



Water and Rivers
Commission

STATEWIDE POLICY NO 13

Policy and Guidelines for Recreation within Public Drinking Water Source Areas on Crown Land

2003

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POLICY AND GUIDELINES FOR RECREATION WITHIN PUBLIC DRINKING WATER SOURCE AREAS ON CROWN LAND

Prepared by
Resource Management Division
Water and Rivers Commission

WATER AND RIVERS COMMISSION
STATEWIDE POLICY NO. 13
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We welcome your feedback

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Foreword

The Water and Rivers Commission is responsible for the protection of water sources used for public drinking supply. Catchment Areas, Water Reserves and Underground Water Pollution Control Areas are proclaimed under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947* to protect the quality of these water sources in Western Australia. These areas are collectively described as Public Drinking Water Source Areas (PDWSAs). The Water and Rivers Commission develops policy and guidelines to ensure PDWSAs are protected.

In May 2001, the State Government released the State Water Quality Management Strategy (SWQMS) as its response to the National Water Quality Management Strategy. These strategies recognise six environmental values of water resources as described in the Australian and New Zealand guidelines for fresh and marine water quality (ANZECC/ARMCANZ, 2000). The values are:

- Drinking water;
- Aquatic ecosystems;
- Primary industries (irrigation and general water uses, stock drinking water, aquaculture and human consumption of aquatic foods);
- Recreation and aesthetics;
- Industrial water; and
- Cultural and spiritual values.

The primary aim of this policy document is to protect the ‘drinking water’ environmental value of PDWSAs on Crown land, in the interest of public health. This will be achieved by protecting drinking water sources from contamination that may be caused by inappropriate recreational activities. It is also expected that other values (e.g. aquatic ecosystems) will be afforded some protection through this policy.

Implementation of this policy is consistent with the Commission’s water quality protection framework for drinking water sources. The framework includes preparation of Allocation Plans and Water Source Protection Plans (WSPPs). Allocation plans identify the water resources to be protected and define the water use licensing policy for an area. WSPPs identify priority classification areas (see below), influence land use planning, recommend management strategies for the area and provide direction for development controls through conditional approval and enforcement of by-laws under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*.

The Commission defines three levels of priority classification for PDWSAs. Priority 1 is the highest level of protection and would typically comprise land owned or vested in the Crown. This policy document provides a clear statement of the Commission’s position regarding recreational activities within Priority 1 PDWSAs on Crown land. It will be relevant to the public, other Government agencies, water service providers and recreation interest groups. Within Priority 1 areas, risk avoidance is the key management approach.

The policy is also recommended for Priority 1 areas which are not on Crown land, and as a benchmark for discussion of acceptable recreational uses within Priority 2 and 3 PDWSAs.

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Part A Policy and Guidelines

1 Policy

The Commission's policy on recreation within Priority 1 Public Drinking Water Source Areas (PDWSAs) on Crown land is outlined below. Chapter 4, Policy Framework, provides further detail in support of this position.

1.1 Objective

The prime objective of this policy is to protect drinking water sources from contamination through inappropriate recreational activities, in the interest of public health.

This objective recognises the importance of providing a safe drinking water supply above all other uses within Priority 1 PDWSAs on Crown land.

Achievement of this objective will assist in protecting other environmental values which these water sources may have, such as aquatic ecosystems.

1.2 Application

This policy applies to all recreational access and activities within proclaimed PDWSAs (Priority 1) on Crown land. It also applies to recreational activities within proposed PDWSAs on Crown land.

The policy is relevant to:

- Any agency responsible for approving recreational activities within proclaimed and proposed Priority 1 PDWSAs on Crown land; and
- Any group, association or individual that wishes to organise or participate in a recreational activity within proclaimed and proposed Priority 1 PDWSAs on Crown land.

Crown land, as defined under this policy, means all land except alienated land. ("Crown land" thus includes reserved and leased Crown land, land owned or vested in Government agencies, tidal waters, reclaimed land, river beds and lakes.)

Recreation, as defined under this policy, refers to a wide range of leisure, pastime or entertainment pursuits, including bushwalking, orienteering, swimming, boating, fishing, camping, horse-riding and four-wheel driving. It also includes group outings and commercial activities such as camel trails, llama walks and car rallies.

The policy is also recommended for Priority 1 land not owned by the Crown, and as a benchmark for discussion of acceptable recreational uses within Priority 2 and 3 PDWSAs.

1.3 Scope and justification

The National Water Quality Management Strategy (NWQMS) 1996 Australian Drinking Water Guidelines (supported by the State Water Quality Management Strategy (2001)) provide the overall framework for protection of drinking water quality in Australia. Together with the Western Australian water protection legislation, it provided the key direction for development of this policy.

The most significant risk to water quality from recreational activities is direct or indirect contamination with the micro-organisms contained in human and animal excreta (NHMRC, 1996). The 1996 Australian Drinking Water Guidelines (ADWG) recommend a “multiple barrier” approach to public drinking water protection. This involves a range of protection measures which form barriers to entry or transmission of contaminants, and includes:

- Developing strategies, policies and guidelines to manage land use and activities in PDWSAs;
- Protecting water sources from contamination (especially from human and animal faeces);
- Maintaining an active protection surveillance program in PDWSAs;
- Providing special protection for sensitive areas such as water reservoirs, streams and groundwater wellheads
- Registering and managing the use of manufactured products such as chemicals in PDWSAs; and
- Treating raw water as a barrier to ensure a healthy supply.

The National guidelines should be considered in the context of Western Australian conditions. Many of the PDWSAs of WA are generally accessible to the public. This means they are not “closed catchments” in which human and animal access is prohibited. Historically, some public access has been accepted in PDWSAs. However, this has been strictly controlled as many of the State’s water supplies undergo very little treatment (chlorination only). This is possible because of the current high quality of raw water obtained from the catchments. Treatment processes are very expensive and the current low level of treatment required results in a relatively cheap water supply for the community. Further reliance on treatment only would be a poor water source protection strategy and would be inconsistent with the:

- Australian Drinking Water Guidelines (1996);
- Select Committee report on Metropolitan Development and Groundwater Supplies (1994); and the
- Standing Committee on Ecologically Sustainable Development in relation to the Quality of Perth’s Water Supply recommendations (2000).

Multiple barrier protection is a preventative approach and does not rely on treatment of the water as the only measure for ensuring safe water supplies. Catchment management is the most important measure or barrier in avoiding water contamination. A recent United States Environmental Protection Agency study of several water supply schemes found the cost of removing contamination by water treatment to be 30 to 40 times that of preventing contamination in the first place.

