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# Draft Environmental Protection Policy for the Swan and Canning Rivers

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**Environmental Protection Authority**  
Perth, Western Australia 6000  
October 1995

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Draft environmental protection policy for  
the Swan and Canning rivers /  
Environmental Protection Authority

DEPARTMENT OF PARKS AND WILDLIFE

## PUBLIC COMMENT

The public will be provided with two opportunities to make submissions on the Environmental Protection Policy (EPP). The first opportunity is offered with this document, the Draft EPP. The second opportunity will be with the release of the Revised Draft EPP, which will be a product of public comments received on the Draft EPP and further consideration by the EPA.

The *Environmental Protection Act* 1986 requires that a Draft EPP be widely advertised and submissions invited from individuals and agencies likely to be affected.

Interested people and organisations are invited to submit written comments on the draft policy to:

The Chairman  
Environmental Protection Authority  
Westralia Square  
141 St Georges Terrace  
PERTH WA 6001  
(Attention: Mr Geoff Bott)

Enquiries:                   call   (09) 222 7000  
                                  fax   (09) 322 1598

## CLOSING DATE

Your submission must reach the Environmental Protection Authority no later than 5pm on 12 January 1996.



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AND CONSERVATION  
WESTERN AUSTRALIA

**Foreword**

In recent years, the Swan and Canning rivers have been under environmental stress from the activities of the catchment's growing population. This was highlighted by the incidence of a 'red tide' algal bloom in the Swan River at Ascot in November 1993.

In May 1994, concern for the future of the river prompted the Minister for the Environment to ask the Environmental Protection Authority to prepare an Environmental Protection Policy to restore and protect the health of our river ecosystem.

The attached draft policy was prepared by the Environmental Protection Authority and Swan River Trust to declare the environmental values of the Swan and Canning rivers and establish a program for their protection. In particular, the policy recognises the multiple and diverse uses of our rivers (for example, drinking water supply and as a major port) and the need to manage activities which may threaten these uses in the long term.

The draft policy calls for the preparation of a Comprehensive Management Plan (CMP) by June 1998, which would see planning, science, economic and social disciplines brought together for the first time to protect the rivers. The CMP will provide a detailed blueprint of the 'who, what and when' of local and state government and community group actions to restore and protect the river ecosystem.

Public submissions are invited on the attached draft policy (closing Friday 12 January, 1996), after which a revised draft policy will be prepared and released for further public comment.


The Swan and Canning river system is, in many ways, like a large living and breathing organism, each of its parts being related to its other parts by a web of interconnected pathways. For us to manage the resources of the river system efficiently and effectively, we must first understand how it functions.


For this purpose, we have attached an explanation of the ecological processes of the rivers which provides some of the results of scientific investigations (within this and other waterways and catchments) and identifies potential solutions to specific problems. The explanatory text presents key environmental concerns and problems and their causes to encourage comment on the policy.

To ensure community input in the preparation of the CMP, a community participation program will be developed to accompany the release of the revised draft policy in early 1996. Community participation is an integral part of the CMP to protect our rivers and is the main mechanism by which information will flow between the community and management agencies regarding how we manage and protect the rivers.

The revised draft policy will also be accompanied by information on historical trends in water quality and review the current health of the rivers. This should guide new research needed to fill important gaps in our knowledge and lead to improved environmental management of the river system.

October 30, 1995

  
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**Ray Steedman**  
Chairman  
Environmental Protection Authority

  
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**Geoff Totterdell**  
Chairman  
Swan River Trust

# 1. Background

The Swan-Canning estuary is Perth's most prominent natural feature. It is a focal point for the people of Perth and is valued for its aesthetic values as much as it is for the recreational opportunities it offers and ecosystems it supports.

Community concern for the health of the rivers was raised following algal blooms during the summer of 1993/4, at which time green scums were visible in the upper reaches of both the Swan and Canning rivers. These algal blooms, and the ensuing depletion of dissolved oxygen upon their collapse and decay, caused fish and benthic invertebrate deaths — a clear and unmistakable symptom of the declining health of the waterway. Extensive media coverage, in conjunction with the more visible symptoms of water quality decline during this time, raised community expectations that the government would instigate actions to restore the health of our rivers.

The increasing incidence of algal blooms in the estuary is not a result of any recent increases in nutrient inputs to the waterway, but rather a visible expression of the cumulative effects of landuse change in the catchment and declining water quality since the 1950s.

At a public forum to discuss management of the rivers (Swan River Forum, May 1994) the Minister for the Environment asked the Environmental Protection Authority to prepare an Environmental Protection Policy to protect the Swan and Canning rivers.

An Environmental Protection Policy is a statutory policy prepared under the Environmental Protection Act (1986) which may:

- delineate the area to be protected;
- identify and declare the environmental values which are to be protected;
- specify the environmental quality objectives to be achieved;
- set out the indicators, parameters or criteria to be used for measuring environmental quality; and
- establish a program by which these environmental quality objectives are to be achieved and maintained and may specify, among other things, measures designed to:
  - (i) minimise the possibility of pollution;
  - (ii) protect the environment; and
  - (iii) achieve the environmental values to be protected.

## 2. State Conservation Strategy

A State Conservation Strategy for Western Australia was announced by the Environmental Protection Authority in 1987 (DCE, 1987) which identified the need for sustainable development and to integrate conservation and development goals to retain options for future use of our land and waters.

Resource development must provide for the essential needs of society, generate economic wealth to support our chosen standard of living, and recognise the State's importance as a reliable supplier of food and resources to world markets. At the same time, stable land-use systems must be developed so that production can be sustained with minimal resource loss and land degradation and important ecosystems, such as the Swan and Canning rivers, are conserved. Sensible, sustainable land and water use provides the basis upon which production and protection of our natural environment, with all its attendant richness, can be realised in the long-term (Government of WA, 1989).



Western Australia's conservation strategy aims to:

- maintain essential ecological processes and life-support systems;
- ensure the sustainable utilisation of species and ecosystems;
- preserve genetic diversity;
- maintain and enhance environmental qualities; and
- optimise the quality of life for Western Australians (EPA, 1987).

### **3. Purpose of the draft Environmental Protection Policy**

The purpose of this policy is to establish environmental quality objectives, guidelines, measures and a better framework for management to protect the water quality and conservation values of the Swan and Canning rivers, including its fringing habitats. The policy is to achieve this by:

- establishing the policy area as the waterway and catchment of the Swan and Canning rivers;
- establishing areas within the waterway with comparable environmental values;
- declaring the environmental values to be protected for these areas;
- establishing environmental quality objectives to enhance, achieve and maintain the environmental values of these areas;
- establishing environmental quality indicators by which the attainment of the environmental quality objectives can be measured;
- identifying responsible authorities to achieve and maintain the environmental quality objectives; and
- providing an environmental framework for statutory decision-making, particularly planning and industrial licensing decisions.

### **4. Structure of the draft Environmental Protection Policy**

The draft policy consists of five elements:

#### Part 1 - Preliminary

This part establishes the purpose of the policy, defines terms used in the policy, the portion of the environment to which the policy applies and the basis for protection.

#### Part 2 - Environmental Protection Areas

This part identifies areas within the policy area with comparable environmental values.

