

Flows for the Future Newsletter



Welcome to the fourth edition of the Flows for the Future Newsletter. You are receiving this as a valued member of the low flows community.

We hope you enjoy reading about some of our recent success stories.

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The Flows for the Future Program is delivered under the Murray–Darling Basin Plan, jointly funded through the Australian Government Department of Climate Change, Energy, the Environment and Water and the South Australian Department for Environment and Water.

Meet the team! Tim Vale

Tim Vale is one of seven Field Officers lucky enough to work with landholders throughout the Eastern Mt Lofty Ranges. Tim is often out visiting people on their properties, taking on local knowledge of how watercourses and dams are used, how systems have changed over the years and sharing information about the Flows for the Future Program and how passing low flows can help establish healthier catchments and more sustainable water use.

Growing up in Melbourne, Victoria, Tim spent most of his holidays visiting his grandparents beef farm at Mount Compass, South Australia (below).



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Left: Tim and his daughter checking out the new build.
Above: Getting to know landowners is Tim's favourite part of the job.

Tim has fond memories of running around the bush and paddocks where his passion for nature conservation began.

Fast forward thirty years and Tim now lives nearby to his childhood holiday haven in Currency Creek with his wife Lee, two daughters and their mad Border collie, Eddy. Tim and Lee fulfilled their dream and built an impressive off the grid straw bale house. Yes, Tim's a hippy but without the hair!

Before joining the Flows team, Tim worked for the Conservation Council of SA and the Australian Wildlife Conservancy on threatened species and ecological communities recovery projects. Engagement with landholders and the public was critical in these roles and has helped Tim in his field work for Flows for the Future. Tim has a great understanding of the complex groundwater and surface water interaction in the Tookayerta surface water catchment area, having worked with landholders to protect and restore Fleurieu Peninsula Swamps.

Tim enjoys hearing different ideas and viewpoints which makes working with landholders a perk of the job.

“Most people on the land are great problem solvers and are open to improving practices for sustainable land use.

It's encouraging to hear that most landholders hope to improve the health of their patch for future generations”.

In other staffing news...Flows for the Future would like to thank and farewell Program Leader Renata Rix and Project Officer Casey Henderson from the project. You may still see Casey in her new role as Murraylands District Manager, working with farmers to manage pest animals and plants. We wish them all the best in their future endeavours.

Species spotlight: Southern Emu-wren

Habitat degradation is thought to be one of the main causes for a decline in numbers of the Mount Lofty Ranges Southern Emu-wren.

Read on to find out how Mt Jagged Wines is working with the Goolwa to Wellington Local Action Planning Association to protect and restore critical habitat for this endangered bird.



Southern Emu-wren, photo courtesy of Martin Stokes





A stunning vista at Mt Jagged Wines

Habitat restoration at Mt Jagged Wines

Mt Jagged Wines is working with the Flows for the Future Program to deliver water that supports critically endangered Fleurieu Swamp vegetation, home to a host of native species frogs, insects, birds, and plants.

Community based organisation Goolwa to Wellington Local Action Planning Association, has worked with Mt Jagged Wines and others in the area for many years, undertaking weed control and revegetation throughout the Fleurieu Swamps. This latest partnership builds on the work at Mt Jagged Wines for even better outcomes through the establishment of infrastructure to restore low flows.

‘We applaud the ongoing work of Goolwa to Wellington Local Action Planning Association and Mt Jagged Wines, who are endeavouring to restore suitable critical habitat and low flows to allow native plants such as the Tangled Rope Rush (*Empodisma minus*), Red-fruit Saw-sedge (*Gahnia sieberiana*) and Hop Goodenia (*Goodenia ovata*) to thrive’.



Gahnia sieberiana

Councils helping catchments

Alexandrina Council and Mount Barker District Council have jumped on board the Flows for the Future program, contributing to flows in the Angas and Bremer catchments, and improving the environment for their local communities. Flows for the Future staff have been working alongside private landowners and local councils in the Eastern Mount Lofty Ranges over the last five years, achieving outcomes for the local environment. The focus for this partnership is to deliver low flows at critical times for the benefit of catchment health. Alexandrina Council and Mount Barker District Council have low flow stories to share.