1.4 Legislation

The Water and Rivers Commission protects water sources used for public drinking supply by proclaiming Water Reserves, Catchment Areas and Underground Water Pollution Control Areas under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act 1947*. These areas are collectively referred to as Public Drinking Water Source Areas (PDWSAs).

Recreational access to PDWSAs is governed by by-laws under the two Acts. These by-laws prohibit or restrict access to some areas, prohibit some recreational activities and require the Commission's permission to undertake certain recreational activities. Permission to undertake recreational activities may be subject to conditions.

1.5 Policy principles

1.5.1 Recreation

1. The Commission's allocation planning processes will determine the environmental values of water resources, in consultation with the community. Through these processes, Public Drinking Water Source Areas will be identified to provide for the supply of safe, good quality drinking water at reasonable cost, now and in the future.
2. Recreational activities that ensure the drinking water environmental value of public drinking water sources is protected, maintained and enhanced will be supported by the Commission where possible.
3. The Commission's position on recreational access to specific Public Drinking Water Source Areas will be set out in the Water Source Protection Plans for those areas. Determination will be made recognising:
 - the requirements of the by-laws;
 - this policy and associated guidelines;
 - the strategic importance of the public drinking water source;
 - the identified priority classification for protecting the water source;
 - potential water quality risks from existing land use within the water source area;
 - potential water quality risks from approved future land use within the water source area;
 - the rights of the owners or managers of land (including owners of neighbouring freehold land);
 - the statutory powers of government agencies covering the use and management of land;
 - the social and economic impact of historical recreational uses in the area; and
 - the impact on aboriginal and culturally significant areas.

1.5.2 Commitments of the Commission

4. The Commission (or delegated agent) will use the by-laws of the Metropolitan Water Supply Sewerage and Drainage Act 1909 and the Country Areas Water Supply Act 1947 to manage recreational activities within Public Drinking Water Source Areas.
5. The Commission (or delegated agent) will develop appropriate public information, education and compliance programs within Public Drinking Water Source Areas.
6. The Commission will work with other agencies to incorporate water quality protection measures in other relevant policies and integrate approval processes, where practical.
7. The Commission will work with other agencies, water service providers, the community and recreational interest groups to develop information on recreational opportunities and associated management.

1.5.3 Policy review

8. This policy shall be reviewed five years from the date of publication.

2 Guidelines

The following guidelines for recreation within Public Drinking Water Source Areas on Crown land are supported by further detail in Chapter 5, Guideline Framework.

2.1 Land based recreation

1. Acceptable recreational activities on Crown land within PDWSAs will be determined on the basis of the assigned Priority classification (refer to Tables 1 and 2).
2. Within surface water catchments a Reservoir Protection Zone (RPZ) may be delineated. The RPZ is generally defined as an area upstream and within 2 kilometres of the top water level of a reservoir. It includes the reservoir itself and encompasses all land contiguous with the reservoir that is within the reservoir's identified catchment area. For the majority of circumstances, the RPZ contains mostly crown land, but occasionally may also contain private land. As a policy the extent of the RPZ is set at 2 kilometres for primary storages, however, for secondary storages/pumpbacks, it can be determined at a smaller distance during the preparation of a Land Use and Water Management Strategy or a Water Source Protection Plan.
3. Within groundwater catchments, Wellhead Protection Zones may be delineated around the production bores supplying drinking water. Land uses and activities that may cause contamination, such as the storage of fuels and/or chemicals, will be constrained in these areas.
4. Vehicles will not be permitted on Crown land within Public Drinking Water Source Areas except on public roads and designated access roads. No public vehicles shall be permitted to use firebreaks or closed roads in disease risk areas, or to travel cross country without approval from the Department of Conservation and Land Management or the agency responsible for management of the land.

2.2 Water based recreation

5. Water based recreational activities will not be permitted on drinking water supply reservoirs and feeder rivers and streams unless specific permission has been obtained from the Water and Rivers Commission. Such permission will generally not be granted in undeveloped catchments where the existing land use poses minimal risk to the quality of the water source (risk avoidance approach).
6. The Commission may permit certain recreational activities in circumstances where:
 - Assessment indicates that water quality will not be compromised;
 - The quality of the water is assured by other existing protection measures;
 - Historical and traditional uses have existed; and/or
 - Conditional approval has been recommended in a water source protection plan (refer to table 2).

2.3 Proposed future water supply sources

7. Recreational activities may be permitted in proposed future water supply source areas, subject to conditions to ensure the integrity of the source for its intended future use (refer to Tables 1 and 2). Once the areas become proclaimed PDWSAs, the requirements and limitations applicable to proclaimed PDWSAs will apply.

2.4 Catchment management

8. Approval for formal recreational activities will be subject to the development of an environmental management plan prepared by the proponent to the satisfaction of the Water and Rivers Commission, with advice from the relevant land manager and the water service provider. Approval will be subject to the condition that implementation of the environmental management plan is independently audited, and the proponent's performance in meeting the commitments is reviewed and reported.
9. There will be ongoing water quality and catchment environmental monitoring associated with recreational use in Public Drinking Water Source Areas as determined by a water source protection plan.
10. Recreational activities within Public Drinking Water Source Areas requiring a permit or written endorsement will only be approved if the Commission (or delegated agent) is satisfied that there is minimal risk to water quality and an appropriate level of supervision, monitoring and management is in place.
11. Signs will be used to communicate by-laws and designate constraints and opportunities for recreation.
12. Signs related to the protection of water source areas and water bodies (particularly signs related to public exclusion zones) will be well designed, informative and promote public awareness of the need to protect water quality.

2.5 Further investigation

13. The Commission will encourage investigation into the impacts of recreational activities within Public Drinking Water Source Areas.

2.6 Compatibility of recreational activities

Tables 1 and 2 outline the Commission's position on the compatibility of specific recreational activities within Public Drinking Water Source Areas on Crown land.

Conditional recreational activities can be made compatible with the objectives of Priority 1 water source protection with appropriate management practices. All conditional activities should be referred to the Commission (or delegated agent) for assessment on a case-specific basis. Activities on a reservoir controlled by the Water Corporation will also require permission from the Corporation under the

Metropolitan Water Supply Sewerage and Drainage Act 1909 by-laws. Conditions will be based on the type of water source and the characteristics of the catchment where the activity will be undertaken. Conditions may be applied by means of one or more of the following criteria:

- An existing water quality guideline for the proposed activity that has been produced by the Water and Rivers Commission in consultation with water service providers, the relevant clubs and associations and the community;
- A permit or written approval issued by the Commission; and/or
- On a Commission-endorsed sign displayed at a designated site.

