

April 2019



# ***Biddip***



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Newsletter of the Toodyay Friends of the River

Volume 13, Issue 1



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*The Toodyay Friends of the River are grateful to the Wheatbelt NRM for their on-going support in producing the Biddip newsletter*



**wheatbelt**  
natural resource  
management

# Presidents reflections

by Sarah Dudley

As we optimistically wait for the rain gauges to register further measurable falls of rain and watch our dwindling water supplies sprinkled on to resistant hydrophobic soils, we reflect on the need for both plant and animal resilience and adaptability as our climate warms and water sources lessen.

Toodyay residents marvel that groups of pelicans and black swans, sporadic cormorants with outspread, drying wings after diving for a feed, myriads of busy coots, grebes and ducks, are still able to find enough food to sustain them in the ever shrinking river pools. Are these river birds more responsive to changing climatic conditions than us humans?

What is it that attracts us to the River Avon? Is it its appearance? Its water quality? Its water level and depth? The river bank vegetation? The presence of fish? The birds? The kayaking? The Descent? How will each of these change in the future?

And what will this River be like in a century from now? Rainfall records from nearby Gingin, started in 1889, clearly indicate an ever increasing drying climate and more frequent periods of intense heat. This impacts on the stream flows, connections with aquifers and overall environmental flows. What will TFOR's role be in assisting our wetland zones to survive with a future of less than 450mm annual rainfall? TFOR is endeavouring to look to the future and to become increasingly responsive and pro-active in relation to the seeming inevitability of a changing climate with less rain. The greater our linkage with other environmental groups facing identical challenges, the more effective the search for solutions and appropriate environmental remedial action will be.

## *Nomination of Toodyay Friends of the River for the 2019 ACTIVE CITIZEN GROUP*

THE following nomination for the 2019 Active Citizen Group resulted in the Toodyay Friends of the River becoming a finalist in the Award.

THE TFOR was established in 1994 to become incorporated in 1998. Members have promoted the care of the Avon River and its tributaries within our shire over the past 20 years.

A nursery to raise endemic plants for the community, at very minimal cost and for re-vegetation of the riverine environment, has been established together with a compost facility. Extensive revegetation projects have been completed along the Avon River and the tributaries of Malkup, Harper and Boyagerring Brooks, Millard Pool, White Lakes subdivision and nearby the river, historic Nardie Cemetery. Busy-bees for these projects are on the second Sunday of the month and the following Monday for those members who cannot attend the Sunday.

A river walk track has been developed and is continuously maintained as it is very well-used by locals and visitors. A picnic setting has been added along the way at Lloyd's Reserve and also a shelter with descriptive information at Millard Pool.)

To raise necessary funds for tools, insurance coverage, etc, the members participate in several organised litter collections annually together with an annual fundraising raffle. Members assist with parking for the Avon Descent for which they receive a Shire financial donation.

*Cover Photo: TFOR was a Finalist in the 'Active Citizenship Group' Award on Australia Day 2019.*

*Members pictured are (from left) Sarah Dudley (Pres.), Desraé Clarke, Meg Malone, Wayne Clarke, Robyn Taylor, Bob and Beth Frayne and Grahame Malone.*

*Photo courtesy Gary Walton - Colour Splash Media / Shire of Toodyay*

## Nomination for the 2019 ACTIVE CITIZEN GROUP (... cont)

The 'Environment Matters' marquee at the annual agricultural show is shared with the Toodyay Naturalists' Club to promote the group and its commitment to care and welfare of the riverine environment. It is also an educational tool as information is distributed to the general public.

Comprehensive articles are written in the monthly community newspaper to highlight the work of the group, its achievements and future projects.



A newsletter is published three times annually with contributions from the members. It centres on achievements, observations of wildlife, success of revegetation, monitoring of the river and the state of the water, movement of silt, weed distribution, removal of weeds and interaction with other like-minded groups. The newsletters are housed in the National Library in Canberra and the Battye Library.

The TFOR has a website with which members can interact particularly with a current project that is to observe the health of the riverine environment. Permanent monitoring points have been established for photographic records of the surrounding vegetation that includes weeds. This program includes observations of native birds but also of introduced waterbirds, feral species such as the fox and rabbits.

