

Process

To determine the benefits and feasibility of a downstream flow a number of actions were undertaken:

- Hydrological modelling was conducted by Entura at four locations along the river;
- Stakeholders were consulted to determine the social benefits of a downstream flow;
- Environmental benefits of a downstream flow were assessed using a number of methods:
 - Key stakeholder groups were asked for environmental information;
 - Historical water quality and biological data was reviewed; and
 - The Conservation of Freshwater Ecosystem Values database and the Natural Values Atlas database were interrogated.
- The operational and economic feasibility of a flow release was investigated.

Due to the findings determined through addressing the first objective the remaining two objectives were not pursued.

Outcomes

The outcomes from the study revealed that:

- The Wilmot River is a highly regulated river near the dam but the flow regime is not quite as modified further downstream due to catchment inflows;
- Stakeholder consultation did raise concerns around low or complete lack of flows during the summer months, but was limited to four responses. The main issues raised by stakeholders were algal growth in the water, impacts on recreation such as swimming, fishing and canoeing, and the impacts to aesthetics and aquatic health;
- The main area of poor water quality and poor macroinvertebrate health was at the Wilmot River site downstream of the Wilmot Dam which was found to be significantly impaired for both macroinvertebrate biodiversity and community composition. This site also has intermittently elevated metal concentrations. However, conditions improved downstream;



The Wilmot River downstream of Alma Bridge.

- There was limited environmental information, however, interrogation of the Natural Values Atlas database revealed the presence of the threatened giant freshwater crayfish *Astacopsis gouldi* in the Wilmot River. Research into the crayfish suggested that unnatural variations in temperature, associated with cold water releases in summer, may affect its reproductive cycle and impact on breeding success;
- To facilitate a downstream flow the riparian valve would need replacing to ensure it would be operational in the long-term. Access to the valve would raise some safety concerns for operators when opening and closing it. A walkway would also need to be installed to allow access. The value of water released and loss to hydropower generation was also estimated. The value of Lake Gairdner water is considered high as the water passes through four power stations before reaching the ocean; and
- A technical report has been written detailing the study.

Conclusion

In assessing the benefits of a flow release from the Wilmot Dam, there was little response from the community to the stakeholder survey. While there may be some environmental benefits in releasing water from the Wilmot Dam, such as an improvement in water quality and macroinvertebrate health just below the dam and a potential reduction in filamentous algae through dilution of nutrients, there is uncertainty of how a

flow release might impact the threatened giant crayfish. With limited environmental or social benefit, and costs associated with operational requirements and the loss in electricity generation, it is concluded that a downstream flow in the Wilmot River will not be pursued.

For More Information

The technical report for this study is available at

www.hydro.com.au/MFWMR-studies.

To see all the Mersey-Forth Water Management Review technical and social studies go to www.hydro.com.au/MFWMR-studies.

Find out more about the Mersey-Forth Water Management Review at www.hydro.com.au/MFWMR.

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