In some instances a conditional activity may not be approved if it is proposed to be undertaken in an area vulnerable to contamination or at a time of year that could result in a detrimental impact on water quality.

Incompatible activities are considered inconsistent with the protection objectives for the priority level of protection assigned to the water source area. In special instances, where the activity has been approved historically, activities may be undertaken in accordance with a permit or prior written approval. This includes recognition of recreational activities and facilities that have been established prior to the development of this policy under agreement with preceding State agencies or Governments. Activities may also be undertaken if a designated site for that purpose exists, or the activity is undertaken in accordance with conditions displayed on a sign (e.g. a managed picnic area).

All activities proposed on Crown land also require approval from the land manager. This is usually the Department of Conservation and Land Management or the Department of Land Administration.

Table 1. Compatibility of land based recreational activities

In cases where Crown land in a PDWSA is not classified for Priority 1 protection, permissible recreation will be based on meeting the objectives of the priority classification assigned for that land. Generally, land-based recreation is a conditional activity in Priority 2 and Priority 3 areas. Stricter management conditions will be placed on activities in Priority 2 areas than Priority 3 areas.

Activity	Reservoir Protection Zones	Wellhead Protection Zones	Proclaimed P1 PDWSAs	Proposed P1 PDWSAs
Vehicular Access				
Coach tours / nature based tourism (limited to public roads and designated access roads)	Incompatible	Conditional	Conditional	Conditional
Off-road driving	Incompatible	Incompatible	Incompatible	Incompatible
Pleasure / scenic driving (limited to public roads and designated access roads)	Incompatible	Conditional	Conditional	Conditional
Public Access				
Abseiling / rock climbing	Incompatible	Conditional	Conditional	Conditional
Abseiling, search and rescue training	Incompatible	Conditional	Conditional	Conditional
Amateur astronomy	Incompatible	Conditional	Conditional	Conditional
Barbecue / picnicking	Incompatible	Conditional	Conditional	Conditional
Bird watching	Incompatible	Conditional	Conditional	Conditional
Bush skills and navigation exercises	Incompatible	Conditional	Conditional	Conditional
Bushwalking / hiking	Incompatible	Conditional	Conditional	Conditional
Horse riding (except on public roads and designated trails)	Incompatible	Incompatible	Incompatible	Conditional
Military training	Incompatible	Incompatible	Conditional	Conditional
Mountain bike riding	Incompatible	Conditional	Conditional	Conditional
Orienteering	Incompatible	Conditional	Conditional	Conditional
Photography / painting	Incompatible	Conditional	Conditional	Conditional
Research / environment study	Incompatible	Conditional	Conditional	Conditional
Riding of animals (recreational, commercial) (except on public roads or designated trails)	Incompatible	Incompatible	Incompatible	Conditional
Rogaining	Incompatible	Conditional	Conditional	Conditional

Table 1 (cont)

Activity	Reservoir Protection Zones	Wellhead Protection Zones	Proclaimed P1 PDWSAs	Proposed P1 PDWSAs
Sightseeing	Incompatible	Conditional	Conditional	Conditional
Training / exercising domestic animals (including dogs)	Incompatible	Incompatible	Incompatible	Conditional
Camping / Overnight Stay				
Backpacking with overnight stay	Incompatible	Incompatible	Incompatible ♦	Conditional ♦
Camping / caravanning	Incompatible	Incompatible	Incompatible ♦	Conditional ♦
Timber Cutting or Gathering of Wood or Other Materials				
Firewood gathering	Incompatible	Conditional	Conditional	Conditional
Native flora removal	Incompatible *	Conditional *	Conditional *	Conditional *
Prospecting	Incompatible	Incompatible	Conditional	Conditional
Soil / rock / gravel removal	Incompatible	Incompatible	Conditional	Conditional
Hunting				
Recreational hunting / shooting	Incompatible	Incompatible	Incompatible	Incompatible
Introduction of game animals	Incompatible	Incompatible	Incompatible	Incompatible
Rallying and Racing				
Established, approved [#] motorsport (recreational, competition / events, includes Rally Australia)	Incompatible*	Incompatible*	Conditional*	Conditional*
New motorsport (recreational, competition / events)	Incompatible	Incompatible	Incompatible	Incompatible

❖ Commercial wildflower picking is permitted under CALM licence.

Events / competitions that have historically been approved in PDWSAs, and cannot readily be relocated (ideally these activities would occur outside RPZs and P1 areas).

* Conditional upon the development and implementation of an environmental management plan (refer to section 5.4.1)

♦ Except in designated areas

Table 2. Compatibility of water based recreational activities

Activity	Reservoir Protection Zones	Proclaimed P1 PDWSAs	Proposed P1 PDWSAs
Boating (non motorised)			
Canoeing	Incompatible	Incompatible *	Conditional
Model boating	Incompatible	Incompatible *	Conditional
Rowing	Incompatible	Incompatible *	Conditional
Sailing	Incompatible	Incompatible *	Conditional
Windsurfing	Incompatible	Incompatible *	Conditional
Boating (motorised)			
Jet skiing	Incompatible	Incompatible	Incompatible
Power boating (fuel powered)	Incompatible	Incompatible	Incompatible
Power boating (low powered electric)	Incompatible	Incompatible	Conditional
Skiing	Incompatible	Incompatible	Incompatible
Public and Animal Access			
Horse riding	Incompatible	Incompatible	Conditional
Other animal trails	Incompatible	Incompatible	Conditional
Training / exercising domestic animals	Incompatible	Incompatible	Conditional
Fishing			
Fishing	Incompatible	Incompatible *	Conditional
Marroning	Incompatible	Incompatible *	Conditional
Introduction of fish / aquatic species	Incompatible	Incompatible *	Conditional
Swimming			
Swimming / wading	Incompatible	Incompatible	Conditional
Scuba diving	Incompatible	Incompatible	Conditional

* May be allowed if activity has been approved historically and the risk to the resource is accepted following community consultation. (Generally, additional barriers to contamination and/or costly treatment would be required.) It is unlikely that recreational activities will be allowed in undeveloped catchments.

Part B Supporting Information

3 Background

In recent years, there has been an increase in pressure to pursue recreational interests in Public Drinking Water Source Areas (PDWSAs). As populations grow there is a similar increase in the demand for leisure opportunities. However, more important is the increase in the range of activities that are now available and the pressure for these activities to occur in PDWSAs (e.g. eco-tourism, recreational fishing and animal trail rides).

