

# Flows through the South Esk

## Environmental flows, Trevallyn Dam, and urban water use

### HISTORICAL FLOWS

The Tamar estuary and Esk rivers catchment is the largest catchment in Tasmania, covering over 15 percent of the state! Within the broader catchment, the South Esk River catchment is the largest – the top of which starts near the east coast of Tasmania. The South Esk River travels west across Tasmania, past Fingal and Avoca, where it turns north to flow through Longford and into Lake Trevallyn. Along the way, water from the Macquarie River, Meander River, and Brumby's Lake catchment also flow into the South Esk River as it travels approximately 250 km on its way to the kanamaluka / Tamar estuary.

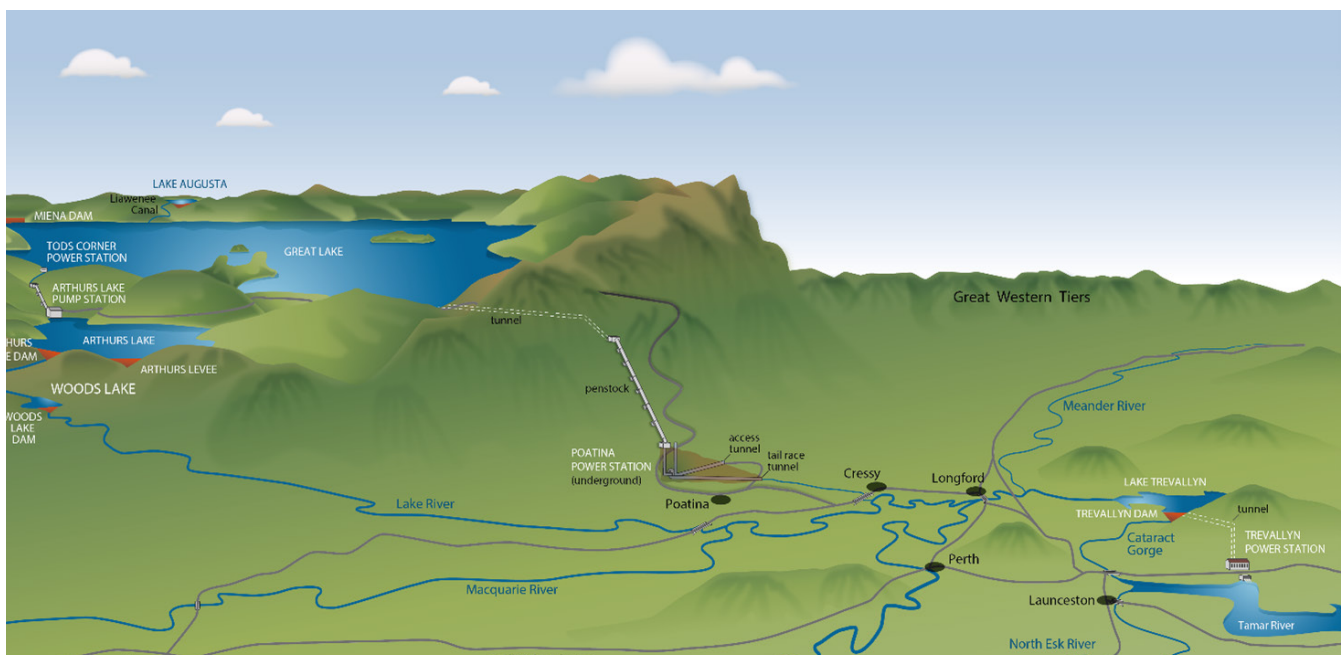
Historically, all the water within the South Esk River would eventually flow through Cataract Gorge and into the upper kanamaluka / Tamar estuary; these flows are now used to generate power and provide drinking water to Launceston and the surrounding areas.

### GENERATING POWER

Commissioned in 1955, Trevallyn Power Station uses most of the flow through the South Esk River to generate power. The flows from Lake Augusta and Great Lake, located in the Derwent catchment, are now diverted to the South Esk River via Poatina Power Station. This means that Lake Trevallyn receives more water than it would under normal flow regimes.

Lake Trevallyn holds 8,520 megalitres of water. If the power station was run at maximum capacity, with no inflow from upstream, the reservoir could be emptied in 24 hours.

Trevallyn Power Station generates on average 400 GWh annually, which is four per cent of the state's energy demand and could power all the houses in Launceston all year, plus some.



Above: schematic representation of flows through Poatina Power Station and Trevallyn Power Station.

## TASWATER - URBAN WATER SUPPLY

After flowing into Lake Trevallyn, water from the South Esk River is treated at the Mount Leslie and Reatta Road Water treatment plants. Approximately 5 billion litres of water are treated through these water treatment plants, which is about 25 per cent of Launceston annual water supply.

Water from the greater South Esk catchment area is also used to supply water to townships from Westbury and Deloraine up to Conara and Epping Forest.

## ENVIRONMENTAL FLOWS THROUGH THE GORGE

Hydro Tasmania releases 2,500 litres per second (2.5 cumecs), through Cataract Gorge as an environmental and social flow. They also release water for recreation paddling at least twice a year.

Additionally, floods still lead to water spilling over the dam and through Cataract Gorge. The frequency of these spills depends on whether it is a wet or dry year.

Before Trevallyn Power Station was built, flows through Cataract Gorge fluctuated with seasons. In summer, environmental flows through Cataract Gorge would have been less than 2.5 cumecs at times.



Above: Trevallyn Dam 'on-spill', with flows heading towards Cataract Gorge.



Above: article from the Examiner in 1946, before Trevallyn Dam was built, showing residents' concerns about sedimentation in the upper estuary.

## FLOW AND SEDIMENTATION

Changes in flow and the presence of Trevallyn Dam are often thought to be the cause of sedimentation in the upper estuary. However newspaper articles dating back to the 1900's show that sedimentation was a concern of residents long before Trevallyn Dam was commissioned in 1955.

In 2019, the Tamar Estuary Management Taskforce commissioned a study to look at whether releasing flows through Cataract Gorge would remove sediment build up in the Yacht Basin. The results of the study showed that emptying the dam would remove only very small amounts of sediment from the upper estuary, and that the sediment would return within three months.

For more information, refer to the 'Sedimentation management in the kanamaluka / Tamar estuary', available from [tamarestuary.com.au](http://tamarestuary.com.au)