#### Part 3 - Environmental values to be protected

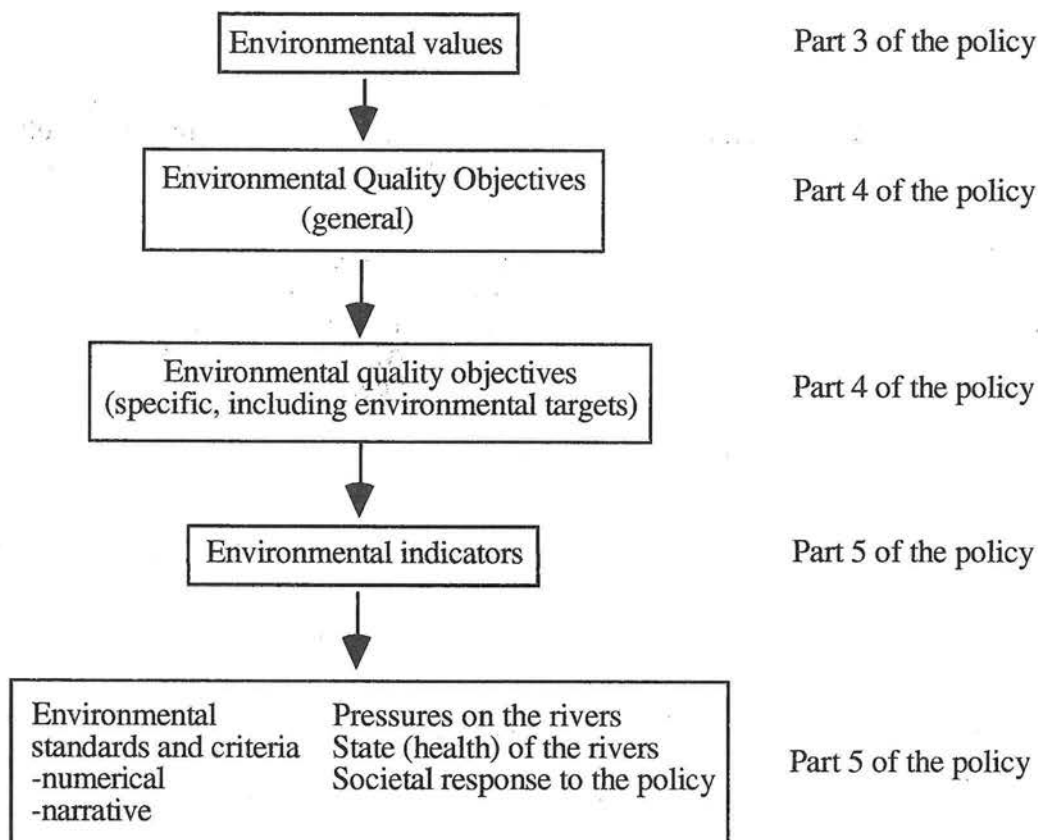
This part declares the environmental values which are to be protected for the various environmental protection areas.

#### Part 4 - Environmental quality objectives

This part establishes environmental quality objectives to achieve and maintain the declared environmental values.

#### Part 5 - Environmental quality indicators

This part establishes environmental quality indicators by which the achievement of the environmental quality objectives can be measured. These indicators will provide the primary, but not the only means, of measuring the achievement of the environmental quality objectives.



#### Part 6 - Program for protection of the Swan and Canning rivers

This part identifies activities within the policy area which may be detrimental to the environmental values, either temporarily or permanently. This part establishes statutory responsibilities for natural resource managers within the waterway and catchment and requires the preparation of a Comprehensive Management Plan for the Swan and Canning rivers by June 1998. This plan will establish a framework for management, priority areas for management, programs for the ongoing education and involvement of the community, timelines and milestones for implementation of the plan and a process to review and report implementation of the plan to the community and the EPA.

### **5. The area to which the policy applies**

The restoration, enhancement and protection of the waters of the Swan and Canning rivers cannot be achieved independently of the catchment, with which these rivers interact. The environmental values of the rivers and the water quality which supports them, and which the people of Perth value so highly, are inexorably linked to land use development and land

management decisions. Hence the policy must exert an influence over the entire catchment, not merely the Perth metropolitan area. In adopting this stance the policy is in agreement with the principle of Integrated Catchment Management, as embraced by the Government of Western Australia.

While the policy will apply to inland as well as coastal areas of the catchment, it is appreciated that management programs for these particular regions are likely to be different-an acknowledgment of the different land use and social, cultural, environmental and economic issues operating in these disparate regions.

## 6. Environmental values of the Swan and Canning rivers

Environmental values are particular values of the environment that are conducive to public benefit, welfare, safety or health and which require protection from the effects of pollution, waste discharges, deposits and destruction, as determined by the Environmental Protection Authority.

Environmental values are also commonly referred to as 'beneficial uses', a term used in other parts of the world as well as within the *Environmental Protection Act (1986)* itself. The use of the latter term suggests an exploitive approach to the management of natural resources that could be seen to be at odds with the goal of sustainable use (ANZECC, 1992). For this reason, the term 'environmental values' is used within the draft policy.

The environmental values of the Swan and Canning rivers are declared within the policy (see Part 3 of the policy) and are:

- primary contact recreation including activities such as swimming, bathing and other direct water-contact sports;
- secondary contact recreation including activities such as boating;
- passive recreation including activities such as walking, sightseeing and bird watching. Aesthetic values and the visual amenity of the natural landscape are also included here;
- sustainable amateur and commercial fishery including aquaculture;
- use of the rivers as a major port and for transport and navigation;
- use of the rivers for irrigation and drinking water supply; and
- a habitat for diverse and abundant native flora and fauna communities and their associated ecological functions.

Drainage is not considered to be an environmental value of the Swan and Canning rivers for the purposes of the policy. This is not to say that drainage is not permitted under the policy, but rather drainage is an activity which has significant potential to degrade the environmental values of the rivers and responsible authorities should address this matter through the hierarchy of farm and catchment planning, being mindful of the target phosphorus load of 20 tonnes for the waterway.



## **7. Environmental quality objectives for the Swan and Canning rivers**

The draft Swan and Canning rivers EPP's purpose is to declare and protect the environmental values of the rivers. To achieve this the policy must promote a level of water quality sufficient to support these environmental values. For this purpose the policy establishes environmental quality objectives which describe the long-term targets, or goals, for environmental management which must be attained in order to protect the environmental values of the rivers (see Part 4 of the policy).

Though the policy will fundamentally address water quality issues, there is a clear need for the policy to provide environmental guidance, focus and a framework for landholders, developers, land use planners and natural resource managers. In preparing the policy the EPA has been mindful of the importance of land use and management in achieving pre-determined water quality objectives for the rivers and the integral role of the community in realising this goal.

The revised version of the policy will likely include standards, criteria and targets which reflect the environmental quality objectives of the policy. This will require an analysis of historical trends in water quality and a review of the current health of the rivers. A technical report is being prepared jointly by the Department of Environmental Protection and Swan River Trust to address these matters and will accompany the revised draft Environmental Protection Policy upon its release for public comment in early 1996.

## **8. Swan-Avon Integrated Catchment Management (ICM) Program**

The Swan-Avon Integrated Catchment Management (ICM) Program is jointly funded by the Federal and State governments under the National Landcare Program and will run for three years, ending in June 1998. The program comprises 14 projects, one of which will reduce algal blooms in the Swan and Canning rivers and demonstrate how this will be achieved through a coordinated effort to tackle environmental degradation problems at a catchment-scale.

In particular, under the ICM program land suitability analysis, catchment planning and the development of sustainable farming systems will be undertaken along with the preparation of catchment management plans for Ellen Brook and Southern River and the restoration of the upper Canning River (Swan River Trust, 1995).

Overall responsibility for the ICM program rests with the Minister for Primary Industry through a Regional Initiative established and funded under the Federal Government's National Landcare Program, and subject to Commonwealth/State partnership agreement. The partnership is established under the Natural Resource Management (Financial Assistance) Act, 1992 and, among other things:

- acknowledges the central role of the community in achieving sustainable land use management and;
- recognises the need to assist and encourage the community to take responsibility for managing and conserving, in a sustainable manner, soil, water, vegetation and other natural resources in their area;
- identifies that the State may wish to develop strategic directions and priorities for natural resources management and implement projects;
- promotes community, industry and government partnerships in the management of natural resources;
- establishes institutional arrangements which encourage efficient, equitable and sustainable resource use and management; and

- seeks to promote the development of management plans.

The ICM program provides a vehicle to:

- protect natural ecosystems and biological diversity;
- promote community involvement in catchment planning and management at the local and regional scale;
- undertake co-ordination across the whole catchment, with Government, industry and the community working together; and
- achieve sustainable use of our natural resources (Swan River Trust, 1995).

## 9. Swan and Canning Rivers Cleanup Program

The Swan River Trust has developed a program to restore the Swan and Canning rivers — called the Swan and Canning rivers Cleanup Program. The program will focus on both action and investigation and will look at river and catchment management. Community involvement will be an integral part of the program.

The first phase of the Cleanup Program will develop a clear plan that identifies who needs to do what and when. It will act as a starting point for developing details of how the program can be implemented (Swan River Trust, 1995). This process will involve many sections of the community and all agencies who have an interest in the waterway and will ultimately lead to the preparation of Comprehensive Catchment Plans, as required under the policy.

The aims of the Cleanup Program are to:

- understand the mechanisms that trigger algal blooms and control their growth;
- identify how nutrients are getting to the rivers;
- determine the best way to manage these inputs;
- help maintain water quality, both now and in the future; by managing river sediments to reduce the store of organic material and nutrients in the waterway;
- help change land uses, planning processes and development decision-making to reduce the amount of nutrients leaving rural and urban catchments; and
- inform and involve the community in the cleanup of the Swan and Canning rivers.