Uncontrolled public use and access to PDWSAs significantly increases the risk of contamination to the drinking water source. Controlled access for certain types of recreational activities within PDWSAs (such as picnic areas or designated walk trails) with appropriate management measures including rubbish disposal facilities and signs promoting public awareness of water quality issues, would reduce the potential for contamination, and can be considered to provide an acceptable level of risk.

3.1 Recreational activities in Western Australia

In 1977, a Working Group set up by the Advisory Committee for the Purity of Water prepared a report, *A Study of Catchments and Recreation in Western Australia*, to provide background information on the patterns and potential for recreation in the Darling Range catchments. Its aim was to rationalise recreation management as part of the recognised needs of the region and provide a degree of standardisation and consistency in catchment management throughout the State.

The Working Group found a wide variety of recreational activities occurred in most water supply catchments in Western Australia. However, the greatest use was from “passive recreation”. This included:

- Pleasure driving.
- Tourism.
- Picnicking.
- Nature study.

The study found some damage to the environment, particularly plants, soils and water quality, had occurred. The public were generally unaware of the risks to water quality that their actions in catchments could cause.

The report concluded that certain activities should be discouraged in some areas and recommended the provision of controls and a program of public education.

In 1980, the Australian Water Resources Council (AWRC) established a Working Group to investigate recreational use of urban water storages and catchments. The report, *Recreational Use of Urban Storages and Catchments* (1984), identified a growing demand for recreation facilities and a trend toward multi-purpose use of water storages.

The AWRC held a workshop in December 1984 where representatives from health, environment, social and recreational interests, and the water authorities established a set of Australian draft guidelines.

Following the formation of the Western Australian Water Resources Council (WAWRC), one of its first tasks was to examine the policies for recreation on water catchments and reserves. This investigation resulted in the WAWRC recommending a set of guidelines compatible with the AWRC draft guidelines. These guidelines are outlined in the report, *Recreation on Reservoirs and Catchments in Western Australia* (1985). A map was also produced that guided approval for recreation activities in the Darling Range catchments.

As recommended by the WAWRC, a working group was formed to examine the needs and opportunities for water-based recreation in Western Australia and to recommend how these needs could be met while protecting water resources and environmental values. In 1995, the working group commenced a review of the supply and demand for terrestrial water-based recreation in Western Australia (Martinick & Associates, 1995).

The review concluded:

- Western Australia's population was likely to grow within all regions, except the Upper Great Southern, and there was likely to be increased pressure for recreation;
- people involved with recreational activities in each region were likely to be older and have an extended life expectancy;
- increases in disposable income over recent years, and a generally buoyant economy, had contributed positively to all recreational activities; and
- the Perth and South West regions were exceptional in having a generally higher level of current use than other regions.

3.1.1 Perth - Bunbury region

As part of the development of *Safeguarding our Water Resources: Perth-Bunbury Draft Regional Allocation Plan* (WAWRC, 1991), recreational opportunities of the rivers and wetlands in the Perth-Bunbury region were investigated by the WAWRC and documented in *Recreational Opportunities of Rivers and Wetlands in the Perth to Bunbury Region* (WAWRC, 1987). The draft allocation plan identified 36 regionally significant water bodies for recreation within the study area. Sixteen of these are located within proclaimed or proposed PDWSAs.

3.1.2 Perth metropolitan public drinking water catchments

In 1997, the Water Corporation undertook a project with the following objective:

"...to list the recreational activities in Perth Metropolitan drinking water catchments managed by the Water Corporation which have current approval in the form of an agreement or have been approved in the past ten years by the Water Corporation or its predecessors."

The project identified a number of different types of recreational activities which have occurred in the past or are currently occurring in Perth metropolitan drinking water catchments. These range from motor sports such as car rallies and motorcycle riding through horse and llama trails to bushwalking, camping, orienteering and rogaining.

A further study was undertaken by consultants for the Water Corporation to determine:

- the frequency of different recreational activities;
- the current impact of the activities;
- whether the activities could impact on microbiological, physical and/or chemical water quality; and
- whether the activities could result in the spread of noxious weeds, soil-borne diseases, the destruction of endemic flora and fauna, the destruction of habitats, the introduction of rubbish and/or the introduction of feral animals.

This qualitative assessment identified activities with a high potential to impact on the catchment environment and water quality, including car rallies and camping. Activities identified as having a relatively low potential for impact on the catchment environment and water quality included bushwalking, formal walk trails and club-based orienteering and rogaining.

Over the years, management of PDWSAs has progressed and been refined. The pressures on PDWSAs and the need for management responses has also increased. Accordingly, a revision of recreational activities in PDWSAs is necessary to ensure consistency with the Commission's current water quality protection framework. The results of the studies mentioned above have been used in the development of policy for the recreational use of PDWSAs.

3.2 Principles of water source protection

The policy and guidelines are consistent with the principles of water source protection outlined below.

3.2.1 National water quality management strategy

A National Water Quality Management Strategy (NWQMS) has been developed jointly by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) and the Australian and New Zealand Environment and Conservation Council (ANZECC) with input from the National Health and Medical Research Council (NHMRC).

Western Australia has been an active participant in the NWQMS and has developed state principles and strategies consistent with the national framework.

The State Water Quality Management Strategy aims to balance social and economic factors and conservation of the natural environment. The following principles form the basis of the strategy:

- Adopting an integrated framework to address water quality management. Decision-making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.

- Being cautious in decision making processes. Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- Recognising global impacts or impacts beyond State boundaries. The global dimension of environmental impacts of actions and policies should be recognised and considered.
- Enhancing environmental protection through economic growth. The need to develop a strong growing and diversified economy that can enhance the capacity for environmental protection should be recognised.
- Maintaining international competitiveness on a sound environmental basis. The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.
- Adopting a mix of market and regulatory instruments. Cost effective and flexible policy instruments such as improved valuation, pricing and incentive measures should be adopted.
- Involving the community. Decisions and actions should provide for broad community involvement on issues that affect them.
- Continually improving performance. Continuous improvement and the application of best management practices to reduce the risk of degradation of water resource values and uses should be encouraged.

3.2.2 Differential protection of public drinking water source areas

The Water and Rivers Commission is responsible for managing and protecting Western Australia's water resources. The Commission defines three levels of priority classification for the protection of water resources in PDWSAs. These three levels are:

Priority 1 (P1) source protection areas are defined to ensure that there is no degradation of the water source. P1 areas are declared over land where the provision of the highest quality public drinking water is the prime environmental value. P1 areas would typically include land under Crown ownership. P1 areas are managed in accordance with the principle of **risk avoidance**. Some conditional recreation is allowed in P1 areas (refer to Table 1).

