

# Water Management Review

May 2007 **Derwent Catchment**



## Migrating fish get a helping hand from “Big Brother”

Some species of native fish, including eels, lampreys and galaxiids need to migrate annually to breed. The construction of the Derwent hydro scheme, particularly Meadowbank dam, has meant that migration is almost impossible without assistance. Hydro Tasmania has been working in conjunction with the Inland Fisheries Service (IFS) to provide this assistance and help maintain native fish migration into the Derwent River catchment.

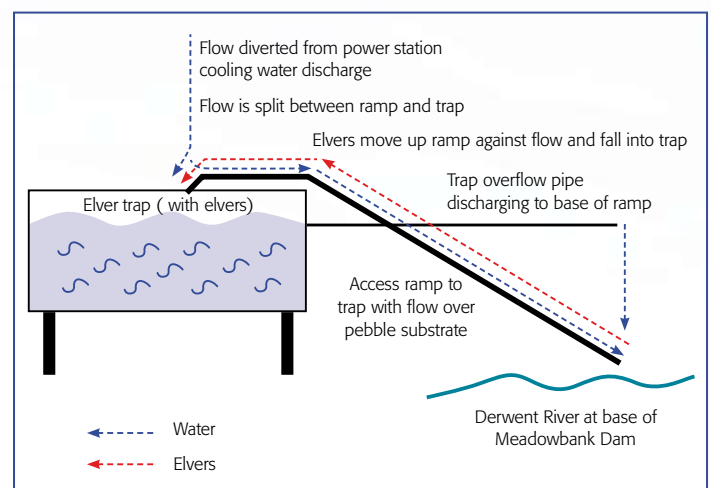
The IFS have operated a fish trap targeting juvenile eels (elvers) at the base of Meadowbank dam for a number of years. The program has been primarily aimed at capturing elvers for restocking various eel fisheries around the state, however it also ensures that these native species are maintained in the areas where they occurred prior to hydro-electric development. Hydro Tasmania has been supporting the restocking program to improve the ecological sustainability in catchments affected by hydro power schemes.

Recent work by Hydro Tasmania and the IFS has resulted in the operation of the trap being expanded to target other native species. Lampreys are now also being collected and translocated, and as this species has no commercial value, the gains are entirely environmental.

Also, Hydro Tasmania has developed electronic remote monitoring equipment that reduces the need for manual checking of the fish trap. There are two benefits to this. IFS officers are now able to monitor the water quality and determine when the trap is full from their offices in New Norfolk. It also means reduced fish stress and the potential for higher trap yields. The overall result will be a more efficient program, with a greater number of fish being relocated upstream of migration barriers.



Access ramp to fish trap. The rock lining helps the elvers climb to the trap



A diagram showing how the IFS fish trap at the base of Meadowbank Dam operates

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## Wetlands for wildlife in Waddamana Canal

Hydro Tasmania has recently created a wetland environment in the disused Waddamana Two canal, in Tasmania's Central Highlands. The wetlands provide habitat for native wildlife and reduce the amount of sediment flowing into Penstock Lagoon.

The Waddamana canals one and two are a legacy of the Waddamana PowerScheme that was decommissioned in the mid 1960s. The canals continue to collect water from the surrounding catchment and feed it into Penstock Lagoon. Concerns about sediment flowing into Penstock Lagoon from Waddamana Two canal prompted Hydro Tasmania to consider how this issue could be addressed.

The sediment movement was mainly caused by the canal bed drying out and the surface flaking off in summer, or the soil being lifted by needle ice in winter. Following rainfall, the loosened sediment would then be flushed out of the canal and into the lagoon. Investigating the issue, Hydro Tasmania Water Operations Manager, Greg Carson, suggested that a low-impact structure was needed to hold water in the canal to reduce the drying and flushing of sediments and to allow water to 'insulate' the bed in winter. The structure would encourage the capture of silt and the permanent shallow water could then be colonised by wetland plants which would create habitat for fish, waterbirds and macroinvertebrates.

Hydro Tasmania Engineering Associate, Norm Cribbin, identified appropriate locations for two structures across Waddamana Two canal. Following an environmental impact assessment, Mr Cribbin oversaw the installation of the bunds, which are formed by wooden beams held in place by metal brackets and can be easily removed if required. The bunds back the water up to an estimated distance of 900 metres behind the upper bund and 350 metres behind the lower bund, creating an environment for the establishment of wetlands.

Anita Wild, a botanist with Hydro Tasmania Consulting, said seed from the local area, including Penstock Lagoon, was sown in November last year. Local seed was used to encourage the establishment of vegetation representative of the surrounding region.

Five months on, monitoring has shown a positive result. Ms Wild said that the growth of native plants from the seeding has been very successful and there is also recruitment of naturally occurring plants. Sediment appears to be settling throughout the newly established wetland vegetation and turbidity in the canal is markedly lower.