## 10. Preparation of a Comprehensive Management Plan

Due to the complexities and size of the management task and a desire to maintain flexibility, the EPP will focus attention on the role and responsibilities of government agencies in protecting the environment rather than stipulating acceptable and unacceptable practices. Furthermore, the EPP requires responsible authorities to identify best management practices for activities with the potential to degrade the waterway and, through integration and coordination, prepare an Comprehensive Management Plan (CMP) to guide implementation of these, and other, practices.

One of the main goals of the Environmental Protection Policy is to encourage the use of best management practices (BMPs) to achieve environmental quality objectives identified in the policy.

BMPs are defined as:

*'those approaches which have been developed to prevent or minimise water pollution at source, or as close to the source as practicable'*

(NSWEPA, 1995)

They include those practices that are determined to be the most effective and practicable means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with the environmental quality objectives of the policy.

Community-based programs are an integral component of catchment management, but to ensure these programs are accountable, supported and ongoing in the future, government (local or state) commitment to these programs will be required before these programs can be acknowledged within the CMP. For example, the most prominent community-based urban catchment management program to date, the Bayswater Integrated Catchment Management Plan, would qualify for inclusion in the CMP under the auspices of the Bayswater City Council and Waterways Commission as co-sponsors of the initiative.

A number of 'tools' and BMPs are presently available to assist preparation of the CMP. These include;

- the Water Sensitive Urban Design Manual (prepared jointly by the Department of Environmental Protection, Ministry for Planning and Water Authority of Western Australia);
- Codes of Practice for numerous agricultural and industrial pursuits (prepared by Department of Environmental Protection and Western Australian Department of Agriculture);
- Water Pollution Control bylaws (Water Authority of Western Australia);
- Environmental Guidelines for Planners (Department of Environmental Protection); and
- Development Control Policies (Western Australian Planning Commission).

The CMP will be developed as a product of the Swan-Avon Integrated Catchment Management and Swan and Canning Rivers Cleanup Programs. The former program is a \$8.4 million Commonwealth/State Government partnership agreement (established under the National Landcare Programme) scheduled for completion in June 1998, at which time the Environmental Protection Authority will appraise the adequacy of the Comprehensive Management Plan to achieve and maintain the environmental objectives of the EPP.

To facilitate the implementation of management the CMP will detail governmental actions (local and state), community-based initiatives, education and community awareness sub-programs, timelines and milestones for implementation of the plan, performance indicators and be interfaced with departmental operational programs.

## 11. Overview

The policy identifies the variety of environmental values that the rivers possess and groups them into six categories: recreational water quality and aesthetics; maintenance of natural ecosystems; fishery; navigation, shipping and boating; drinking water supply and irrigation supply.

Table 1 of the policy contains a list of environmental values to be protected for each sub-area of the waterway and its fringing habitat. For example, the conservation reserves area should sustain natural ecosystems subject to little human impact and should accommodate passive recreation and aesthetic values. The table is intended to operate as a default mechanism to guide water quality decision-making.

Table 3 of the policy contains a list of indicators which will be used as 'yardsticks' to determine whether the environmental values (listed in Table 1 of the policy) are being met. For example, the recreational and aesthetic values of the conservation reserve area would be degraded if the any of the following were to occur: fish and benthic invertebrate kills; nuisance algal growths; impairment of aesthetic values; destruction of natural fringing vegetation or a decline in species abundance or composition.



Tables 1 and 2 of the policy are intended to guide effective, consistent and equitable environmental management decision-making in the policy area.

## 12. Public comment

The public will be provided with two opportunities to make submissions on the Environmental Protection Policy (EPP). The first opportunity is offered with this document, the Draft EPP. The second opportunity will be with the release of the Revised Draft EPP, which will be a product of public comments received on the Draft EPP and further consideration by the EPA.

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PERTH WA 6001  
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Enquiries:           call   (09) 222 7000  
                          fax   (09) 322 1598

## 13. References

Australian and New Zealand Environment and Conservation Council (1994). National Water Quality Management Strategy, policies and principles.

Environmental Protection Authority (1987). A State Conservation Strategy for Western Australia, a sense of direction. EPA Bulletin 270.

NSWEPA (1995). Draft Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation.

Swan River Trust (1995). Action for the Future, the Swan and Canning Rivers Cleanup Program.

# Draft Swan and Canning Rivers Environmental Protection Policy

The Government of Western Australia,

**RECOGNISING** its obligations under the Intergovernmental Agreement on the Environment (signed on 1 May 1992);

**REAFFIRMING** its commitment to restore, enhance and protect water quality and environmental values of the Swan and Canning rivers;

**HAVING** endorsed the principles of Integrated Catchment Management and developed and instigated cooperative programs and measures to achieve such purposes;

**NOTING THAT** where there is a threat of significant reduction or loss of biological diversity, a lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat;

**RECOGNISING** the need for strengthening efforts to address the continuing pollution of the Swan and Canning rivers, particularly by phosphorus and nitrogen;

**ACKNOWLEDGING** that much of the nutrients enter the Swan and Canning rivers from groundwater infiltration, from sediments in the rivers and from the runoff of non-point sources;

**AWARE** that further management-oriented research and the development of environmental programs is now required to enable effective actions to be taken to address the continuing degradation of the Swan and Canning rivers;

**DETERMINED** to improve and integrate management processes for restoring and protecting the water quality and environmental values of the Swan and Canning rivers and to demonstrate firm leadership in the implementation of control measures;

**RECOGNISING ALSO** the need to assist the Swan River Trust to achieve such purposes;

establishes the following:

The Environmental Protection Authority and Swan River Trust,

**REAFFIRMING** their determination to restore and enhance water quality in the Swan and Canning rivers;

**REAFFIRMING ALSO** their intent to prevent further pollution and degradation of the Swan and Canning rivers ecosystem, owing to continuing population growth and urban, industrial and agricultural development;

**CONCERNED** that significant river and wetland habitats are threatened by urban and agricultural development and waste disposal activities and should be identified, protected and, where appropriate, rehabilitated or restored.

**CONTINUING** to be concerned about the degradation of water quality to the extent that biological diversity and the associated ecological, genetic, economic, cultural, recreational and aesthetic values are being adversely affected;



**HAVING** decided that the Swan and Canning Rivers Cleanup program and Partnership Agreement between the Commonwealth of Australia and Government of Western Australia, which establishes the Swan-Avon Integrated Catchment Management Program (a National Landcare Program, regional initiative), provide a sound basis for new and more effective cooperative actions to restore and enhance water quality and environmental values for the Swan and Canning rivers;

**RECOGNISING** that restoration, enhancement and protection of the waters of the Swan and Canning rivers cannot be achieved independently of the catchment, with which these rivers interact;

**CONCLUDING** that the best means to protect the river ecosystem and achieve improved water quality throughout the rivers is by adopting common objectives, developing and implementing cooperative programs and other measures, and assigning special responsibilities and functions to landowners, community groups, state and local government bodies and non-government organisations;

have agreed as follows:

## **PART 1 - PRELIMINARY**

### **Citation**

1. This policy may be cited as the *Environmental Protection (Swan and Canning Rivers) Policy 1995*.

### **Definitions**

2. **“aquaculture”** means the cultivation of commercially important aquatic organisms, including fish, molluscs and crustaceans.

**“artificial structure”** means any man-made structure, except a floating vessel, in or adjacent to the waters of the Swan and Canning rivers including jetties, piers, moles, groynes, boat ramps, causeways, moored platforms, buoys, piles, breakwaters, rockwalls, seawalls, artificial reefs, artificial islands, and reclaimed land.

**“clearing”** means in relation to native vegetation, includes cutting, removing, destroying, burning or otherwise damaging native vegetation;

**“Comprehensive Management Plan”** means, for the purpose of this policy, a program for the protection of the environmental values declared under this policy and achievement of the attendant environmental quality objectives.

**“crustaceans”** means invertebrate organisms belonging to the group Crustacea, including rock lobsters, prawns, shrimps, crabs, and barnacles.

**“decision-making body”** means any authority empowered by, or under -

(a) a written law; or

(b) any agreement -

(i) to which the State is a party; and

(ii) which is ratified or approved by an Act.



**“discharge”**, in relation to waste or other matter, includes to deposit it or allow it to escape, or cause or permit it to be, or fail to prevent it from being, discharged, deposited or allowed to escape.

