

INTRODUCTION

Purpose

This report is intended to provide the ACT community with information on the state of the ACT's water resources for the year 1 July 2004 to 30 June 2005.

The report is divided into three sections. Section 1 looks at the water resources in the ACT including the amount of water and its use. Section 2 discusses water quality condition including the type of indicators used for assessing water quality and biological condition. Results for lakes and rivers are given in the context of the Territory Plan and water quality standards. Section 3 outlines research and community activities taking place throughout waterways in the ACT.

Scope

The report focuses on the waterways of the ACT with the exception of Lake Burley Griffin.

Lake Burley Griffin is a Commonwealth responsibility and the condition of the lake is presented in an annual report produced by the National Capital Authority. For information relating to Lake Burley Griffin, contact the National Capital Authority on 6271 2888.

Information relating to drinking water quality of the urban water supply is the responsibility of ACTEW and the Chief Health Officer, and is not included in this report. For information relating to potable water supply, contact ActewAGL on 13 14 93.

Land Use

Land use is an important consideration for water quality because different land uses have different impacts on water quality (rates of soil erosion and sediment transport) and hydrology (impervious surfaces in urban areas increase runoff and may reduce groundwater recharge). There are four major land uses in the ACT (see Figure 1). In normal circumstances, conservation land use tends to have a minimal impact on water quality. As a result of the January 2003 bushfires, soil erosion and sediment movement now present a potential impact on the water quality of previously unimpacted water bodies. Plantation forestry and rural use can have significant impacts on water bodies where these activities result in soil erosion or the release of agricultural chemicals and animal waste. Urban use has the greatest potential for impact on water quality per unit area. Materials entering urban waterways, which are likely to impact on the health of our waterways, include fertilisers and other chemicals, organic matter, soil, oil, and sewage effluent. Urban areas are also susceptible to drought as the pollutants entering waterways are concentrated, impacting on local ecosystems.

Rivers in the ACT Region

The Murrumbidgee River is the major river flowing through the ACT and originates in the Alpine area to the south of the ACT. Tantangara Reservoir diverts its headwaters to the Tumut River and the river is further regulated downstream of the ACT at Burrinjuck Reservoir. The Molonglo River and Queanbeyan River originate to the south-east of the ACT, with both draining through Lake Burley Griffin to the Murrumbidgee River. All rivers and creeks in the ACT drain to the Murrumbidgee River (see Figure 1).

