

State of Rivers Report for the Montagu River Catchment

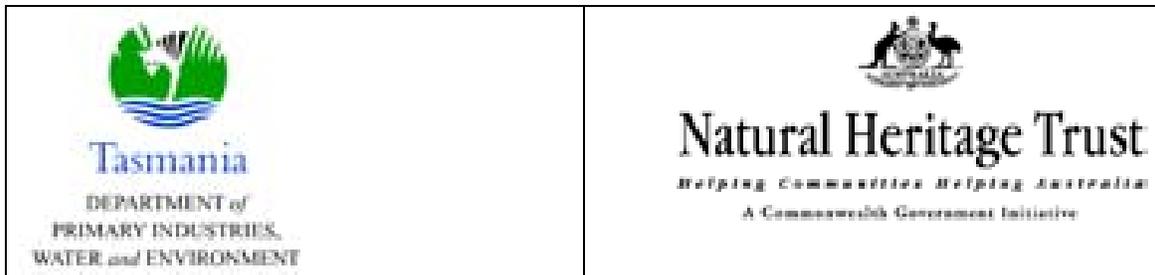


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The Department of Primary Industries, Water and Environment

The Department of Primary Industries, Water and Environment provides leadership in the sustainable management and development of Tasmania's resources. The Mission of the Department is to advance Tasmania's prosperity through the sustainable development of our natural resources and the conservation of our natural and cultural heritage for the future.

The Water Resources Division provides a focus for water management and water development in Tasmania through a diverse range of functions including the design of policy and regulatory frameworks to ensure sustainable use of the surface water and groundwater resources; monitoring, assessment and reporting on the condition of the State's freshwater resources; facilitation of infrastructure development projects to ensure the efficient and sustainable supply of water; and implementation of the *Water Management Act 1999*, related legislation and the State Water Development Plan.

List of Contents

This document contains the results of a series of co-ordinated studies by the Department of Primary Industries, Water and Environment (DPIWE) which were conducted in the catchment of the Montagu River between 1999 and 2001. These studies, which are detailed below, form the basis of the 'State of Rivers' report for rivers in the Montagu catchment.

Executive Summary

Provides a brief overview of the catchment, a summary of the major activities and water uses within the catchment and a brief and integrated summary of the major findings from the various study components. This document also makes some comment on issues for management and any future work that may be required to enhance knowledge about particular problems that were raised by these studies. For more detailed summaries of findings related to particular study components, see individual study reports (listed below).

Water Quality in the Montagu River Catchment

Parts 1 – 4

(57 pages)

Hydrological Analysis of the Montagu River Catchment

(10 pages)

Aquatic Ecology of the Montagu River Catchment

(37 pages)

Index of River Condition for the Montagu River Catchment

(39 pages)

Executive Summary

Located in north-west Tasmania, the Montagu River catchment has a long history of drainage improvement practices aimed at increasing access to what was originally swamp land for the purpose of dairy farming. As a result, large sections of the Montagu River and its tributaries have been highly modified or straightened to decrease the period of time that floodwaters inundate surrounding land. The river provides water for the rural community, for domestic, stock and other agricultural uses and is also a significant resource for recreational activities such as fishing and canoeing. In addition, the river is a resource that supports oyster farming in Robbins Passage and catchment activities impacting on water quality can pose a significant risk to oyster leases during periods of flooding.

This project was carried out by the Department of Primary Industry, Water and Environment in partnership with the Circular Head Council as part of the 'State of River' reporting program. The studies were undertaken from 1999 to 2002 with the aim of providing current data to support the development and implementation of catchment management plans and to improve water resource management. This work was supported by the Natural Heritage Trust.

While a number of different issues have been identified, the main finding from the study was that extensive drainage activities and intensive agriculture in the middle of the catchment has significantly altered instream and streamside habitat, and this has impacted on aquatic macroinvertebrate communities and resulted in poor water quality. Habitat modification in this part of the catchment was mainly expressed as reduced substrate heterogeneity, elevated erosion and a lack of woody debris brought about by the removal of streamside vegetation and channelisation of the river and smaller tributaries. The removal of riparian vegetation in this part of the catchment, along with the very shallow nature of the Montagu River, has also led to prolific growth of aquatic plants and algae. During the summer months this explosion of aquatic plant growth, which is encouraged by the high concentrations of nutrients within the river system, has resulted in large daily changes in dissolved oxygen and water temperature.

Monitoring of nutrients has shown that tributaries draining the Brittons Swamp and Togari districts (in particular Fixters Creek) contain very high concentrations of both nitrogen and phosphorus, and this appears to be the main cause of nutrient enrichment within the middle and lower stretches of the Montagu River. Nutrient load estimates for this catchment were the highest of any Tasmanian river system so far investigated under the 'State of Rivers' program, with 3-year average annual export of 81,000 kg P and 268,100 kg N. Additional investigations of nutrient loss from the 'hump and hollow' drainage that has been developed in the Togari area suggests that runoff from this area may contribute as much as 70% to the total load of phosphorus leaving the Montagu catchment in any year.

Despite the level of instream and water quality alteration that has occurred in the middle of the catchment, river condition and riverine health is much improved in the Montagu River as it flows through forested land between 14 Mile Plain and Stuarts Road. The AusRivAS 'river health' score in this reach of the river was similar to that recorded at the top of the catchment at Roger River, and it was noted that at both of these sites there was diverse instream habitat and only limited silt accumulation. The presence of extensive and healthy riparian vegetation communities are also likely to have contributed to these good river health scores.

In general, the results from this study show that the Montagu River is in average to poor condition, and this is largely due to the extensive drainage activities and intensive agricultural development that occurs in the middle of the catchment and parts of the upper catchment. Of particular note is Fixters Creek, which contains very high concentrations of nutrients and is highly turbid. The continued management of the drainage system for flood control will severely limit the potential for future improvement of aquatic health in this river system. To improve riverine health, actions to reduce sediment and nutrient input and increase the diversity of instream habitat will be required. Steps towards re-establishing riparian vegetation along reaches of the river system where there is none will also help to improve river condition and riverine health.