

Hawkesbury-Nepean Environmental Flows and Weirs Project

The NSW Government is undertaking works along the Nepean River to improve the long term water quality and ecology of the river. During construction, there will be no impacts on water available for irrigation although at some weirs there may be temporary access restrictions to the areas surrounding the weirs. All river users will benefit from the improved water quality.

Improving the health of the Hawkesbury-Nepean River

Healthy rivers and catchments are important for the ecosystems, communities and economies that rely on them. Dams and weirs affect the natural flow of water in rivers, affect water quality, restrict the migration of fish through the river and limit their habitat.

An environmental flow is water released from a dam or weir for the health of the river downstream. Environmental flows mimic natural conditions as closely as possible and are important to improve water quality, fish passage and habitat conditions for native flora and fauna. They help native fish to breed, reduce the growth of weeds and improve the quality of water.

The NSW Government has recognised the need to improve environmental flows and make better provision for fish passage in the Nepean River. The *NSW Metropolitan Water Plan 2006* commits to releasing a new and variable environmental flow from the water supply dams and weirs in the Upper Nepean River.

The improved environmental flows from all the dams on the Upper Nepean River will commence from the beginning of 2010.

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The new environmental flows need to be able to travel from the dams and past the weirs, including when they are not spilling over their crest. Therefore modifications to the dams and weirs are required to ensure the new environmental flows can make it all the way downstream.

The modifications will allow for the release of the new environmental flows, and also improve fish passage. The works are due for completion by the end of 2009.

These modifications include work at:

- Avon, Cataract, Cordeaux and Nepean dams
- Broughtons Pass and Pheasants Nest water supply weirs
- Most weirs on the Nepean River.

Works to allow for the environmental flows

New environmental release outlets are being installed on the dams, water supply weirs and most of the other weirs on the Nepean River. These outlets allow for variable environmental releases to be made each day. Monitoring equipment will also be installed to measure and control releases remotely.

A new environmental release outlet has been installed on Avon dam, and environmental releases started from Avon dam in March 2008. Work has commenced on the other dams and supply weirs.

Work will commence on the weirs on the Nepean River in June 2009. No work is required on four of the weirs as they are not expected to restrict the new environmental flows.

Works to improve fish passage

A number of different fishways have been built at the weirs on the Nepean River over the last 100 years. However they do not cater for the broad range of local fish species and do not operate over a wide range of flows. In particular, it is difficult for smaller native fish to use the existing fishways.

Investigations have identified that a fishway model known as a vertical-slot fishway is the most suitable for the weirs on the Nepean River. Where required, this new vertical slot fishway will be installed.



The new model incorporates considerations such as slope, entrance design and distance between slots to ensure a diverse range of fish species can use it. It aims to increase fish passage for smaller, native fish to aid their migration along the river and increase their populations.

Summary of works at the weirs on the Nepean River

The following works have been commissioned:

| Weirs | Works |
|---|---|
| Camden, Sharpes, Cobbitty, Theresa Park, Mount Hunter | Install environmental release outlet Replace existing fishway with a new vertical-slot fishway |
| Menangle, Brownlow Hill, Wallacia | Install environmental release outlet Install new vertical-slot fishway |
| Penrith | Replace existing fishway with a new vertical-slot fishway |
| Douglas Park | Install new vertical-slot fishway |

The NSW Department of Water and Energy, in consultation with the various weir owners, has identified the best options to allow for the environmental flows and improve fish passage. The Sydney Catchment Authority commissioned the design and assessment of the new works, and will project manage their construction.

It is estimated that works at each of these weirs will take approximately four to seven months. For further information and/or to keep updated about these works, please visit www.sca.nsw.gov.au/nepeanriver or contact nepeanriver@sca.nsw.gov.au