**“drainage”**, in relation to a discharge, means water conveyed by a channel or pipe and which is not considered by the Authority to be wastewater.

**“effluent”** means any waste material discharged from industrial premises.

**“environment”** means living things, their physical, biological and social surroundings, and interactions between all of these.

**“environmental values”** are peculiar values or uses of the environment that are conducive to public benefit, welfare, safety or health and which require protection from the effects of pollution, waste discharges and deposits.

**“licence”** means licence granted and in force under Part V of the Act.

**“mining operations”** has the same meaning as in section 8 (1) of the Mining Act 1978;

**“molluscs”** means invertebrate organisms belonging to the phylum Mollusca, including mussels, oysters, scallops, clams, limpets, sea-snails, squid, octopus and abalone.

**“native vegetation”** means any plant species indigenous to the waterway and fringing habitat;

**“passive recreation”** means visual recreational use (or non-contact activities) whereby waters should support aesthetically valuable flora and fauna and be free from floating debris, litter, oil, grease, other objectionable matter and undesirable colour, odour, taste or foaming and undesirable aquatic life, such as ‘algal blooms’, or dense growths of plants or animals.

**“prescribed”** means prescribed by regulation made under section 123 of the Act;

**“primary contact recreation”** means waters used for activities such as swimming, bathing and other water-contact sports.

**“Register”** means the Register of Important Natural Environments established under the *Environmental Protection (Swan and Canning Rivers) (Protected Natural Environments Register) Regulations 1995*;

**“responsible authority”** means -

- (a) a prescribed decision-making body;
- (b) the Commissioner for Soil and Land Conservation established under the *Soil and Land Conservation Act, 1945*;
- (c) the National Parks and Nature Conservation Authority established under the *Conservation and Land Management Act, 1984*, in relation to lands vested in that authority;
- (d) any Waterway Management Authority established under the *Waterways Conservation Act, 1976*;



- (e) any Minister of the Crown charged with the administration of any Act mentioned in the Schedule to this policy;
- (f) every board, municipal council or Commissioner of a municipality established or constituted under any of the Acts mentioned in Schedule 1 of this policy;
- (g) the new water resources Commission under the (yet to be proclaimed) Water Resources Act, 1995;
- (h) the Executive Director within the meaning of the *Conservation and Land Management Act, 1984*;
- (i) the Commissioner of Main Roads;
- (j) the Chief Executive Officer within the meaning of the *Environmental Protection Act, 1986*; and
- (k) any other person or body declared by the Governor by Order in Council to be a decision-making body for the purposes of this Act.

**“secondary contact recreation”** means activities such as boating and fishing and other uses where incidental immersion or ingestion may occur.

**“shellfish”** means molluscs excluding squid, calamari, and octopus.

**“Statement of Planning Policy”** has the same meaning as under Section 5AA of the *Town Planning and Development Act, 1928*.

**“the authority”** means the Environmental Protection Authority.

**“this policy”** means this environmental protection policy.

**“vessel”** means boat, ship, yacht, canoe, powerski, surf-board, sailboard, windsurfer or raft.

**“waste”** includes matter-

- (a) whether liquid, solid, gaseous or radioactive and whether useful or useless, which is discharged into the environment; or
- (b) prescribed to be a waste.

**“wastewater”** mean liquid waste and includes faecal matter and urine.

**“works approval”** means works approval granted and in force under Part V of the Act.

### **Purpose of this policy**

3. The purpose of this policy is to declare the environmental values of the Swan and Canning rivers and to establish a program to protect these values and in doing so:

- (a) enhance and maintain water quality;
- (b) ensure a diverse and sustainable population of locally indigenous flora and fauna; and
- (c) conserve and protect important natural features.



## **Structure of this policy**

### **4. This policy:**

- (a) identifies areas of the environment within the policy area with similar environmental values;
- (b) declares the environmental values to be protected for these areas;
- (c) establishes environmental quality objectives to enhance, achieve and maintain the environmental values of these areas;
- (d) establishes environmental quality indicators by which the attainment of the environmental quality objectives can be measured;
- (e) identifies responsible government agencies for the purposes of achieving and maintaining the environmental quality objectives;
- (f) identifies the catchment of the Swan and Canning rivers for the purpose of the policy;
- (g) provides an environmental framework for statutory decision-making, particularly planning and licensing decisions.

## **Basis for protection**

- 5. The waters and fringing habitat of the Swan and Canning rivers are an important aesthetic, recreational and environmental resource to the people of Western Australia.
- 6. The waters and fringing habitat of the Swan and Canning rivers support multiple and diverse environmental values which are being adversely affected and require protection so that water quality necessary to support these values can be achieved and maintained.
- 7. The principal existing environmental values of the waterway and its fringing habitat are the conservation of natural aquatic and fringing ecosystems, aesthetic and recreational enjoyment, amateur and commercial fishery, transport and a shipping channel for the ports of Fremantle and Perth.
- 8. The environmental values of the waterway and fringing habitat of the Swan and Canning rivers are being adversely affected by discharges from activities within the waterway and its catchment.
- 9. The environmental values of the waterway and its associated habitat are being adversely affected by urban, industrial and rural land use within the catchment.

## **The policy area**

- 10. The policy area is the area of land comprising the Swan and Canning rivers and its catchment, as described in Schedule 2.

## **Application**

- 11. In accordance with the principles of Integrated Catchment Management, as endorsed by the Government of Western Australia, and in recognition of the impact that land use in the catchment may have on the Swan and Canning rivers, and for the purposes of application of the policy, the following elements of the policy area are established:



- (a) **"the waterway"**, as described in Schedule 3, being all waters of the Swan and Canning rivers bounded by:
  - (i) the high water mark;
  - (ii) a line drawn between the western most extremities of the North and South Moles;
  - (iii) a line drawn across the Swan River at its confluence with Moondyne Brook; and
  - (iv) a line drawn across the Canning River coincident with the wall of the Canning Dam.
- (b) **"its major tributaries"**, as described in Schedule 3, being the following watercourses:
  - (i) Ellen Brook;
  - (ii) Helena River;
  - (iii) Bennett Brook;
  - (iv) Southern River; and
  - (v) Jane Brook;
- (c) **"the fringing habitat"**, as described in Schedule 3, being all lands within 400m of the waterway and its major tributaries;
- (d) **"the coastal plain catchment"** being that portion of the catchment to the west of the confluence of Moondyne Brook with the Swan River, as shown in Schedule 2; and
- (e) **"the inland catchment"** being that portion of the catchment other than that specified in (d), as shown in Schedule 2.

## **PART 2 - ENVIRONMENTAL PROTECTION AREAS OF THE WATERWAY AND FRINGING HABITAT**

### **Environmental Protection Areas declared for the waterway and fringing habitats**

12. For the purpose of the policy, the following Environmental Protection Areas are established for the waterway and fringing habitat within the policy area:

- (a) Conservation Reserves Area;
- (b) Register of Important Natural Environments;
- (c) Fringing Area;
- (d) Port Area;
- (e) General Waters Area; and
- (f) Drinking Water Source Area

### **Conservation Reserves Area**

13. An area shall be included in the Conservation Reserves Area if it lies wholly, or in part, within the waterway or its fringing habitat and:

- (a) provides habitat for flora or fauna declared likely to become extinct, rare or otherwise in need of special protection, under the *Wildlife Conservation Act, 1950*;



- (b) the area is proclaimed as a National Park, Nature Reserve, Marine Reserve, Marine Park and Marine Management Area, or part thereof, under the *Conservation and Land Management Act, 1984*;
- (c) is an area:
  - I. listed under the *Ramsar Convention* on Wetlands of International Importance, *Japanese-Australian Migratory Bird Agreement* or *Chinese-Australian Migratory Bird Agreement*;
  - II. protected under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992*; or
  - III. a System 6 Area, as specified in the Conservation Through Reserves Committee Report on National Parks and Nature Reserves in Western Australia, as published by the Environmental Protection Authority, or as amended from time to time;
- (d) established for the purpose of natural landscape or habitat protection under the *Town Planning and Development Act, 1928*;
- (e) is a Regional Park established under the *Metropolitan Region Town Planning Scheme Act, 1959*;
- (f) is a Planning Control Area or Improvement Plan established under the *Metropolitan Region Town Planning Scheme Act, 1959* for the purposes of natural landscape or habitat protection; or
- (g) is a Parks and Recreation Reservation under the *Metropolitan Region Town Planning Scheme Act, 1959* and which has a high degree of naturalness or significant natural attributes and functions.