Priority 2 (P2) source protection areas are defined to ensure that there is no increased risk of pollution to the water source. P2 areas are declared over land where low intensity development (such as rural) already exists. Protection of public water supply sources is a high priority in these areas. P2 areas are managed in accordance with the principle of **risk minimisation**. Recreation is allowed under specific guidelines.

Priority 3 (P3) source protection areas are defined to manage the risk of pollution to the water source. P3 areas are declared over land where water supply sources need to co-exist with other land uses such as residential, commercial and light industrial developments. Protection of P3 areas is achieved through **risk management**, for example, by developing management guidelines for land use activities. If the water source does become contaminated, then water may need to be treated or an alternative water source found.

3.2.3 Protection of vulnerable areas

Areas close to the collection points for public water supply (e.g. reservoirs and production bores) need special protection. If a contamination incident occurs close to the water source or extraction point there may be insufficient time to respond.

To guard against acute pollution risks close to water supply infrastructure, Reservoir Protection Zones (RPZs) and Wellhead Protection Zones (WPZs) are created around reservoirs and production bores, respectively. Special provisions apply in the by-laws for control of activities within these protection zones.

3.2.4 Water source protection planning

The Commission's water source protection planning process determines priority levels of protection within PDWSAs and outlines acceptable land use activities within these areas. This policy and guidelines will guide water source protection planning in determining the appropriate level of recreation within a specific PDWSA.

3.2.5 Protection of future drinking water sources

PDWSAs may be declared over an area to protect water quality for future drinking supply. Conditions apply to recreational activities within these areas to minimise the potential long term impact on water quality.

3.3 Justification for policy

It is the Water and Rivers Commission's responsibility to protect water sources used for drinking supply, while recognising certain recreational activities need to be accommodated.

Recreational activities on water bodies and in water source areas have the potential to cause deterioration in water quality, particularly its physical and microbiological characteristics.

Physical characteristics of water likely to be affected by recreational activities are taste and turbidity. Taste problems can result from small concentrations of substances such as hydrocarbons, while turbidity is generally the result of erosion. Hydrocarbons, as carcinogens, also have the potential to impact on water quality from a health perspective.

Problems with the microbiological characteristics of water may occur through the introduction of human and animal faeces into the catchment and through direct human contact with water.

The provision of extensive water treatment does not justify allowing further contamination of drinking water supplies. The safety of drinking water depends upon effective management of all aspects of the catchment and not a single line of defence such as water treatment. This is known as the multiple barrier approach, which is recommended in the *Australian Drinking Water Guidelines* (NH&MRC/ARMCANZ, 1996).

The *1998 Sydney Water Inquiry* (McClellan, 1998) has highlighted the importance of protecting drinking water sources from contamination through effective catchment management and strong coordinated controls to protect public health.

3.4 Water quality protection legislation

3.4.1 *Metropolitan Water Supply, Sewerage and Drainage Act 1909 and Country Areas Water Supply Act 1947*

There are two State Government Acts which protect the quality of water resources within Western Australia. These are the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*. These Acts provide for special protection of drinking water resources through the proclamation of Catchment Areas, Water Reserves and Underground Water Pollution Control Areas, collectively termed Public Drinking Water Source Areas. . By-laws made under the Acts for the purpose of protecting water quality apply in proclaimed PDWSAs. The by-laws restrict the use of potentially harmful substances and control the way in which potentially contaminating activities are undertaken.

3.4.2 *Health Act 1911*

The quality of water supply is protected from pollution under the *Health Act 1911*. “Water supply” is defined under this Act to include any river, stream, watercourse, creek, swamp, water hole, well, tank, lake or reservoir containing water intended or available for human consumption.

The Department of Health, which administers the *Health Act 1911*, is responsible for specifying drinking water requirements in Western Australia. It requires drinking water to meet guidelines and to be safe. As medical and scientific knowledge is updated, the Department of Health’s requirements for safe water can change.

3.4.3 *Environmental Protection Act 1986*

The *Environmental Protection Act 1986* controls the discharge of waste to the environment, including water sources, which is likely to cause pollution. Discharge of waste may be controlled through Works Approvals or Licences.

The Act can also ensure appropriate assessment of development proposals within PDWSAs if that proposal is likely to have a significant environmental impact.

3.5 Australian Drinking Water Guidelines

The *Australian Drinking Water Guidelines* (NH&MRC/ARMCANZ, 1996) provide guidance on the microbiological, physical, chemical and radiological quality of drinking water. The protection measures and management techniques of the State’s drinking water resources are based on the criteria set by NH&MRC/ARMCANZ.

These drinking water guidelines are regularly reviewed as new information becomes available, which is likely to lead to more stringent criteria in the future.

3.6 Role of government agencies and water service providers

3.6.1 Water and Rivers Commission

The Water and Rivers Commission is responsible for protecting the State's public drinking water sources. These water sources are protected by the proclamation of areas, such as Catchment Areas, Water Reserves and Underground Water Pollution Control Areas under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*. The Commission may enforce by-laws under these Acts that exclude potentially contaminating activities. The Commission also prepares water source protection plans, in consultation with other Government agencies, industry and the public, which outline management strategies for protecting drinking water sources.

3.6.2 Office of Water Regulation

The Office of Water Regulation is responsible for regulating and licensing water service providers (for both water supply and wastewater), coordinating and advising on water services policy, and performing functions under laws relating to the provision of water services.

3.6.3 Department of Conservation and Land Management

The Department of Conservation and Land Management is responsible for management of State forest, national and conservation parks and other conservation reserves within PDWSAs under the direction of the Conservation Commission. This responsibility encompasses integrated planning and multiple use management of State forests, timber reserves and plantations within catchments in accordance with approved forest management plans and the maintenance or enhancement of nature conservation, water, recreation, landscape and other values in consultation with the Water and Rivers Commission and the Water Corporation.

3.6.4 Department of Land Administration

The Department of Land Administration is responsible for management of all unallocated Crown land and unmanaged reserves in Western Australia, which includes authorisation of recreational activities and general access.

3.6.5 Forest Products Commission

The Forest Products Commission is responsible for coordination of commercial harvesting and regeneration of native forests and government owned plantation areas.

3.6.6 Water Corporation and other water service providers

The Water Corporation and other water service providers are responsible for providing safe drinking water supply under licence by the Office of Water Regulation.