Alexandrina Council in the spotlight

Alexandrina Council has gauge boards, a release device and a gravity device installed at council locations along the Finnis and Angas Rivers and Rodwell Creek. These devices have also been installed on private properties across the Alexandrina region, directly benefiting local catchment health and increasing the resilience of broader catchments in the Eastern Mount Lofty Ranges.

The Environmental Project Officer, Alexandrina Council explains how participating in the program helps council meet its environmental targets.

“The Flows for the Future Program has assisted Alexandrina Council to further fulfil our Environmental Action Plan and A2040 Plan targets of responsible land management, protecting our water resources, enhancing biodiversity and progressively addressing climate change.

The team has provided educational material based on science, and has been available to answer questions and



Thring Lane Bush for Life Reserve

work with the sites' interested parties. The devices are individually tailored to each site with minimal disturbance or ongoing maintenance."

The Flows for the Future team worked with council to install a device which releases low flows at critical times of the year into the Rodwell Creek, supplying much needed water to the watercourse when it needs it the most.

The local Bush for Life group is a caretaker of the reserve and was consulted on the installation of the new device. Bush for Life volunteers maintain remnant bushland in the area that provides refuge for native water birds and a trail through the site that is popular with local hikers, birders and horse riders.

One volunteer comments; "We love going to check on the place with its beautiful big dam. Of special interest is a tiny group of lemon beauty heads, a rare little tussock, on the track down to the water. It makes me feel good that the water diversion device was installed so carefully without disturbing the wildlife".

The new device will help ensure the Thring Lane Bush for Life Reserve continues to be enjoyed by recreational users for many years to come.

Mount Barker District Council in the spotlight

Mount Barker District Council has partnered with the Flows for the Future Program to improve the health of local catchments at various sites within its district.

The popular Byethorne Park at Nairne now hosts one of these devices. Members of the public can visit the park and see the device in action. The gravity device is readily accessed in the park and diverts small amounts of water on the way to the dam during rainfall events.

A new interpretive sign installed next to the device explains how the device operates and benefits the local environment. The device returns critical flows to the environment and benefits the local site. A community member who resides downstream of this site commented "Since the device went in the flow has been more even and less flash-floody".



The Mt Barker community can now see a low flow device in action along with interpretive signage installed at Byethorne Park



'The Flows for the Future Program is supported by the Mount Barker Council's Biodiversity Strategy which incorporates supporting freshwater ecosystems. By returning lows flows to the environment, critical flow patterns can resume improving the health of all catchments'.

What's happening in the Tookayerta Creek catchment?

The Tookayerta Creek surface water catchment area begins near Mount Compass and flows in an easterly direction, through Nangkita and Tooperang and eventually into the mouth of the Finniss River near Lake Alexandrina.

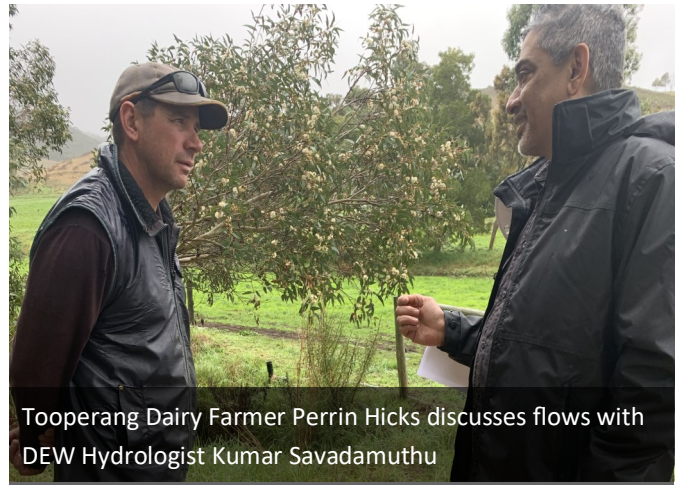
In this catchment, unlike others in the Eastern Mount Lofty Ranges, groundwater that expresses to the surface delivers the majority of water that landholders access for stock, domestic and licensed purposes.