## **Register of Important Natural Environments**

14. An area may be included as an Important Natural Environment if it has a high degree of naturalness or significant natural attributes and functions, or may be rehabilitated to achieve these values, and lies wholly, or in part, within the waterway or fringing habitat.
15. Important Natural Environments shall include areas of:
- (a) biological importance including wetlands, saltmarsh, seagrass meadows, wildlife corridors and other areas as described in the Register of Important Natural Environments; or
  - (b) natural features of importance including promontories, headlands, cliffs, river bed features and other areas as described in the Register of Important Natural Environments.
16. Important Natural Environments shall be in addition to those areas included in the Conservation Reserves Area.
17. Any person or organisation may request the Authority, in a form approved by the Authority, to add or delete any area to or from the Register of Important Natural Environments, or to amend the entry in the Register in respect of any area.
18. In considering a request under clause (17) the Authority shall have regard for the advice of the owner of the area that is the subject of the request.



19. The Authority may take any action, or it may take no action, as it considers appropriate in response to a request under clause (17).
20. The register is available for public inspection during normal office hours at offices of the Department of Environmental Protection.
21. In clause (18), "owner" includes the person in whom the care, control and management of an area is vested.
22. The Authority shall publish in the *Gazette* the inclusion of any area to the Register of Important Natural Environments and the grounds for that inclusion.

### **Port Area**

23. The area under the jurisdiction of the Fremantle Port Authority, and the area prescribed as the Port of Perth under the *Shipping and Pilotage Act (1967)* described in Schedule 3.

### **Fringing Area**

24. The Fringing Area, as described in Schedule 3, is the area of the fringing habitat.
25. The Fringing Area shall be in addition to the Conservation Reserves Area, Important Natural Environments and Port Area.

### **Drinking Water Source Area**

26. The Drinking Water Source Area, as described in Schedule 3, includes Catchment Areas proclaimed under the *Metropolitan Water Supply, Sewerage and Drainage Act, 1909* which are located below water supply dams and reservoirs.

### **General Waters Area**

27. The General Waters Area includes all other areas of the waterway and its major tributaries not included within the Conservation Reserves Area, Important Natural Environments, Port Area, Drinking Water Source Area and Fringing Area.



## PART 3 - ENVIRONMENTAL VALUES OF THE ENVIRONMENTAL PROTECTION AREAS TO BE PROTECTED

28. The environmental values shown in Table 1 shall be protected for each Environmental Protection Area as marked by a tick.

Table 1: Environmental values to be protected for each Environmental Protection Area.

Environmental value	Environmental Protection Area					
	Conservation Reserves Area	Important Natural Environments	Port Area	Drinking Water Source Area	Fringing Area	General Waters Area
<b>Recreation</b>						
Primary contact recreation						√
Secondary contact recreation			√			√
Passive recreation (including aesthetics)	√	√	√	√	√	√
<b>Maintenance of natural aspects of ecosystems that are subject to:</b>						
Little human impact (natural species composition and abundance)	√	√				
Some human impact (some changes to species composition and abundance)		√	√	√	√	√
Significant human influences (significant changes to species composition and abundance)		√	√	√	√	√
<b>Fishery</b>						
Taking of molluscs, fish and crustaceans from wild populations for human consumption					√	√
Aquaculture for human consumption			√			√
Navigation, shipping and boating			√			√
Drinking water supply				√		
Irrigation supply						√



## **PART 4 - ENVIRONMENTAL QUALITY OBJECTIVES NECESSARY TO PROTECT THE ENVIRONMENTAL VALUES**

The environmental quality objectives describe the long-term targets, or goals, for environmental management which must be attained in order to protect the environmental values of the waterway and fringing habitat.

### **General environmental quality objectives**

29. All reasonable and practicable means shall be taken to maintain or improve water quality in the waterway and fringing habitat, even where that water quality meets or exceeds that specified under this policy.
30. Responsible authorities shall not consider dilution of wastewater through flow augmentation as a substitute for best management practices and treatment to meet water quality standards or environmental indicators.
31. Aesthetic values shall be protected such that best management practices shall be employed to prevent floating materials and visible films of oils, scums, greases and other immiscible substances resulting from human activities in amounts that are unsightly or deleterious.
32. To achieve and maintain discharges of nutrients in amounts which do not create growths of aquatic life at populations or frequencies that impair the environmental values of the waterway.

### **Specific environmental quality objectives (including management targets)**

33. Pursuant to clause (32), the environmental management target for the waterway shall be:
  - (a) 20 tonnes of phosphorus per annum; and
  - (b) be apportioned according to Table 2;
  - (c) be measured at the points shown in Schedule 4; and
  - (d) be attained by the year 2010.
34. The target phosphorus load described in clause (33) may be amended by the Authority from time to time in the light of future research and modelling, in which case such a change shall be deemed to constitute a minor amendment to this policy, pursuant to section 37 of the Act.
35. (1) Most natural vegetation in the Fringing Area has been severely degraded or destroyed and many other areas are under considerable threat of being degraded or destroyed.  
  
(2) The natural vegetation of the Fringing Area is under-represented on both private and public lands.



Table 2: Apportionment of the phosphorus target load to the sub-catchments of the Swan and Canning rivers

Sub-catchment	Phosphorus target load (tonnes/yr)
Ellen Brook	8.3
Avon River	6.4
Southern River	1.7
Bayswater Main Drain	1.1
Bannister Creek	0.4
Mills St Main Drain	0.4
Yule Brook	0.3
Bennett Brook	0.3
Canning River	0.3
Claisebrook Main Drain	0.2
South Belmont Main Drain	0.2
Helena River	0.1
Blackadder Creek	0.1
Jane Brook	0.1
Susannah Brook	0.1

(3) Responsible authorities shall ensure:

- (a) native vegetation within the Fringing Area is not cleared, degraded or destroyed; and
- (b) Comprehensive Management Plans, required under clauses (47) and (48), and the Statement of Planning Policy, required under clause (49), shall achieve and maintain a net increase in the area and quality of locally indigenous vegetation within the Fringing Area through the protection, rehabilitation and restoration of native vegetation.

36. It is recognised that there may be areas within the waterway and the fringing habitat where one or more of the environmental objectives are not being met. The responsible authorities shall identify and work toward remediating these areas, details of which shall be included in the Comprehensive Management Plans required under clauses (47) and (48).



## PART 5 - ENVIRONMENTAL QUALITY INDICATORS

### General environmental quality indicators

37. Environmental indicators shall be used as the primary means by which the protection of environmental values shall be measured.

38. Environmental indicators shall comprise measures of:

- (a) the quality and quantity of natural resources;
- (b) human-induced pressures on the environment;
- (c) societal and behavioural responses associated with management of the environment.

39. Environmental indicators shall:

- (a) provide a process by which actions and subsequent effects on environmental values can be gauged with time;
- (b) provide a basis for appraising environmentally sustainable development and the maintenance of biological diversity within the waterway and fringing habitats; and
- (c) provide a process by which implementation of the Comprehensive Management Plans required under clauses (47) and (48) and subsequent effects on environmental values can be gauged with time.

### Specific environmental quality indicators

40. Degradation of the environmental values shall mean a change in the chemical, physical or biological values of an Environmental Protection Area, or portion thereof, as shown in Table 3 as marked by a tick, pursuant to clause (28).

41. Changes in activities that may degrade the environmental values of the rivers and societal and behavioural responses arising from improved environmental awareness shall be gauged by the rate and extent of the adoption of best management practices within the policy area and shall include, but not be limited to, the following indicators:

- (a) the number of approved farm plans prepared (approved being for the purposes of section 75D of the *Income Tax Assessment Act, 1936*);
- (b) the number and extent to which approved farm plans have been implemented;
- (c) the amount and form of phosphorus and nitrogen applied as chemical fertilisers to agricultural and urban lands and whether this was applied in accordance with:
  - (i) plant growth requirements as determined by soil or plant tissue testing; or
  - (ii) recommended rates as published by the Western Australian Department of Agriculture from time to time.