The Water and Rivers Commission has delegated implementation of certain catchment management and protection functions for specific catchments to the Water Corporation. The delegation and associated operational agreement includes by-law enforcement, catchment surveillance and transient and recreational activity approval.

These roles could also be extended to other water service providers in the future.

4 Policy Framework

4.1 Water allocation planning

The Commission plans the allocation of water resources in Western Australia by defining their environmental values. This process is described in *Statewide Policy No. 5: Environmental Water Provisions Policy for Western Australia* (WRC, 2000). The national water quality management strategy (ANZECC/ARMCANZ, 2000) identifies the following environmental values for water:

- Drinking water.
- Aquatic ecosystems.
- Primary industries (irrigation and general water uses, stock drinking water, aquaculture and human consumption of aquatic foods).
- Recreation and aesthetics.
- Industrial water.
- Cultural and spiritual values.

For water sources with the environmental value of drinking water supply, acceptable recreation will be based on a Water Source Protection Plan, if a plan is not available then the guidelines provided in table 1 and 2 will be used.

4.2 Public drinking water source protection planning

Public Drinking Water Source Areas are declared under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947* to ensure the protection of sources used for drinking water supply.

The Commission's framework for the protection of PDWSAs is consistent with the national strategy for water quality management and includes three levels of priority classification. These are Priority 1 (P1), Priority 2 (P2) and Priority 3 (P3) (refer to section 3.2.2 for details).

Water Source Protection Plans are usually developed for individual PDWSAs. A single Water Source Protection Plan may also be prepared for a number of PDWSAs that have similar land use and recreational issues (e.g. Metropolitan hills catchments). However, where water quality protection is already addressed through other planning mechanisms or strategies, specific Water Source Protection Plans may not be prepared. For example, water source protection in the Gnamptara UWPCA is addressed through the Gnamptara Land Use and Water Management Strategy, Gnamptara Park Concept Plan and Whiteman Park Development Assessment System. Recreation may also be addressed through regional planning (e.g. Southern Darling Range region).

The Commission's water source protection planning determines appropriate levels of water protection within PDWSAs (i.e. P1, P2, P3) and outlines acceptable land use activities within these areas. These plans also recommend management approaches, including programs for public information, communication, surveillance and enforcement, where appropriate. This is carried out by the Commission (or delegated agent) and provides an additional avenue to promote public awareness of the importance of water quality protection in PDWSAs. Water Source Protection Plans may also consider the provision of alternative locations for established recreational activities that may be restricted or excluded from a PDWSA.

This policy deals primarily with recreation within PDWSAs on Crown land. Generally, Crown land within PDWSAs is classified for Priority 1 water source protection, in recognition of the primacy of the drinking water environmental value in these areas. The policy position on recreation and general access in PDWSAs is consistent with the objectives of Priority 1 water source protection which is the highest level of protection. Where Crown land within PDWSAs is not classified for Priority 1 protection, allowable recreation will be based on meeting the objectives of the assigned classification. Generally, recreation in Priority 2 and Priority 3 areas is a conditional activity.

The Commission's water source protection planning seeks to protect water sources used for drinking supply, while recognising the need for provision of certain approved recreational activities. The protection planning process (through Water Source Protection Plans) will recognise this policy and recommend the appropriate level of recreation for a specific PDWSA. This will be determined, in consultation with the community, after consideration of the required level of water source protection, recreational need and historically established recreational uses of the PDWSA.

The by-laws under the *Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947* can be used by the Commission (or its delegated agent) to manage recreational activities within PDWSAs for water source protection.

4.2.1 Reservoir protection zones

Currently, a Prohibited Zone is recognised in the *Metropolitan Water Supply Sewerage and Drainage Act* by-laws 1981 to protect the immediate vicinity of public water supply dams from potential contamination. The Prohibited Zone is a two-kilometre buffer from the high water level of a reservoir. The Prohibited Zone excludes public use and access.

The Commission defines Reservoir Protection Zones (RPZ) to protect the immediate vicinity of public water supply dams from potential contamination. RPZs are not currently recognised in the public drinking water source protection by-laws. Reservoir Protection Zones will usually be defined as a two-kilometre buffer from the high water level for large reservoirs. However, the extent of, or necessity for, a Reservoir Protection Zone in catchments will be determined on a case by case basis on the recommendations of a water source protection plan. Reservoir Protection Zones will generally exclude public access and do not extend beyond the reservoir's catchment.

4.2.2 Wellhead protection zones

A Wellhead Protection Zone (WPZ) is the area within 500 metres of a production well in a Priority 1 area or within 300 metres of a production well in Priority 2 and Priority 3 areas, or as identified on the plans.

WPZs never extend beyond the boundaries of the proclaimed PDWSA and are normally not necessary for production wells abstracting groundwater from confined aquifers.

In some areas WPZs may be aligned to geological features or be based on detailed groundwater modelling.

Land uses or activities that may contaminate water within the WPZ, such as the storage of fuels or chemicals, will be constrained in these areas.

4.2.3 Protection of surface water catchments

Where catchments are predominantly State forest, stream flow is usually of such high quality that only chlorination of the water is necessary to meet water quality objectives. These catchments are considered undeveloped and require careful management to maintain high water quality for present and future users. Management must ensure human activities do not degrade water quality through turbidity and microbiological pollution to the point where very expensive treatment will be required. In general, recreational activities are not appropriate in undeveloped catchments, and it is unlikely that they will be allowed.

Disinfection of surface water by chlorination is currently the standard treatment of major raw drinking water sources in undeveloped catchments in Western Australia. Recreational activities in these catchments may result in increased risk to public health and considerable added capital and operating costs for water treatment.

Other drinking water sources, with developed or partially-developed catchments, may have stream flow where further treatment, in addition to chlorination (e.g. treatment for turbidity), is required to meet drinking water quality criteria. In these catchments, recreational activities that have been approved historically may be allowed, subject to conditions, if sufficient barriers are in place to ensure water quality objectives are met. Table 2 outlines activities that may be allowed, subject to certain conditions.

4.2.4 Protection of groundwater sources

The priority classification approach to public drinking water source protection is used for drinking water sourced from groundwater and surface water. However due to their nature, the sources are vulnerable to different contamination threats. PDWSAs defined for groundwater sources may be managed differently to those defined for surface water sources. Appropriate management of recreation within PDWSAs will be addressed through water source protection planning.

Groundwater sources are more vulnerable to contamination where the aquifer is unconfined and recharged directly by rainfall.

