or restore important sites such as the clay pits, old bricks and Sikh burial ground in Adenia Reserve, the tank stand in Ferndale flats and the wharf near Wharf Street. (CC and CALM)
6. Encourage the Woodloes Homestead managers to develop a site plan which includes links with the Park. (CC and CALM)

24. Access

2. Provide access for people with disabilities at a variety of locations. (CC and CALM)
3. Notify the MRWA of the proposal for a Dual Use Path under Nicholson Road Bridge, so that it can be accommodated when a new bridge is built. (CC and CALM)
6. Install signs and bike racks to prevent unwanted access to other areas. Restrict cyclists to Dual Use Paths only. (CC)

26. Leases and Commercial Operations

3. Integrate management of Woodloes Homestead and the Park. (CC/Woodloes Management Committee and CALM)
4. Purchase Lot 14 Woodloes Street to enable Woodloes Homestead to expand. (SPC)
6. Investigate extension of the railway to enable further low key access and interpretation of park features. (CC, CALM and Miniature Railway Club)

MEDIUM PRIORITY (cont'd)

Section

26. Leases and Commercial Operations (cont'd)

8. Consider re leasing the farm (Area 16, Map 3) following vesting of land in NPNCA with the aim of using funds to rehabilitate the site. (CALM)
9. Exclude stock from the Park except for the immediate surrounds of the farm area. Fence the foreshore area of the farm to prevent stock wandering and to ensure public access. (CALM)
10. Investigate the feasibility of locating a kiosk/cafe at Kent Street Weir. (CC)
11. Investigate provision of interpretive material and park information in combination with other commercial activities, such as a kiosk. Consider incorporating sponsorship opportunities with this facility. (CC and CALM)

27. Services and Utilities

2. Rationalise, upgrade and landscape drainage channels and other infrastructure to include principals of water sensitive urban design. (WC, CC, SRT)
5. Promote "take it home" rubbish education. (CC, CALM)

29. Information, Interpretation and Education

5. Investigate providing park information and interpretive material in a multi purpose facility and the possibility of a partnership as in the strategies in Section 26. (CC and CALM)
6. Seek sponsorship or other revenue raising activities to help provide for interpretive facilities and services. (CC and CALM)
7. Develop a riverine education package for use by both primary and secondary school groups. This should be a collaborative effort with other established programs and have clear links to the national and state curricula. (CC and CALM)

31. Research and Monitoring

1. Implement an integrated program of survey, research and monitoring (including social monitoring) within the Park. (CC and CALM)

32. Priorities, Funding and Staff

3. Consider seeking corporate sponsorship and other innovative funding arrangements for the Park. (CC and CALM)

LOW PRIORITY

Section

5. Land Tenure and Park Boundaries

4. Recognise Regional Parks as an independent category in the Metropolitan Region Scheme. (MFP)
7. Investigate the closure of undeveloped Road Reserves within the boundary of the Park and include in the gazetted area of the Park where appropriate. (CALM, CC)

LOW PRIORITY (cont'd)

Section

7. Integrated Management of the Park and adjacent areas

- 4 Prepare plans for the area adjacent to the Regional Centre that take into account the management objectives of the Park. (CC and CALM)
- 6 Investigate the inclusion of Hester Park into the Park. (MFP, CG, CC and CALM)

13. Weeds

- 6 Investigate the operational function of the Kent Street Weir as a method to control *Typha orientalis*. (SRT)
- 9 Document and continue to monitor the extent of weed distribution and abundance in the Park and relate results to previous studies to determine their spread. (CC and CALM)
- 12 Seek alternatives to chemical control of weed infestations when undertaking works in the Park. (CC and CALM)

14. Fire

- 5 Consider constructing future Dual Use Paths to a standard that will carry fire trucks, so that access is improved to strategic sections of the Park. (CC and CALM)

15. Erosion

- 2 Construct suitable bank protection if other measures fail to relieve erosion. (CC and CALM)

19. European and Asian History

- 5 Where appropriate, incorporate information on the European and Asian history of the Park into interpretive material. (CC and CALM)

20. Landscape

- 1 Classify landscape features in the Park according to the Visual Management System and co-ordinate this with SRT landscape plans for the Canning River. (CALM)
- 2 Identify and protect the important landscapes in the Park. (CC, SRT, MFP, CALM)