Table 3: Indicators of degradation of environmental values

Indicator of degradation of environmental value	Environmental values								
	Recreation			Maintenance of natural ecosystems			Fishery	Drinking Water Supply	Irrigation supply
	Primary	Secondary	Passive	Little impact	Some impact	Significant influence			
Restrictions on human consumption of fish and shellfish				√	√		√		
Tainting of fish and shellfish flavour				√	√		√		
Mass fish kills	√		√	√	√	√	√	√	
Fish tumours or other deformities				√	√		√	√	
Mass kills of benthic invertebrate communities			√	√	√	√	√	√	
Excessive or nuisance algal or other plant growth			√	√	√	√		√	
Closure to swimming	√	√		√	√				
Degradation of aesthetics, pursuant to clause (31)	√	√	√	√	√	√		√	
Degradation, destruction or removal of natural fringing vegetation			√	√	√	√	√	√	
Seagrass decline				√	√		√		
Crop, pasture or stock illness/death									√
Closure of drinking water supply								√	
Decline in species abundance			√	√	√	√	√		
Decline in species composition				√	√	√	√		

- (d) the number, nature, location and estimated pollutant removal efficiencies of agricultural and urban best management practices (including Water Sensitive Urban Design practices);
- (e) for premises licensed by the Department of Environmental Protection, under the Act;
- (i) their number, nature and location;
  - (ii) the number of premises which are operating in accordance with best management practices or codes of practice;
  - (iii) licensed annual nitrogen and phosphorus discharges;
  - (iv) actual annual nitrogen and phosphorus discharges, as measured by industry self-monitoring;
  - (v) changes in pollutant discharges arising from the issuance of works approvals and licences;



## **PART 6 - PROGRAM FOR PROTECTION OF THE ENVIRONMENTAL VALUES OF THE SWAN AND CANNING RIVERS**

### **Activities that may degrade the environmental values of the Swan and Canning rivers**

42. Activities within the policy area that may degrade the environmental values of the waterway and fringing habitats include:

- (a) drainage discharge;
- (b) septic tank discharge;
- (c) sewer overflows;
- (d) industrial discharges;
- (e) agricultural discharges including, but not limited to, runoff;
- (f) internal nutrient loads, such as those arising from the release of nutrients from the benthic sediments within the waterway;
- (g) recreation;
- (h) infrastructure (roads, power, sewer, etc);
- (i) marina and canal developments;
- (j) boat moorings, boat sullage, boat sheds, boat refuelling, jetties and artificial structures;
- (k) aquaculture;
- (l) fishing;
- (m) ballast water discharge;
- (n) dredging;
- (o) reclamation;
- (p) Port and Harbour activities;
- (q) landfills;
- (r) pesticide spraying;
- (s) cutting, clearing or removing native vegetation;
- (t) introduction of foreign (not locally indigenous) organisms; and
- (u) mining operations.

### **Agency responsibilities**

43. The Environmental Protection Authority and the Swan River Trust shall exercise their powers, duties and functions to:

- (a) ensure all government departments, agencies and bodies understand and carry out their responsibilities with respect to this policy;
- (b) promote community understanding and encourage community contributions to improve environmental quality in the policy area.

44. The Department of Environmental Protection and the Swan River Trust shall exercise their powers, duties and functions to:

- (a) work co-operatively with all who use and manage the waterway and its catchment and to develop and promote best management practices, environmental guidelines and codes of practice to achieve and maintain the environmental objectives of this policy;
- (b) impose conditions which are consistent with the purpose of this policy in any works approval or licence under Part V of the Environmental Protection Act or any development subject to the Swan River Trust Act;



- (c) co-ordinate, review and report on the attainment of the provisions of this policy.
45. The Ministry for Planning and Swan River Trust shall ensure the adequacy of administrative arrangements for requiring best management practices (including Water Sensitive Urban Design principles) for new urban developments in order to minimise the adverse effects associated with the discharge of pollutants.
46. Local Government Authorities and the Swan River Trust shall:
- (a) ensure that their decisions and actions are consistent with achieving the environmental objectives of this policy;
  - (b) ensure the adequacy of administrative arrangements for requiring best management practices and codes of practice for new developments.

### **Swan and Canning rivers Comprehensive Management Plan**

47. The Western Australian Department of Agriculture shall develop and implement a Comprehensive Management Plan for the inland catchment, being a product of the Swan-Avon Integrated Catchment Management program, in consultation with the Department of Environmental Protection, the Soil and Land Conservation Council of Western Australia, the Western Australian Farmers Federation, Local Government Authorities, the Ministry for Planning, the Estuarine Research Foundation, the new water resources Commission and the Water Corporation, and be consistent with the purpose of this policy.
48. The Swan River Trust in collaboration with the new water resources Commission shall develop and implement a Comprehensive Management Plan for the coastal plain catchment, being a product of the Swan-Avon Integrated Catchment Management and Swan and Canning Rivers Cleanup programs, in consultation with the Department of Environmental Protection, Local Government Authorities, the Soil and Land Conservation Council of Western Australia, the Western Australian Farmers Federation, the Ministry for Planning, the Estuarine Research Foundation, the Department of Agriculture and the Water Corporation, and be consistent with the purpose of this policy.
49. The Ministry for Planning, in consultation with the Swan River Trust, shall prepare and implement a Statement of Planning Policy (SPP) for the Fringing Area consistent with the environmental quality objectives. The SPP shall be a component of the Comprehensive Management Plan required by clause (48) and have regard for Foreshore Management Plans prepared by the Swan River Trust, local government environmental programs, the implementation of best management practices and provide for continued public access to the foreshore.
50. Comprehensive Management Plans required by clauses (47) and (48) shall establish a program for the achievement and maintenance of the environmental quality objectives and environmental management targets, as described in clauses (29) to (36), and address activities which may degrade the environmental values of the Swan and Canning rivers, as described in clause (42).
51. It is recognised that there may be areas where one or more of the environmental objectives of this policy are not being met. The responsible authorities shall identify and develop a remediation plan for these areas, pursuant to clauses (47) and (48).
52. The Swan River Trust shall be responsible for the coordination and integration of the Comprehensive Management Plans required under clauses (47) and (48).
53. The Comprehensive Management Plans required under clauses (47) and (48) shall establish:



- (a) a framework for the co-ordinated management of land and water resources, research and activities that affect environmental quality;
- (b) priority areas for action;
- (c) specific responsibilities for particular issues;
- (d) programs for the ongoing involvement of the community;
- (e) a timeline and milestones for implementation of the plans;
- (f) environmental quality indicators, in addition to those required under clauses (40) and (41), and pursuant to clauses (37) to (39);
- (g) a process to review and report implementation of the plans to the community and the Environmental Protection Authority. Reporting is to be in a manner approved by the Department of Environmental Protection for inclusion in State of the Environment reporting.

## **Research**

- 54.** Research funded or undertaken by government shall be consistent with the preparation and implementation of the Comprehensive Management Plans and be consistent with the purpose of this policy.
- 55.** The Fisheries Department in collaboration with the Fremantle Port Authority shall undertake a review of practices and procedures regarding ballast waters and their deleterious effect on water quality, including, as required, studies to determine if live fish or invertebrates in ballast water discharges to the Swan and Canning rivers constitutes a threat to the system.

## **Waterway activities**

### **56. Dredging and disposal of dredged material.**

- A person shall not cause or permit dredging activities, including the disposal of spoil, re-suspension or dispersal of sediments and accumulated contaminants, so as to be detrimental to the long term protection of the environmental values. In particular, dredging for navigation and port facilities shall be conducted according to best management practice, or any guideline or code of practice approved by the Authority from time to time.

### **57. Fremantle Port and harbours.**

The Fremantle Port Authority shall:

- (a) ensure compliance with national and international conventions for controlling the discharge of wastes, including ballast waters and sediments, from vessels; and
- (b) ensure loading and unloading of vessels and other harbour activities are conducted so as to prevent the pollution of water.

### **58. Marina and canal developments.**

- (a) The environmental quality objectives for marina and canal developments shall be those objectives for the Environmental Protection Areas in which the development is located and to which the development is hydraulically connected; and
- (b) responsible authorities shall ensure that any development, including those associated with a marina or canal estate, is not detrimental to the protection of the environmental values or the attainment of the environmental quality objectives.



## **59. Artificial structures.**

Responsible authorities shall ensure that any new artificial structure does not adversely impact on environmental values by its physical form or through potential pollution of waters from any materials used in its construction or any products of any degradation of the materials of the structure.

## **60. Operation and maintenance of vessels**

Responsible authorities shall ensure:

- (a) potential contaminants from vessel maintenance, refuelling and related activities are contained and are disposed of according to current best management practice, or a code of practice, approved by the Authority or Swan River Trust from time to time;
- (b) litter is not deposited in the waterway;
- (c) untreated sewage is not discharged to the waterway; and
- (d) sewage is contained on vessels fitted with a toilet or sleeping accommodation for transfer to treatment works or other means of disposal acceptable to the Authority.

