

EXPLORING THE FASCINATING HISTORY OF TILLEY SWAMP

In 2018, Nature Glenelg Trust (NGT) was engaged by the South Australian Department of Environment and Water (DEW) to undertake a review of all known environmental data for the Taratap and Tilley Swamp Watercourses (hereafter called the “Baseline Synthesis Report”). Wetlands & Wildlife own and manage significant portions of these previously degraded wetlands and over the past few years supported NGT’s aspiration of seeing more water held in Tilley Swamp for environmental benefit, to reverse the long-term drying trend that had effectively seen this former substantial and significant wetland area lost.

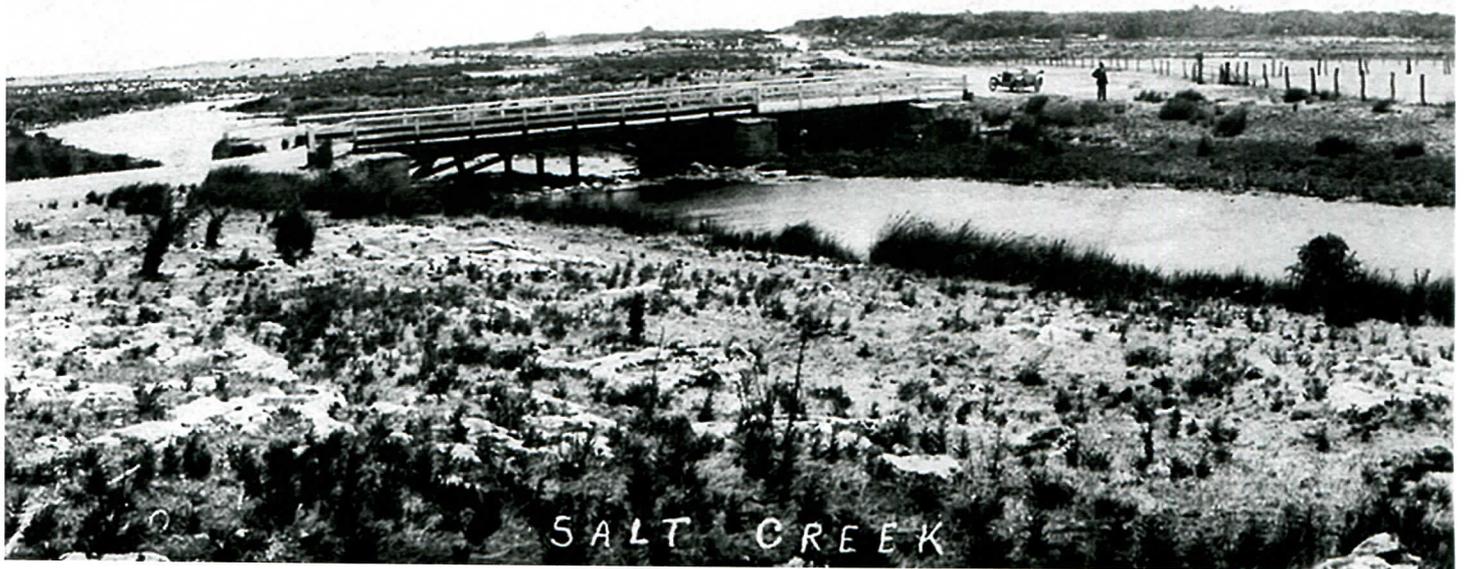
The Baseline Synthesis Report was commissioned to provide a detailed understanding of how these wetlands have changed over time, and also to establish a modern “baseline” of present condition, to enable a future comparison to be made after the implementation of the South East Flows Restoration (SEFR) Project. Construction of a revised SEFR Project was completed in May 2019, incorporating significant changes (first publicly suggested by NGT in 2014, see: <http://natureglenelg.org.au/lets-talk-about-the-south-east-flows-restoration-project/>) that were eventually adopted for the design and objectives of the project.

These changes will now see an additional area of more than 4000 hectares of Tilley Swamp (most of which was dehydrated by past artificial drainage and diversions) regularly restored to its former glory as a functioning wetland ecosystem. This outcome, which will operate from winter 2019, would not have been possible if not for the generous support and foresight of Tom

Brinkworth and family, Wetlands & Wildlife, other landholders within Tilley Swamp and along the SEFR Project alignment, but also DEW, who compromised on the original (drain only) design for the project and agreed to make a large number of last minute major modifications in order to secure this exceptional environmental outcome.

The Baseline Synthesis Report brings together a range of disparate information sources to help us to understand and better define what the watercourse used to be like, how the process of change unfolded, and what biological values it retains today. That involved a thorough review of recent surveys, the scientific literature, aerial photography and biological database records, which are all comprehensively summarised in the report. However, in order to do this task justice, given how early major changes to water movement across the South East impacted upon Tilley Swamp, it also involved a review of early publications, maps, journals, government records and newspaper articles.