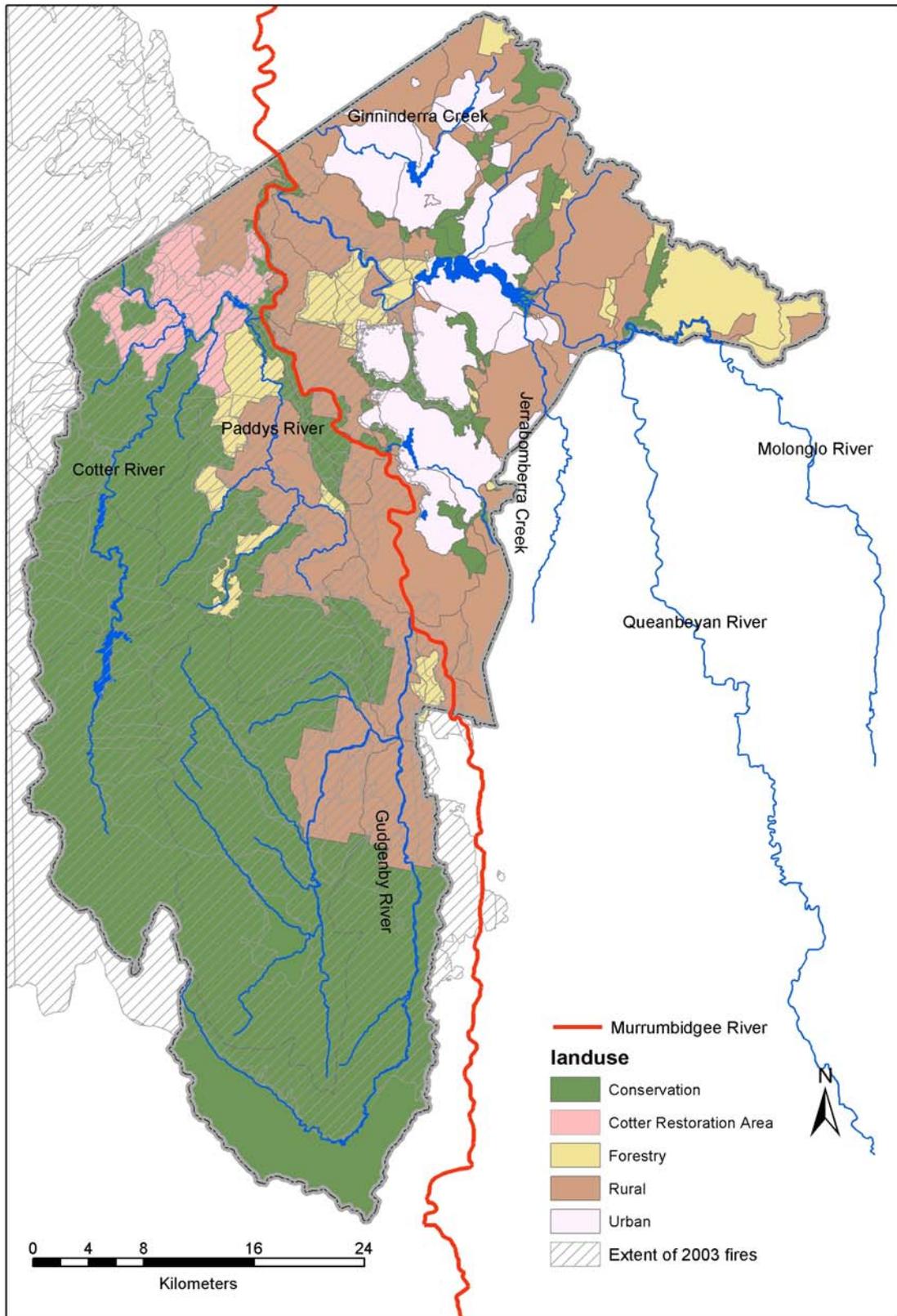


Figure 1: Land Use and Main Rivers of the ACT

Bushfires

The fires of January 2003 (see Figure 1) continue to be a major influencing factor on the condition of the ACT's waterways. The fires had a significant effect on a large proportion of the water catchments in the ACT, including the areas around our reservoirs. The Environment ACT Bushfire Recovery Plan, published in March 2003 [<http://www.environment.act.gov.au/Files/bushfirerecoveryplan.pdf>], identified key issues and potential threats relating to fire-affected vegetation, landforms and wildlife populations, including those within the water supply catchments. Monitoring and research into various ecosystem components such as riparian vegetation and sediment transport is continuing.

Protection of Water Resources

The ACT Government seeks to manage catchments and waterways so that sustainable and appropriate water conditions are attained. This includes an integrated catchment approach to planning, development controls, the licensing of end of pipe discharges and regulation of non-point source discharges through the requirements of erosion and sediment control plans. Urban stormwater management infrastructure such as gross pollutant traps, water quality control ponds, wetlands and vegetated floodways are designed and managed to reduce urban impacts on water quality, as is an increasing emphasis on improved urban design. These measures are designed to ensure that water quality is suitable for designated uses.

The Territory Plan Environmental and Use Values

Section C of the Territory Plan in 'Water Use and Catchment Policies', sets the permitted uses and protected environmental values for the waterways in the ACT. The plan identifies three types of catchments: drainage and open space; water supply; and conservation. Uses such as maintenance of ecosystems, recreation and water supply are designated for streams, lakes and rivers within each of these types of catchments. Within each catchment type there will be a designated primary value, and a range of other uses are permitted which are generally compatible with, but secondary to, the primary value. These uses establish what water quality standards will apply to a particular waterbody.

Water Quality Standards

Water quality standards are identified in Schedule 4 of the Environment Protection Regulations 1997. These regulations contain tables that list the necessary water quality to support each of the water uses referred to in the Territory Plan. Table 1 provides examples of some of the water quality standards for certain water uses.

Table 1: Water Quality Standards (Ref: Environment Protection Regulations 1997)

| Indicator | Water Use | | | | |
|-------------------------------|---|--|----------------------------|---------------------------------|--|
| | Water based recreation—swimming (REC/1) | Water based recreation—boating (REC/2) | Water supply—stock (STOCK) | Water supply—irrigation (IRRIG) | Aquatic habitat—wetland (AQUA/1 to AQUA/6) |
| Total Phosphorus (mg/L) | < 0.1 | < 0.1 | | | < 0.1 |
| Turbidity (NTU) | Not objectionable | Not objectionable | | | <10 – <30 |
| Suspended Solids (mg/L) | | | | | <12.5 – <25 |
| Chlorophyll 'a' (µg/L) | < 10 | < 10 | < 10 | | <2 – <10 |
| faecal coliforms (cfu/100mL) | ≤ 150 | ≤ 1000 | ≤ 1000 | ≤ 1000 | |
| Dissolved Oxygen (mg/L) | | | | | >4 |
| Acidity (pH) | 6.5–8.5 | 6.5–8.5 | 6.5–9.2 | 4.5–9.0 | 6–9 |
| Total Dissolved Solids (mg/L) | | | < 3000 | < 500 | |