4.3 Implementation

Implementation of this policy will be facilitated by the Commission working closely with other State agencies (particularly the Department of Conservation and Land Management), the Water Corporation and other water service providers, the community and recreational interest groups. This will ensure a

consistent and integrated approach to recreation management in proclaimed public drinking water source areas on Crown land as well as an increased awareness of water quality protection issues.

Implementation of the policy will involve the development of brochures and activity-based information sheets for recreation that will provide guidance on drinking water quality protection issues as well as maps showing activities that are compatible with this water use.

This policy should be reviewed five years from the date of publication. The success of this policy will be assessed by:

1. ongoing water quality and catchment environmental monitoring in accordance with environmental management plans and water source protection plans;
2. the degree of integration of State agency policy, guidelines and approvals associated with recreational activities within PDWSAs. Examples include a recreation application approval process to be set up between the Commission, Department of Conservation and Land Management (CALM) and the Water Corporation, and inclusion of the Commission's recreation policy in *CALM's Policy Statement No 18 Recreation, Tourism and Visitors Service*;
3. the degree of cooperation and on-the-ground liaison between the relevant management authorities; and
4. the level of public awareness of water quality protection and recreation in PDWSAs. Consideration will be given to methods for evaluating public awareness.

5 Guideline Framework

In Western Australia, drinking water sources have been developed and land use managed to protect drinking water sources in accordance with world's best practice. This has reduced the need for expensive water treatment techniques to remove contaminants. The State's drinking water sources will continue to be managed with water quality protection as a priority.

5.1 Land based recreation

The Commission's water source protection planning establishes the appropriate Priority classification(s) for PDWSAs. PDWSAs on Crown land are generally classified for Priority 1 water source protection.

Generally, recreation in Priority 2 and Priority 3 water source areas is considered a conditional activity. Conditional activities can be compatible with the management objectives of the Priority classification with appropriate management practices. All conditional activities should be referred to the Commission (or delegated agent) for assessment on a case-specific basis. Approval from the Department of Conservation and Land Management is also required where activities are proposed on CALM-managed land.

Vehicles have the potential to cause erosion and increase the risk of turbidity. Restrictions to catchment access apply to all vehicles including trail bikes and off-road vehicles.

The presence of animals in PDWSAs, particularly surface water catchments, poses a potential risk to the microbiological quality of the water source. Animal access to PDWSAs is restricted to public roads or designated trails.

All public access is generally prohibited in the Reservoir Protection Zone. Where an activity has been approved historically, activities may be undertaken in accordance with a permit or prior written approval. This includes recognition of activities and facilities that have been established prior to the development of this policy under agreement with preceding State agencies or Governments. Conditions of approval will be determined by a water source protection plan where possible.

Land may be developed in PDWSAs for agricultural, industrial, commercial or urban uses. These land uses and associated activities pose varying risks to water quality. Recreational activities can pose similar risks to water quality. The Commission will consider recreational use of a PDWSA in conjunction with other risks posed by land use in the catchment and the existing barriers for water quality protection. This will include consideration of existing water quality and treatment processes. These issues will be considered as part of a water source protection plan.

5.2 Water based recreation

Direct contact with water sources used for drinking water purposes can pose a significant risk to water quality from microbiological contamination. This is especially the case in Western Australia, where the

majority of drinking water source areas have been managed so that chlorination is the only treatment necessary. To ensure there are the appropriate barriers for protection against microbiological contamination, the degree of public access should be determined by the condition and significance of the catchment, the existing risks to water quality and the current barriers in place to protect water quality.

It is important to maintain a high level of protection in undeveloped PDWSAs. The water from these catchments requires little treatment and relies heavily on catchment management to maintain good water quality. It is necessary to limit recreation in these catchments to preserve the value of drinking water supply. No water-based recreational activities will be allowed on drinking water supply reservoirs and feeder rivers and streams in undeveloped catchments where land use does not cause significant water quality risks.

5.3 Future water source areas

Prior to a water source being developed, recreational activities may be allowed in the area. However, approval will only be given for use of the area before development of the source. When a water source is developed, the Commission's water source protection planning will determine the appropriate ongoing level of recreation.

Recreational users will be informed that approval is based on use of the area before development of the water source. Users will be advised of the likelihood of being able to continue the activity once the source is developed. Continuation of activities will be based on the compatibility of the activity with water source protection objectives, as outlined in Tables 1 and 2.

5.4 Management of recreational activities within water source areas

5.4.1 Environmental management plans

Proponents of recreational activities will be required to prepare an environmental management plan that identifies all potential risks to water quality related to the activity and the methods of management to minimise any potential risks in accordance with the relevant Priority classification. Where the activity is proposed to take place on CALM-managed land, the environmental management plan will also address potential risks associated with land management. For ongoing events (e.g. annual), the environmental management plan will be used to audit the activity to ensure all management commitments outlined in the plan are met and to monitor any detrimental impact to water quality.

The approval of formal recreational activities within PDWSAs will be subject to an acceptable environmental management plan being prepared and implemented by the proponent.

Formal recreational activities include those activities that are organised by a recognised group or association and result in large numbers of people using the area (greater than 20 people).

5.4.2 Monitoring

Monitoring the quality of the water source and catchment should be designed to detect any deterioration in water quality as soon as possible. If water quality is compromised, and it is demonstrated that recreational activity caused or contributed to any deterioration, then it may be necessary to further constrain or exclude the activity from the area.

The requirements (including responsibility) for general water quality and catchment environmental monitoring associated with recreation will be determined by the recommendations of a water source protection plan.

The aim is to ensure impacts of recreational use of the catchment are recognised and management measures can be employed where appropriate.

Ongoing water quality and catchment environmental monitoring should also be addressed in environmental management plans for approved, formal recreational activities.

5.4.3 Supervision

Negotiations will be held with clubs, associations and would permit members to engage in approved recreation activities, provided the organisation undertook responsibility for other Government agencies to establish agreements that supervision and the provision of facilities. Similar agreements could be negotiated for “one off” events. For example, clubs wishing to hold organised activities will need to demonstrate adequate supervision of members to ensure water quality protection measures are implemented.

5.4.4 Signs and public awareness

Signs are an efficient way to communicate the by-laws of *the Metropolitan Water Supply Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*. Some recreational activities may only be undertaken in PDWSAs in accordance with conditions displayed on a sign.

The Commission (or delegated agent) will be responsible for the erection of signs that promote public awareness of the need to protect water quality while recreating in PDWSAs. Signs should incorporate the interests of all agencies involved in land management in PDWSAs (whole of Government approach) and comply with agreed standards.