Dating back to the 1890s, the swampy peatlands of Nangkita and Cleland Gully Creeks were extensively drained and cleared for agricultural development. This resulted in a complex network of drains that flow throughout the year. Some drains have silted up but many are still active and provide landholders with a reliable source of stock, domestic and licensed water. For this reason dam development has not been as intense in this catchment, however, there are still a few large dams nestled in the steep gullies of the hills surrounding the peaty valleys.

The majority of work modifying drainage systems was undertaken by property owners independent of their neighbours, with the exception of the lower Nangkita Creek bypass drain. This drain was hand dug in the 1890s and accumulates water from properties along Nangkita Road, discharging it over an artificial waterfall which is still present to this day. Another drain constructed nearby drains the peatlands to enable clearance for cultivation.

Later changes in the catchment saw a shift from market gardening to dairy farming however the small property sizes eventually led to closure of these dairies and another shift to lifestyle properties.

The Flows for the Future team is now engaging with landholders in the Tookayerta Creek catchment and undertaking property visits at key sites. Landholders have shown interest and generosity in allowing Program staff and



Tooperang Dairy Farmer Perrin Hicks discusses flows with DEW Hydrologist Kumar Savadamuthu

hydrologists to survey their systems relative to the overall catchment area.

Critical drain junctions are being mapped, along with measuring the proportion of flow in parallel and connected drains. The large contribution of groundwater to surface water flow and the complex drainage network in this catchment creates complexities for the Program.

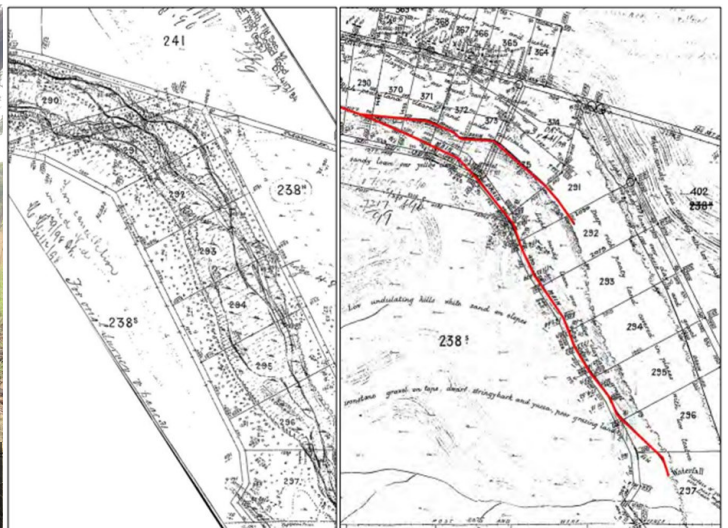
‘Consideration is being given to how we can equitably treat, or pass low flows on licenced watercourse extractions in this complex catchment’.

Working closely with landholders, the F4F team is collecting water data for improved surface water modelling. This will enable Field Officers to visit landholders and provide an accurate picture of how low flows can be equitably passed.