## **61. Aquaculture**

- (a) Responsible authorities shall ensure that environmental values are protected with respect to any aquaculture activities including:
  - (i) the artificial concentration of marine organisms;
  - (ii) the operations required to maintain these populations; and
  - (iii) the harvesting and processing activities.
- (b) The Fisheries Department of Western Australia shall ensure that aquaculture is conducted in accordance with current best management practice, or any code of practice approved by the Authority from time to time.

## **62. Harvesting of living resources**

The Fisheries Department of Western Australia shall ensure that environmental values are protected with respect to any fish, shellfish or other aquatic biota harvesting activities, including activities that involve the use of equipment placed or towed on, or near, the riverbed or activities which may cause locally non-indigenous organisms to be released into the environment.

## **63. Recreational activities**

Responsible authorities and local government authorities shall ensure that facilities are planned and managed to control any present, or anticipated, impact on the waterway and fringing habitats in order to protect the environmental values.

## **Catchment activities**

### **64. Sewerage and wastewater treatment plants**

The new water resources Commission and the Water Corporation shall protect environmental values by ensuring that:

- (a) wastewater treatment plants are operated to minimise discharges, either directly or indirectly, to the waterway;



- (b) strategies are developed for the future management, treatment and disposal of effluent to minimise discharges to the waterway;
- (c) strategies to minimise discharges to the waterway from emergency release structures and malfunctions or failures of sewerage systems are developed and implemented; and
- (d) that these strategies and operational considerations shall be reflected in the Comprehensive Management Plans, pursuant to clauses (47) and (48).

## **65. Drainage management**

Responsible authorities shall:

- (a) ensure new developments are designed, constructed and operated in accordance with:
  - (i) Water Sensitive Design Principles, as published by the Ministry for Planning, and amended from time to time;
  - (ii) best management practices, or other criteria, specified by the Department of Environmental Protection; and
  - (iii) the prevention and mitigating of land degradation within the meaning of the Soil and Land Conservation Act, 1945;
- (b) develop and implement strategies to prevent litter from entering drainage systems; and
- (c) ensure that during preparation of the Comprehensive Management Plans existing drainage systems are reviewed to identify opportunities for enhancement, and where practical retrofitting of technologies, to minimise the environmental impacts on the waterway arising from their design and operation.

## **SCHEDULE 1**

### **ACTS TO WHICH THIS ENVIRONMENTAL PROTECTION POLICY APPLIES**

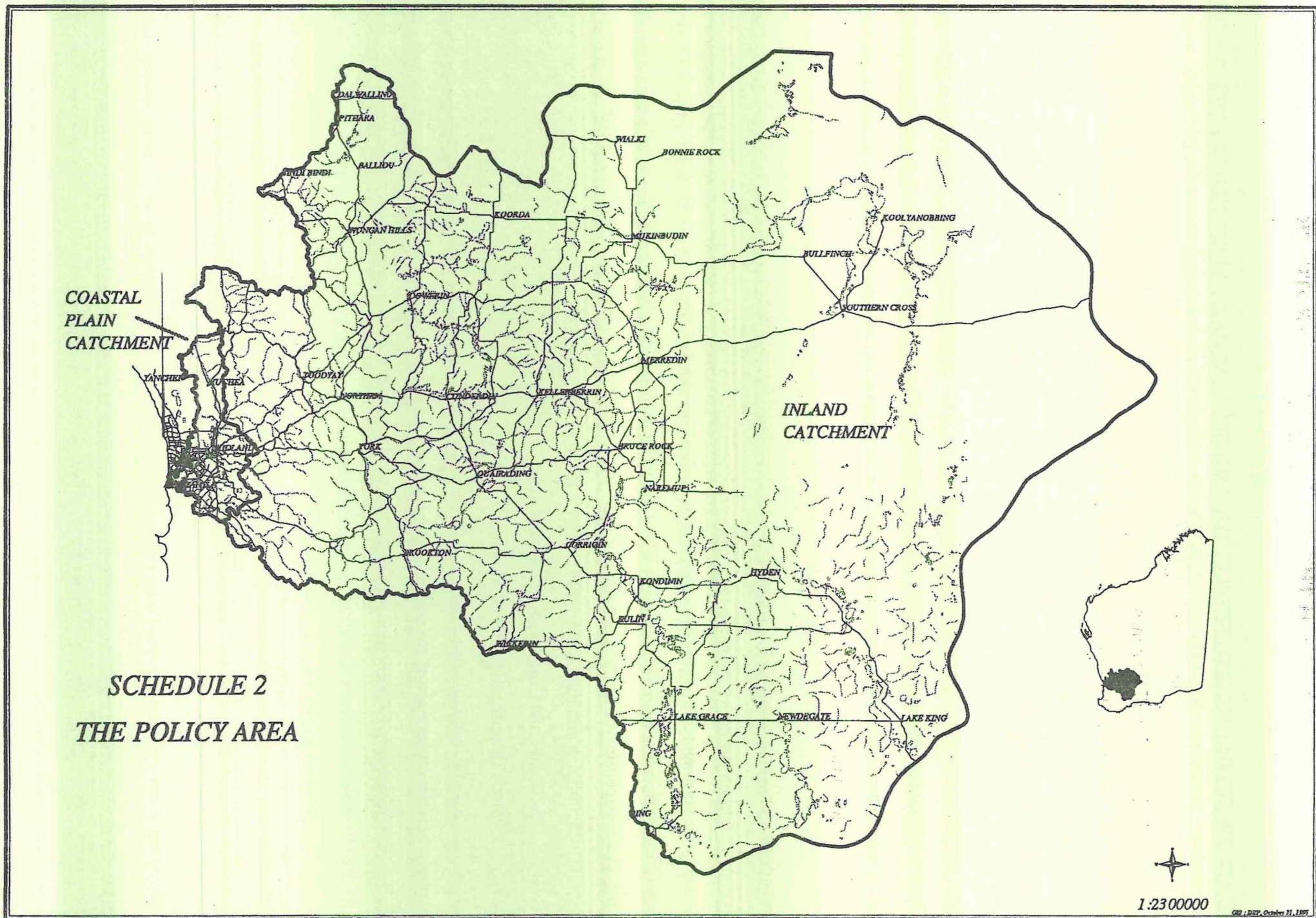
Bush Fires Act 1954  
Conservation and Land Management Act 1984  
East Perth Redevelopment Act 1991  
Environmental Protection Act 1986  
Forests Act 1918  
Health Act 1911  
Jetties Act 1926  
Land Act 1933  
Land Drainage Act 1925  
Local Government Act 1960  
Main Roads Act 1930  
Metropolitan Region Town Planning Scheme Act 1959  
Mining Act 1978  
Rights in Water and Irrigation Act 1914  
Shipping and Pilotage Act 1967  
Soil and Land Conservation Act 1945  
Stock (Identification and Movement) Act 1970  
Swan River Trust Act 1988  
Town Planning and Development Act 1928  
Waterways Conservation Act 1976  
Water Resources Act, 1995 (yet to be proclaimed)  
Wildlife and Conservation Act 1950