Brochures and activity-based information sheets for recreation will be developed to provide guidance on drinking water quality protection issues as well as maps showing where certain activities may be undertaken.

5.5 Further investigations

The development of this policy and guidelines has identified the need for further study and investigation into the impacts of recreational activities within PDWSAs. The Commission’s policy on recreation is a risk-based approach and potential risks associated with recreational activities have not been quantified. The Commission will encourage further investigation into the impacts of recreational activities

undertaken by agencies responsible for the promotion of recreational pursuits. New information on the impacts of recreational activities should be incorporated into the policy and guidelines review.

Glossary

Aquifer	A geological formation or group of formations capable of receiving, storing and transmitting significant quantities of water.
Bore	A narrow, lined hole drilled to monitor or withdraw groundwater
Catchment area	Includes all land over, through, or under which any water flows, runs or percolates directly or indirectly into any reservoir erected or used by the Water Corporation or a body licensed by the Coordinator of Water Services to provide a water supply service in connection with any water supply, all areas declared to be a catchment area under the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> or the <i>Country Areas Water Supply Act 1947</i> and all parts of a water reserve from which water can flow into an existing storage reservoir.
Commission	Water and Rivers Commission.
Compatible	Means the activity is compatible with the management objectives of the Priority classification or water supply use.
Conditional	<p>Means the activity can be compatible with the objectives of the Priority classification with appropriate management practices. All conditional activities should be referred to the Commission (or delegated agent) for assessment on a case-specific basis. Activities on a reservoir will also require permission from the Water Corporation under the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> by-laws. Conditions will be based on the type of water source and the characteristics of the catchment where the activity will be undertaken. Conditions may be applied subject to one or more of the following criteria:</p> <ul style="list-style-type: none">• Subject to water quality guidelines. Activity based water quality protection guidelines will be produced by the Commission in consultation with water service providers, the relevant clubs, associations and the community.• May only be undertaken in accordance with a permit or written approval.• May only be undertaken at a designated site in accordance with conditions displayed on a sign. <p>In some instances, a conditional activity may not be approved if it is proposed to be undertaken in an area vulnerable to contamination or at a time of year that would result in detrimental impact on water quality.</p>
Confined aquifer	An aquifer with water confined by a stratum of low permeability such that the pressure of the water causes it to rise in a well above the base of the confining layer.
Contamination	Means degrading the quality of water to the detriment of its use as a drinking water supply, or from its pre-existing condition.
Corporation	Water Corporation.
Crown land	Refers to all land except alienated land (includes reserved and leased Crown land, land owned

or vested in Government agencies, tidal waters, reclaimed land, river beds and lakes).

Developed catchment	Means there are some risks to water quality from existing land use in the catchment. Some parts of the catchment will be designated for priority 2 or priority 3 protection.
Drinking water	Means water that is intended primarily for human consumption, but can have other domestic uses.
Environmental value	Particular values or uses of the environment that are conducive to public benefit, welfare, safety or health and that require protection from the effects of pollution, waste discharges and deposits (e.g. Public drinking water supply, industrial water, irrigation supply or ecosystem maintenance). Several environmental values may be designated for a specific waterbody.
Formal recreation	Activities that are organised by a recognised group or association and result in large numbers of people accessing the catchment (greater than 20 people).
Incompatible	The activity is incompatible with the management objectives of the Priority classification or water supply use. In special instances, where the activity has been approved historically, activities may be undertaken in accordance with a permit or prior written approval. This includes recognition of recreational activities and facilities that have been established prior to the development of this policy under agreement by preceding State agencies or Governments. Activities may also be undertaken if a designated site for that purpose exists, or the activity is undertaken in accordance with conditions displayed on a sign (e.g. A managed picnic area).
Off road driving	Driving in a vehicle other than on public roads or designated access roads (i.e. Cross country).
Permit	A permit issued under the by-laws of the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> .
Plans	Plans showing the locations of public water source areas, Priority 1, Priority 2 and Priority 3 source protection areas, wellheads and wellhead protection zones, copies of which are available for inspection at the offices of the Commission.
Pleasure / scenic driving	Driving in a licensed vehicle on public roads and designated access roads.
Public drinking water source area (PDWSA)”	Includes all underground water pollution control areas, catchment areas and water reserves constituted under the Metropolitan Water Supply Sewerage and Drainage Act and the Country Areas Water Supply Act.
Recharge	Water infiltrating to replenish an aquifer.
Recharge area	An area through which water from a groundwater catchment percolates to replenish (recharge) an aquifer.
Reservoir Protection Zone (RPZ)	(a) that part of a catchment area which lies upstream of a reservoir and is within 2 kilometres of the top water level; (b) that area adjacent to a reservoir, the extent of which is identified on plans; and (c) includes the reservoir.

Reservoir	A reservoir, dam, tank, pond or lake that forms part of any public water supply works.
Restricted	The activity may be compatible with the management objectives of the Priority classification or water supply use if the development/ land use is: <ul style="list-style-type: none"> (a) subject to limitations or conditions; (b) undertaken in accordance with a permit or written approval; or (c) undertaken in accordance with conditions displayed on a sign.
Vehicle	A vehicle propelled by any means, other than animal or human power.
Water body	A water course, lake, lagoon, swamp, marsh, conduit or other water works, the water of which contributes to the public water supply system.
Water reserve	Any area proclaimed under the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> or <i>Country Areas Water Supply Act 1947</i> to allow the protection and use of water on or under the land for public water supplies.
Water resources	Water sources, including groundwater, which are or may be used for public water supply or other environmental values and includes all waters mixing with such water.
Treatment	The application of techniques such as sedimentation, filtration and disinfection, to render water suitable for specific purposes including drinking and discharge to the environment.
Unconfined aquifer	An aquifer containing water with no upper non-porous material to limit its volume or to exert pressure.
Underground Water Pollution Control Area	Any area defined under the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> , in which restrictions are put on activities which may pollute the groundwater.
Undeveloped catchment	There are no risks to water quality from land use within the catchment. The whole catchment will be designated for priority 1 protection.
Well	See “bore”
Wellhead Protection Zone (WPZ)	(a) that area within a public drinking water source area within 500 metres of a production well in a Priority 1 source protection area or within 300 metres of a production well in a Priority 2 or Priority 3 source protection area that draws from an unconfined aquifer; or <ul style="list-style-type: none"> (b) that area that surrounds a wellhead, the extent of which is identified on the plans.
Wellhead	The location of a well or of a proposed well, identified on the plans by its name and position.
Wetland	Any surface expression of groundwater within a Public Water Source Area.

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