

## Catchment Management

### Background

Drinking water catchments surrounding the Perth metropolitan area have traditionally supplied high quality drinking water at low cost to the community. Most of these catchments are forested but have been modified by logging, mining and farming.

Less than 50 years ago the water grid that supplies Perth, Mandurah, Kalgoorlie and the northern wheatbelt sourced water entirely from these forested catchments. However, the impact of past use together with climate change has resulted in these surface catchments now providing only about one-quarter of water to the grid.

Managing forests helps to protect water quality and may increase the streamflows to dams from rainfall.

#### *About forest management*

Forest management includes various techniques to improve the state of the forest and conserve the environment. Catchment thinning is one such technique that has been used in the past to improve the environment and increase streamflows.

Thinning the regrowth forest tends to move the forest back towards its previous natural state.



Catchment thinning is best applied to regrowth forests where the tree density is much greater than pre-European or mature old growth forests. Regrowth forests use more water - much like an overcrowded garden.

Without catchment management, regrowth forests result in less water being available to the environment and reduced flows into streams and drinking water dams.

#### *Response*

In 2002 the need for a better understanding of the interaction between water, land and biodiversity in our forested catchments was identified to enable informed decisions on their future management.

To address this need, the Water Corporation prepared a proposal to undertake research on this issue in the Wungong Drinking Water Catchment close to Perth as a trial.

The proposal was submitted after collaboration with relevant stakeholders and extensive community consultation. The Wungong Catchment Trial was assessed by the Environmental Protection Authority under Section 16(e) of the *Environmental Protection Act* 1986 and launched by the Minister for Water Resources in April 2005.

## Current Situation

### *Wungong Catchment Trial*

The Wungong catchment is a drinking water catchment 60 kilometres south-east of Perth. The catchment has been previously logged and mined for bauxite. It lies in a high rainfall zone and is considered a degraded regrowth forest consisting of mainly jarrah and marri trees. The trial aims to increase streamflows through the staged conversion of overcrowded forests to resemble a more natural state.

The Water Corporation has partnered with environmental agencies, universities and research institutions to implement an extensive research and monitoring program. The 12-year trial will be assessed regularly to incorporate adaptive management responses.

The project involves extensive interagency cooperation to gain best practice knowledge of the Wungong Catchment. A Memorandum of Understanding guides the working arrangements between the Water Corporation (as the project proponent) and the Department of Environment and Conservation (responsible for the management of the land as State forest and timber reserve).

Strategies for the sustainable management of the jarrah forest are contained in the Conservation Commission's *Forest Management Plan 2004-2013*.

The Water Corporation is operating strictly in accordance with interim silvicultural guidelines that have been developed. They address a range of issues including:

- tree-marking;
- regrowth and coppice control;
- management of dieback;
- herbicide use ; and
- prescribed burning.

The project has key performance indicators that target improvements for water, land and biodiversity.

The trial is being closely monitored. The future of the trial will be impacted by the results of research and community expectations. A first review of the trial is due for completion in 2008.

## The Future

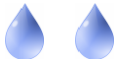
### *Options in the future*

Currently the trial is restricted to the Wungong catchment. Subject to the results of the trial together with regulatory and community responses, it could be extended to other forested catchments.

**Sustainability considerations**

<b>Economic</b>	<b>Social and cultural</b>	<b>Environmental</b>
Low cost source option.	Loss of visual amenity of heavily forested catchments.	Requires research to fully understand the impact on plants and animals.
Trial is funding a research base that could be extended to other water catchments.	Needs to consider compatibility with other forest values including recreational activity.	Increasing streamflows have the potential to increase aquatic biodiversity.
Impact on commercial timber harvesting needs to be managed.	Some management practices include the use of herbicides and fire regimes.	Needs to be compatible with the range of forest values including retention of biodiversity.

*Potential source yield*



The current trial in the Wungong Catchment is expected to improve streamflows by about 5 gigalitres a year – enough to supply water to 20,000 homes.



An extension to include other forested catchments requires the trial to be much further advanced and would be subject to numerous approvals, including community acceptance.

Subject to these vital considerations, similar forest management applied to other metropolitan catchments in the high rainfall zone may increase yield by 40 gigalitres of water per year – enough to supply 160,000 homes.

*Potential Cost*

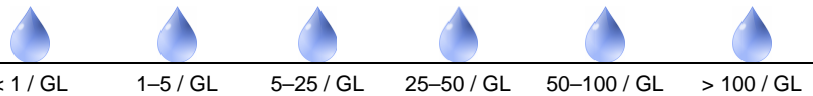


The cost of the recommended option is estimated to be less than \$1 per kilolitre.

**More Information**

- Wungong Catchment Trail [http://www.watercorporation.com.au/w/wungong\\_index.cfm](http://www.watercorporation.com.au/w/wungong_index.cfm)

**Key**



*Potential source yield (in 50 year planning horizon)*



*Potential cost (2007 \$)*

Information current as at March 2008 - ISBN: 1740433971

Information current as at March 2008 - printed on paper from plantation grown timber with environmentally safe vegetable inks