

Water Management Review

South Esk – Great Lake Catchment



Key Issues

- Flooding
- Irrigation supply

Related WMR Technical Studies

- Downstream Poatina Assessment

Contact Details

For further information please contact

Hydro Tasmania
Environmental Services

Telephone:
03 6230 5899

Facsimile:
03 6230 5933

Email:
environment@hydro.com.au

Mailing address:
GPO Box 355
Hobart Tasmania 7001



Technical Study – Upper Brumbys and Westons Weirs Assessment

The South Esk – Great Lake Water Management Review

The Upper Brumbys and Westons Weirs Assessment is part of Hydro Tasmania's South Esk – Great Lake Water Management Review (SEGL WMR). The WMR program examines Hydro Tasmania's water management practices in each of its catchments. This assessment is one of 12 studies in the SEGL catchment. The studies were carried out following extensive identification of aquatic environment and water management issues, involving consultation with stakeholders throughout the catchment. The issues identified are documented in two reports: *Environmental Review: Great Lake – South Esk Catchment* and *Community Consultation Report: Great Lake – South Esk Water Management Review*. The outcomes from the technical studies will ultimately be incorporated into an Aquatic Environment Management Program for Hydro Tasmania.

Issues Investigated

The issues identified during the consultation phase of the SEGL WMR were stakeholder concerns regarding low summer flows (relating to irrigation supply) in Westons Rivulet, and winter flooding in upper Brumbys Creek and Westons Rivulet downstream of the diversion weirs.

Background

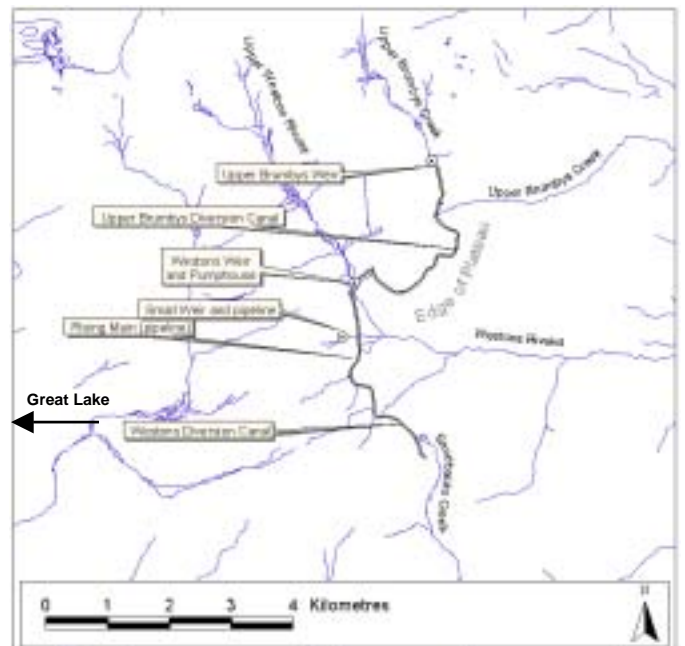
The Brumbys and Westons Diversions divert water from upper Brumbys Creek and Westons Rivulet into Great Lake. This water is then used to generate electricity at Poatina power station. The diversion is located on the Great Western Tiers at the north-eastern edge of the Central Plateau.

Agriculture, primarily sheep grazing and cropping, is the main land use downstream of the diversions. Water is extracted from these streams for irrigation, stock and domestic use.

The infrastructure for the diversion comprises two small weirs, two small canals and a pumping station (see insert).

Flooding of these streams from intense rainfall events causes problems for local landowners.

In recent years it has been observed that Westons Rivulet has dried up in the lower reaches over the summer months, leaving no water for irrigation in these reaches.



Technical Studies

Aims

The aims of this study were to review Hydro Tasmania's influence on low summer flows (relating to irrigation supply) in Westons Rivulet, and winter flooding in upper Brumbys Creek and Westons Rivulet downstream of the weirs.

Assessment of Issues

Review of operation of the diversion weirs showed that during the summer the gates are left open to maintain summertime flows in the waterways downstream so that water can be accessed by other users. The main focus of the study was to investigate any possible influence the diversion weirs may have on winter flows in both these rivers. Hydrological modelling was therefore carried out to understand the relationship between rainfall and stream flow in the catchment. This modelling did not produce clear results, however consultation with stakeholders and an assessment of Hydro Tasmania's operation of the diversion helped to clarify the issues and assess Hydro Tasmania's influence over streamflows.

According to local landowners, Westons Rivulet has historically flowed year-round, until the summer of 2000-01 when it dried up completely for the first time in living memory. It is clear that this lack of flow in the rivulet is due to increased irrigation abstraction, as Hydro Tasmania does not utilise the diversion weirs during the summer months.

Flooding in Westons Rivulet and Brumbys Creek is a natural phenomenon. Although Hydro Tasmania diverts water out of both these streams during the winter, they continue to flood, as neither weir is large enough to impound a sufficient volume of water to prevent flooding. In addition, the local catchments of the streams below the weirs often yield sufficiently large volumes of water to produce flooding downstream.

Hydro Tasmania recognises that reliable pumping during periods following rainfall will ensure that the maximum amount of water is diverted into Great Lake. During this assessment, it was highlighted that the reliability of the pump has been unsatisfactory in the past. However, an upgrade program was undertaken during June and July 2001 to improve the pump's performance and reliability.

Outcomes

In relating to low streamflow in lower Westons Rivulet during the summer months, both local landowners and Hydro Tasmania consider that summer water shortages are primarily the result of illegal abstractions from the rivulet.

In terms of winter flooding in both the Brumbys and Westons sub-catchments, the diversion weirs constructed and maintained by Hydro Tasmania have minimal impact on flood levels downstream. As long as pump capabilities and reliability are maintained flood levels downstream will be lower than what would occur naturally. Hydro Tasmania commits to ensure reliability of the pumps at Westons Weir through a scheduled program of maintenance, and will review its procedures accordingly.