

Wetlands Australia 37: The Rowan Swamp Restoration Trial: reversing the impacts of creek line erosion on an important in-stream wetland in northern Victoria

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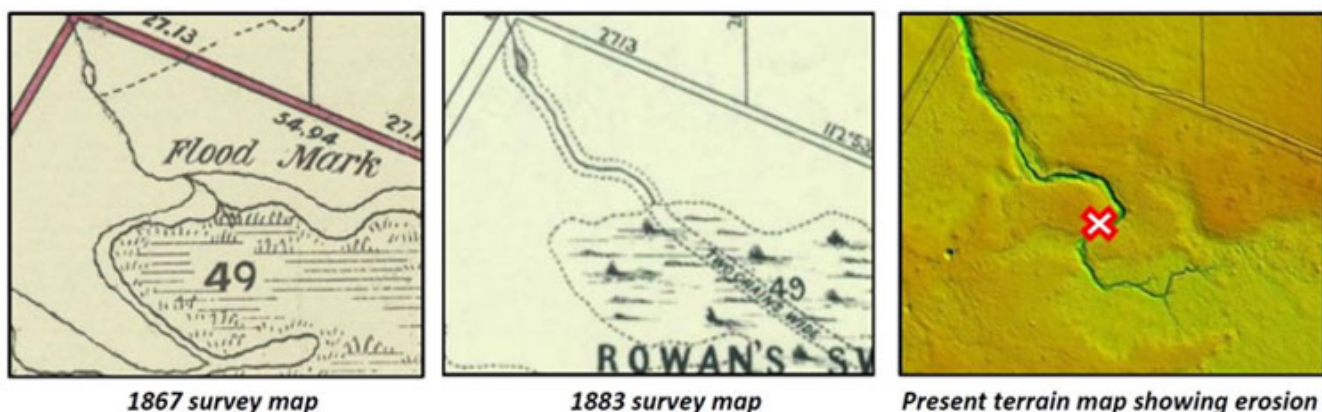
Over the past 2 years Nature Glenelg Trust has been busy undertaking an independent eco-hydrological assessment of the Rowan Swamp Wildlife Reserve, in partnership with Parks Victoria. Rowan Swamp is an approximately 150 ha wetland feature, situated near the township of Lake Rowan, in the Goulburn Broken CMA region about 40 km north of Benalla, Victoria.

The process of getting to know this site has involved an investigation of the history of the wetland and the changes that have occurred to its hydrology (i.e. water regime) since European colonisation. The information that we have been assembling and analysing has been shared with local community members and landholders.

Rowan Swamp is an instream wetland of Boosey Creek. Major erosion events, which likely occurred between the late 1800s and early-mid 1900s have altered the physical character of Boosey Creek, including reducing the depth of permanent pools along its length (resulting in the creek losing its 'chain of ponds' character), as well as the deepening and extension of eroded channels associated with the creek inlet to, and outlet from, Rowan Swamp.

Given the above and other background, our investigation identified that the site would respond favourably to a restoration trial. The trial would be capable of reversing the detrimental impacts of outlet erosion, by enabling any flows that do reach the swamp to be retained to the natural depth (that is, the original cease-to-flow, full supply level) of the wetland for a longer duration. This predicted extension in inundation period after each flow event will have a wide range of benefits for the flora and fauna within the reserve, including their recruitment and breeding life cycles.

The most suitable location determined for the installation of a trial structure was at the location where the edge of the wetland was mapped in plans drawn in 1867 and 1883, as shown below. Also shown below is the significant erosion and migration of the creek channel in the modern digital elevation mapping, compared to the location of the waterway in the 1800s.



The trial structure location is marked with an X, on the modern digital terrain model (right). Note the significant erosion into the wetland bed that has occurred since the 1880s.

On the 25th and 26th July 2022, a team comprised of Nature Glenelg Trust staff, the Woka Walla crew (from

the Yorta Yorta Nation Aboriginal Corporation) and local volunteers, completed the structure by hand to our design specifications.

To make it easier to keep track what is going on in the swamp, we have placed a gauge board in the channel immediately upstream of the structure (next to some Red Gum roots now exposed due to erosion). As shown below, the 0 cm level of the gauge board corresponds to the bed level of Rowan Swamp upstream, while the spillway cease-to-flow (CTF) level has been set 45 cm above this level (at 135.05 m AHD).



The completed restoration trial structure, showing how the channel at this location has eroded below the bed level of the swamp, and the restored CTF level. Photo: Mark Bachmann

In a fortuitous quirk of timing, a couple of rainfall events in the Boosey Creek catchment in the two weeks after the structure was completed generated sufficient flows to fill Rowan Swamp to the new spillway depth, and the catchment has received regular flows throughout the latter part of 2022 as a result of the combined La Niña and Indian Ocean Dipole weather patterns which have driven above average rainfall in south-eastern Australia.

More information about the Rowan Swamp Restoration Trial can be [found at the NGT website via this link](#).



Rowan Swamp restoration trial structure in September 2022 (left) and the wetland upstream (right). Photos: Mark Bachmann

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