COASTAL  
PLAIN  
CATCHMENT

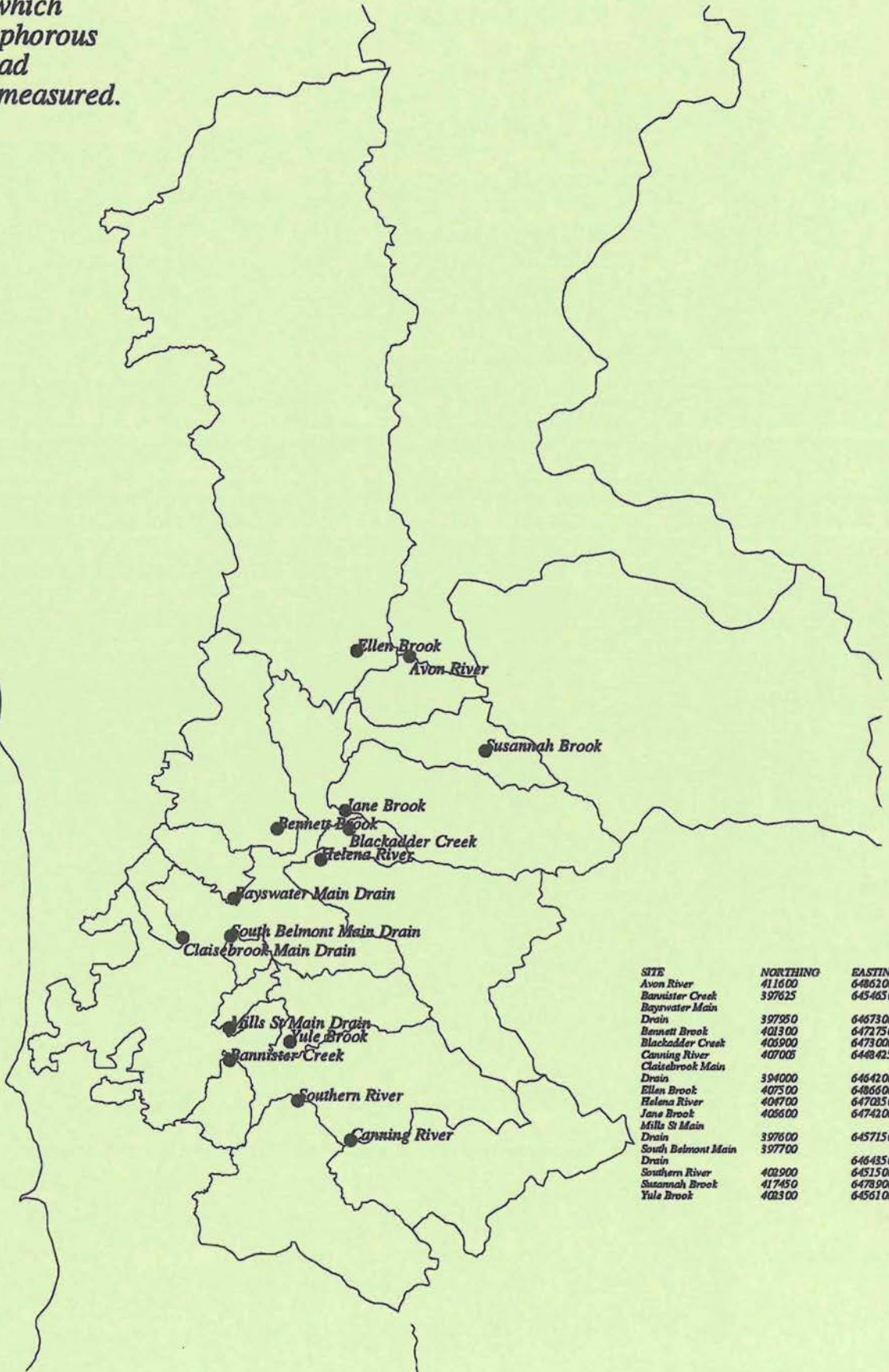
INLAND  
CATCHMENT

**SCHEDULE 2**  
**THE POLICY AREA**





**SCHEDULE 4**  
**Sites at which**  
**the Phosphorous**  
**target load**  
**shall be measured.**



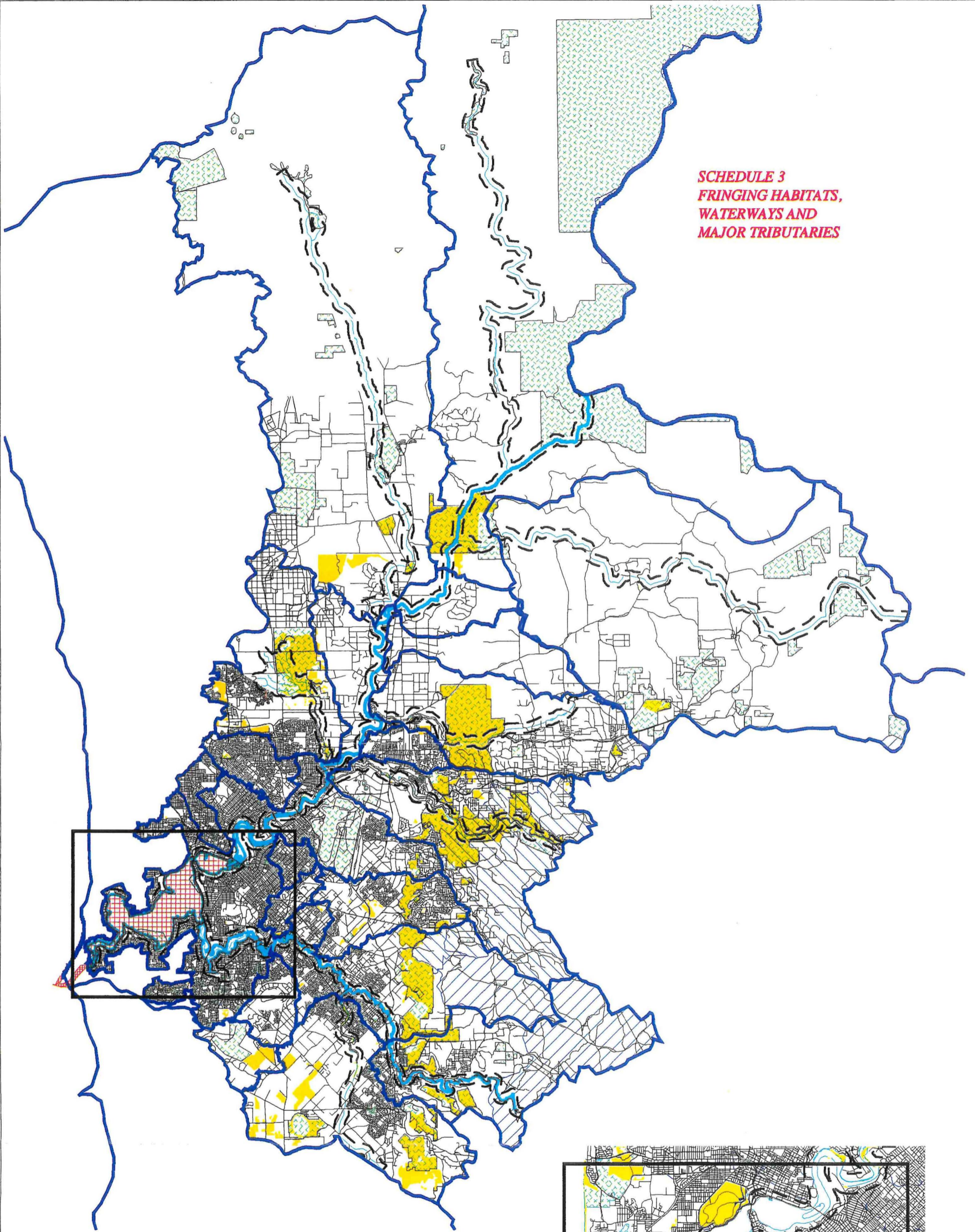
SITE	NORTHING	EASTING
Avon River	411600	6486200
Barvister Creek	397625	6454650
Bayswater Main Drain	397950	6467300
Bennett Brook	401300	6472750
Blackadder Creek	405900	6473000
Canning River	407005	6448425
Claisbrook Main Drain	394000	6464200
Ellen Brook	407500	6486500
Helena River	406700	6470850
Jane Brook	405600	6474200
Mills St Main Drain	397600	6457150
South Belmont Main Drain	397700	6464350
Southern River	402900	6451500
Susannah Brook	417450	6478900
Yule Brook	402300	6456100



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**SCHEDULE 3  
FRINGING HABITATS,  
WATERWAYS AND  
MAJOR TRIBUTARIES**



**CONSERVATION RESERVE AREAS**

- MRS Parks & Reserves Containing Remnant Vegetation
- System 6

**PORT AREA**

- Port of Fremantle
- Port of Perth

**DRINKING WATER SOURCE AREA**

- Proclaimed Priority Area 1
- Proclaimed Priority Area 2

**FRINGING AREA, WATERWAYS AND MAJOR TRIBUTARIES**

- Fringing Area
- Catchment boundaries
- Waterways
- Major Tributaries
- Street centre lines

*Metropolitan Region Scheme  
Source: Ministry for Planning, 1994*

*System 6  
Source: Department of Environmental Protection*

*Catchment boundaries of the Swan River Basin  
Source: Waterways Commission, 1994*

*Road centre line network  
Source: Main Roads Department, 1994*

*Swan / Canning River Drainage  
Copyright by Waterways Commission*

**REMANANT VEGETATION**  
*Source: Ministry for Planning, 1994*