The local wildlife has given the wetlands the tick of approval, and native waterbirds are already using it as feeding and breeding habitat. Hydro Tasmania will continue to monitor the wetland and its effectiveness in preventing further sediment flowing into Penstock Lagoon.



*Waddamana Two Canal prior to installing the bunds (9 October 2006)*



*Vegetation growth and waterbird nest in Waddamana Two canal five months after installation of the bunds (13 March 2007)*

## Low lake levels: environmental and social risk management

Severe and protracted drought conditions are forcing Hydro Tasmania to make unprecedented operational decisions in order to meet electricity demand. To manage the implications of such decisions, Hydro Tasmania has set social and environmental risk bands for some priority lakes including Great Lake, and lakes Echo, Burbury, King William, Mackintosh and Rowallan.

The risk bands are water level ranges defined by the likelihood and severity of environmental and social impacts occurring. Impacts could include recreational access restrictions, shoreline erosion, deterioration in water quality, loss of habitat, risk to threatened species and operational issues.

The risk bands have been written into storage operating rules and approval from senior management must be given before lakes can be drawn down into a risk band.

As a lake approaches the medium risk band a monitoring program is implemented, which focuses on the key environmental and social risk factors for that lake. To date this has happened for Great Lake and Lakes Echo and King William. The information gleaned from the monitoring programs helps managers decide on actions that could minimise environmental and social impacts.

Key stakeholders, including the Inland Fisheries Service and Marine and Safety Tasmania, are kept informed when lakes enter the medium and high level risk bands through regular communications on lake status. The public is also alerted to risks associated with the various recreational activities on the lakes.



Boat ramp at low lake level, Lake King William (14 March 2007)



Low levels at Lake Echo (8 March 2007)

## Website puts information on a new level

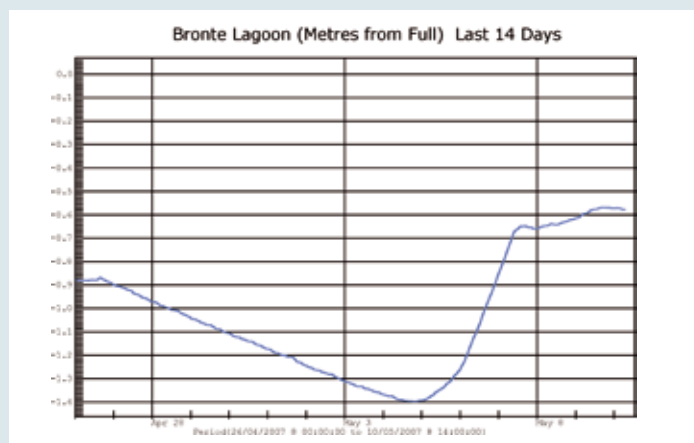
For many years Hydro Tasmania has provided lake level information on its website to support fishermen, farmers and recreational interest groups in their activities. Some recent additional functionality has improved water level information on the website.

Web users have been able to access lake level information with an indication of whether lake levels are falling or rising. Hydro Tasmania's website now includes lake level graphs for eight lakes showing levels for the previous 14 days. The graphs are updated hourly and can be accessed via a hyperlink from the Tourism and Recreation information page.

The new graphs are provided for Lake Augusta, Penstock Lagoon, Bradys Lake, Bronte Lagoon, Pine Tier, Little Pine Lagoon, Laughing Jack Lagoon and Lake St Clair. Soon users will also be able to access graphs showing river levels for the Derwent River above Nive River, Derwent River at Meadowbank and Mersey River at Liena.

See the lake levels on this site:

<http://www.hydro.com.au/Home/Tourism%20and%20Recreation/>



Example of a lake level graph now available via the Hydro Tasmania website



*Hessian and jute rolls in place over an erosion-affected area at Narcissus*

## Rehabilitation rolls on at Lake St Clair

The January 2007 newsletter reported that trial rehabilitation work would be undertaken at Lake St Clair in March. We can now report that all went according to plan. The erosion control work at Narcissus River, was undertaken by a team of seven volunteers including Hydro Tasmania and Parks and Wildlife staff. The work complements previous work done by the Parks and Wildlife Service in a bid to rehabilitate areas eroded by high water levels.

Fifty rolls were constructed from hessian and jute, seeded with local species of colonising plants and pinned to the ground over the eroded areas. The rolls are placed at right angles to the overland flow and will slow water movement and trap seeds and debris, encouraging the growth of vegetation. We look forward to seeing the results of these efforts. Congratulations to all concerned.



*Parks and Wildlife Service and Hydro Tasmania volunteers constructing hessian and jute rolls at Lake St Clair*

## Contact Us

If you have questions or any feedback relating to the Derwent Water Management Review program we are keen to hear from you. Please contact Communications Co-ordinator Helga Grant or the DWMR Project Manager Alison Howman.

We are keeping our mailing list updated so if you'd like someone added to it, if your details have changed, or if you'd like your name removed, please let us know.

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