Below, the original land survey for Nangkita (left) from 1890 and the resurvey (right) from 1898. The hand dug drains are highlighted in red. *Farrington, L., Bachmann, M., Taylor, B. and Roberts, T. (2017) Identifying Fleurieu Peninsula swamps with eco-hydrological restoration potential in the Tookayerta catchment: A targeted assessment of landscape change within the SA Murray Darling Basin NRM Region. Nature Glenelg Trust, Adelaide.*



DEW hydrologists measure the dimensions of a small weir on Nangkita Creek



Currency Creek flows for future generations

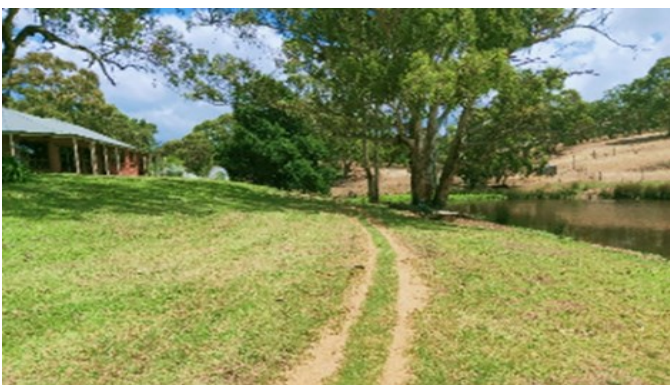
Mount Compass property owners Pauline and son, Sjors, enjoy a tranquil lifestyle on their picturesque property, where they also run a cattle and sheep production enterprise.

Pauline has an affiliation with the land having spent much of her childhood playing in the creek on her father's property in Crows Nest and has wonderful memories. "I want the same for my grandchildren" Pauline says.

“ We believe in doing our bit for the health of the landscape and waterways. We want to make sure our farming practices are sustainable.”

Pauline and Sjors have worked tirelessly to remove significant infestations of blackberry and other weeds downstream of their dam and report there is still plenty more to do. Pauline says "I'm concerned about the decline in the health of catchments, both locally and as a complete system".

When an opportunity arose to participate in the Flows for the Future program, Pauline and Sjors jumped on board and worked with the program to find a suitable option for passing low-flows around their dam. A gravity low flow device was identified as the most suitable option, despite the ideal path for trenching being through the lawn and driveway. This potential disturbance caused some concern. Pauline and Sjors worked with program staff to develop a suitable construction plan.



The trench line after construction



Pauline Verwaal, her grandson Magnum, and Field Officer Murray Graetz check out the new device

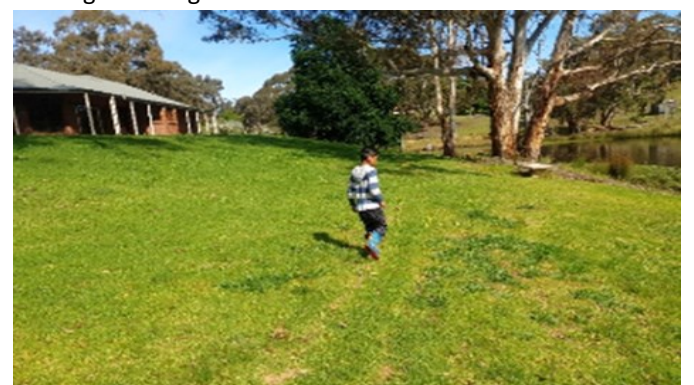
To minimise disturbance to the lawn during excavation for the bypass pipe, a tarp was used to hold excavated soil. After the pipe was laid, the soil was filled back and packed down, before roll out turf was laid to restore the small excavation scar.

The Flows for the Future team has worked with hundreds of landholders, often dealing with complex sites. There is a range of challenging scenarios and solutions that staff and contractors have worked with including steep and rocky sites, flat and boggy sites, as well as lawns and driveways.

Pauline says "They did a wonderful job on the lawn and within a few months of construction it had completely recovered. They also left the driveway in top condition". Additionally "we were able to directly engage the contractors to carry out private works while on site, saving us contractor mobilisation costs".

Pauline says "The device is now passing small flows into the creek. We haven't noticed much impact on the dam, it has filled and spilled as usual."

By installing a low flow device, Pauline and Sjors help support the regeneration of native aquatic plants and animals and maintain their water security. The Verwaal grandkids and future generations will benefit from a healthy system. Pauline enjoys creating fond memories with her grandkids and building a lifelong connection with nature.



The trench line six months later