

# The rise and fall of the Hazelwood pondage barra fishery

## How the changing fate of coal-fired power generation affects tropical fish in a temperate environment

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In 2016 a barramundi fishery was successfully created in the Hazelwood power station cooling pondage (490 ha), Victoria, Australia. However, the unexpected early closure of the power station in March 2017 resulted in the loss of the fishery.

Cooling pondages attached to coal-fired power generators have been used globally to create recreational sport fisheries for popular warmwater species outside their natural range. The Hazelwood cooling pondage was considered a promising location to create a barramundi fishery in southern Australia to provide an opportunity for anglers to catch this popular sportfishing species within a short drive of Melbourne without the expense of travelling to northern Australia.

The Victorian Fisheries Authority (VFA) commenced a barramundi stocking project in September 2015 with an initial acclimation trial and by August 2016, 6,800 (averaging 30 cm) barramundi sourced from a commercial aquaculture farm had been released into the pondage.

The fishery was opened 9 December 2017 as a ballot fishery. Around 26,000 registrations from 3,500 individuals were received from anglers wishing to fish by boat. Permits were initially issued for up to 25 boats per day while fishing from the shore was open to all anglers with a valid recreational angling licence. Following announcement of the closure of the power station (3 November 2016) the ballot system was removed to provide increased angling opportunities before the fishery declined.

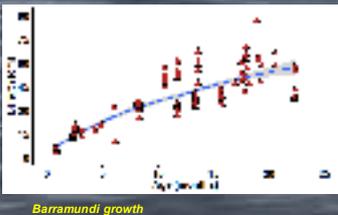


The fishery attracted more than 5,000 anglers to the pondage over four months, contributing over \$700,000 to the local economy.



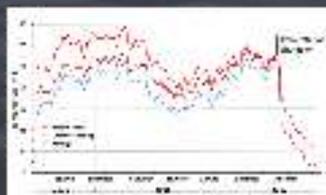
The barramundi growth rates were exceptional with fish averaging 4.1 kg (+ 6.8 kg) and 63 cm (+ 87 cm) after 9 months, rivalling growth rates observed in wild populations in northern Australia. This was attributed an abundance of prey (introduced cichlids), the absence of competitors and optimal temperatures.

The power station closed 31 March 2018, reflecting a global trend away from coal towards low-carbon and renewable energy sources. Following the closure, water temperature in the pondage declined rapidly from 30°C to under 15°C in 1.5 months.



Water temperature varied seasonally and spatially. The inlet channel ranged from 19 to 40.5°C and the pondage from 19 to 33.5°C.

Fifteen acoustically tagged barramundi were recorded more often at temperatures between 24 and 31°C (range 17.5 – 37°C).



To avoid mass fish mortalities commercial electrofishing was undertaken to capture as many fish as possible, which were euthanised. Some barramundi were observed in the summer of 2017, but none have been reported since. Closure of the power station also saw the demise of the exotic cichlids that inhabited the pondage.

Currently the power station is rehabilitating the mine site including the pondage, which has since been stocked with rainbow trout to provide a local recreational fishery.