These resources are often overlooked by scientific researchers, which is unfortunate because in many instances they are the only possible way of reconstructing and better understanding environmental conditions immediately before and after European settlement. These records often challenge modern assumptions and provide us with deeper insights and Tilley Swamp was no exception. Section 3 of the report is dedicated to the task of interpreting these early materials and forming a coherent understanding and description of Tilley Swamp as it would have been known by Indigenous people for



SALT CREEK

An early photo of Salt Creek – c. 1927
 A significant natural channel
 Image courtesy of the State Library of SA

thousands of years, and as first encountered by Europeans from the late 1830s.

While I recommend you read Section 3 of the report for the full account, I will give you a taste here by looking at a couple of the early references that describe the original hydrological character of Tilley Swamp and Salt Creek, and also some thoughts on more recent vegetation change.

While the early accounts do indicate that the amount of water held in Tilley Swamp could vary considerably according to longer-term climatic trends, during wetter phases major natural flows into the Coorong (via Martins Washpool, Morella Basin and Salt Creek) were observed on several occasions. For example, in his memoirs, Tolmer (1882) recounted how he:

*“started from Adelaide on or about the 7th July, 1847, with Police-trooper Dewson and a pack-horse, and upon reaching the **Salt Creek** I camped for the night on the north side of the creek, which was **much swollen and impassable on account of the heavy rains which had fallen.** Early the following morning we started up the creek, thinking a better crossing would be obtained, instead of which **the whole of the flat was one continuous sheet of water...**”*

In the context of flows and hydrology we observe today in a highly modified

South East region, it is worth reiterating that this description shows that Tilley Swamp was full to capacity and overflowing into the Coorong when it was only early July — which is quite remarkable!

Just how much water was regularly observed in the system in those early days (prior to drainage), is best summed up by Coulthard who gave a description of this watercourse country to Parliament in September 1864, where he stated that opposite Battens (near Henry Creek) the swamp had “not been dry for 4 years”. At the overland route crossing there was 4 feet (1.2 metres) of water “at the present time” and the swamp at Henry’s Creek was 2 ½ miles (4 km) wide. Near Salt Creek there were two large swamps separated by a bar. The larger of the swamps was 5 miles long by 1 mile wide (Morella Basin). The second swamp led into a gorge with from 10 feet to 12 feet (3–4 m) depth of water. From this point Coulthard said Tilley Swamp began in earnest:

“spreading over an immense tract of country, and further than the eye can reach in a southerly direction, with a chain of islands running through the centre of the swamp”

It seems that Tilley Swamp would have regularly presented a vast sheet of water for several months of the year. While the quality of the water is not currently ascertainable, it is

probable that – like many wetlands in the Upper SE – the initial, occasionally large, surface flows reaching this section of the swamp would have had a considerable freshening effect, causing the swamp to be brackish when full, lined with patches or islands of scattered fringing *Melaleuca halmaturorum*. In major flow events, the filling of Morella Basin with relatively freshened water enabled the establishment of a fringe of mature River Red-gums around the basin, which still persist today around (and in some cases above) the former high water mark.

As the watercourse seasonally dried out however and, consistent with its underlying saline soils and groundwater, brackish conditions would have given way to increasingly saline conditions, i.e. samphire flats in the formerly more deeply inundated areas. Specht (1972) noted “very few plants occur in the community: *Wilsonia backhousei*, *Gahnia filum* (thatching grass), and *Salicornia quinqueflora* (samphire) may be found”.

If we fast forward to the present day, as this drying scenario artificially played out with increasing regularity after drainage, upstream diversions and development, this section of the watercourse underwent dramatic and accelerating ecological shifts, as it has been left starved of flows and inundation. The most obvious of these are seen in the dominant native vegetation of Tilley Swamp, which is consistent with changes seen elsewhere in the Upper South East.

As early as 1952, prior to the first comprehensive aerial photography, Blackburn noted that the “*paperbark had spread rapidly in low-lying parts of the Kingston-Avenue Range Drainage Area of the Lower South East*” (referenced in Specht (1972)). While he hypothesised that man-made drains had increased the salt concentration of these areas (which is also partly true given the loss of precious freshening flows from the lower South East) and was responsible for the change, the reality was much simpler. Drainage had simply opened up new ground for germinating paperbarks (*Melaleuca halmaturorum*) to survive without being drowned. It was a fateful sign of things to come and explains the character of Tilley Swamp as it appears today.

However as we look forward, thanks to the completion of the revised design for the SEFR Project, there is an opportunity to halt this trend and see the return of aquatic communities and values that we all feared had been lost forever.

As a custodian of significant parts of Tilley Swamp, I wish Wetlands & Wildlife all the best for your future care of the watercourse, as we now await the return of flows to this incredibly important wetland ecosystem in winter 2019.

FOOTNOTE

Wetlands and Wildlife have been provided with a small number of copies of the Baseline Synthesis Report, but additional copies (or an electronic version) can be made available by request, noting that the citation for the report is as follows:

Tuck, J., Bachmann, M., Farrington, L., Taylor, B., Glare, A. and Veale, L. (2019) Baseline Synthesis of Ecohydrological Data for the Taratap and Tilley Swamp Watercourses, South East of South Australia. Report to the Department for Environment and Water, Government of South Australia. NGT Consulting – Nature Glenelg Trust. Mount Gambier, South Australia.

By Mark Bachmann, Nature Glenelg Trust (mark.bachmann@ngt.org.au)

NatureGlenelgTrust 