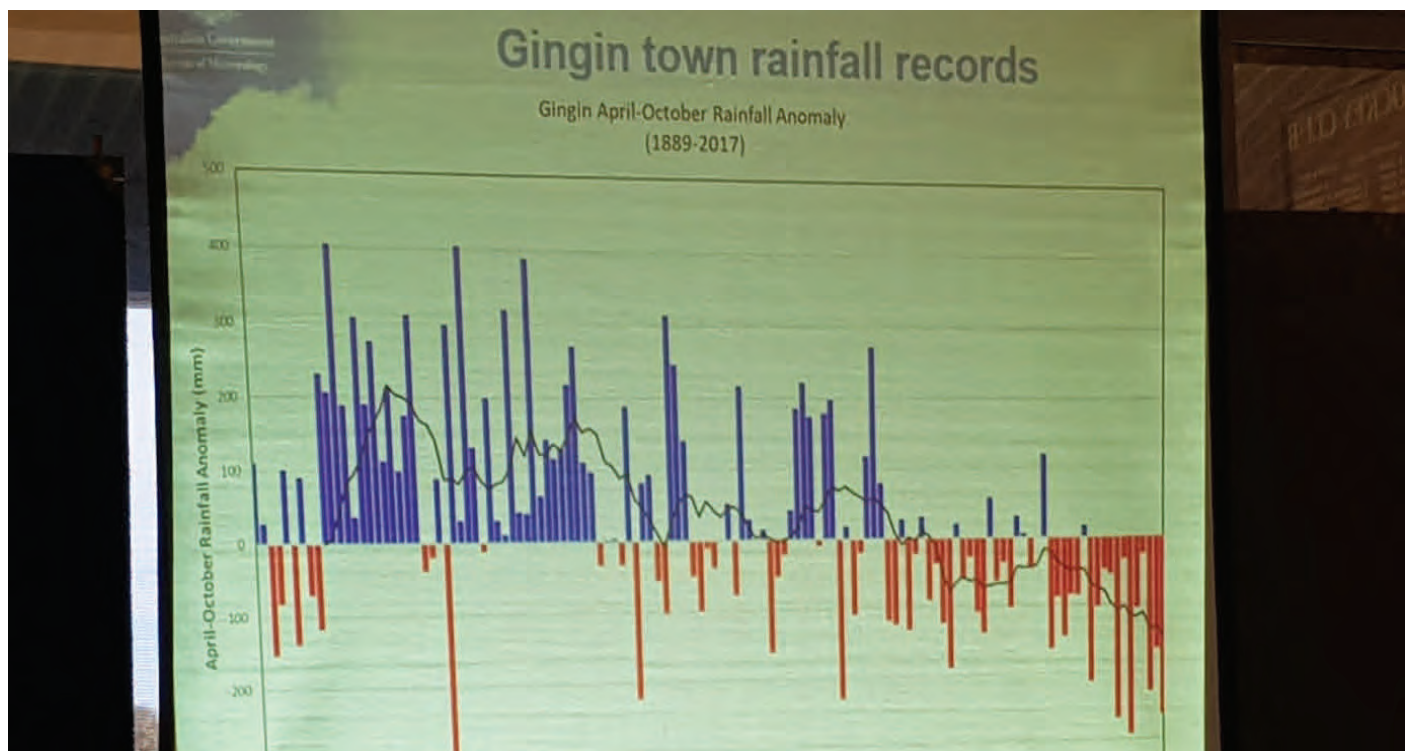
A comprehensive annual survey of a 10 metre square quadrat has been commenced to identify plant species with the results used by university graduates in their field work. summary the TFOR has highlighted the significant issue of interference with an ecosystem from the River Training Scheme of the mid to late 1900's. Members have volunteered hundreds of man-hours in the study and protection of the iconic Avon River and its environs through the Shire of Toodyay.

# Where has all the water gone?

by Sarah Dudley

A QUESTION rural communities in particular contemplate as the water levels in their rainwater tanks get progressively lower and lower and the garden soil becomes drier and drier. As the rivers dry, reflective folks wonder where all the aquatic species have gone – and marvel at their ability to reappear when the tributaries fill the rivers once again. However, the question has to be asked: How long will they be able to reappear for, with our increasingly drying climate? What is their endurance cut-off point? And what other consequences can we all expect as rainfall levels continue to fall on a regular basis?

The Chattering Landcare Centre recently ran a factual and interesting workshop in Gingin, Toodyay's neighbouring shire, which aimed to address this question. A climatologist from the Bureau of Meteorology (BOM), presented graph after graph, emphasising the irrefutable drying change we are currently experiencing. This is by no means a temporary drought. We are not going back to "how things used to be".



Our streams with their biodiversity are fed by the aquifers. If the aquifers are insufficiently replenished due to an 11% drop in local rainfall in the last ten years and an annual rainfall of less than 400ml per annum predicted for 2040, survival means change. The alternative is extinction, not just for our aquatic flora and fauna, but for our carefree habits of using water to meet our everyday needs. A balance is required not only between protecting our river systems and optimising water allocations, but meeting the social value of water which, research is indicating, places a high value on both water appearance and water quality. However, like it or not, the future is predicted to be both drier and hotter:

We were briefly introduced to the 'South West Index of River Condition'. The SWIRC includes six key ecological themes representing ecological integrity: aquatic biota, water quality, fringing zone, physical form, hydrological change and catchment disturbance. It includes a standardised system for scoring each of the indicators. This allows the results to be compared between river systems across south-west Western Australia.

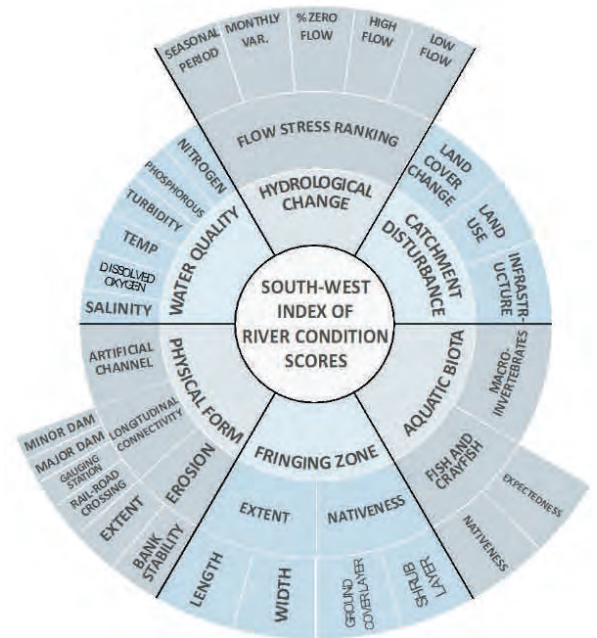
# Where has all the water gone? (...cont)

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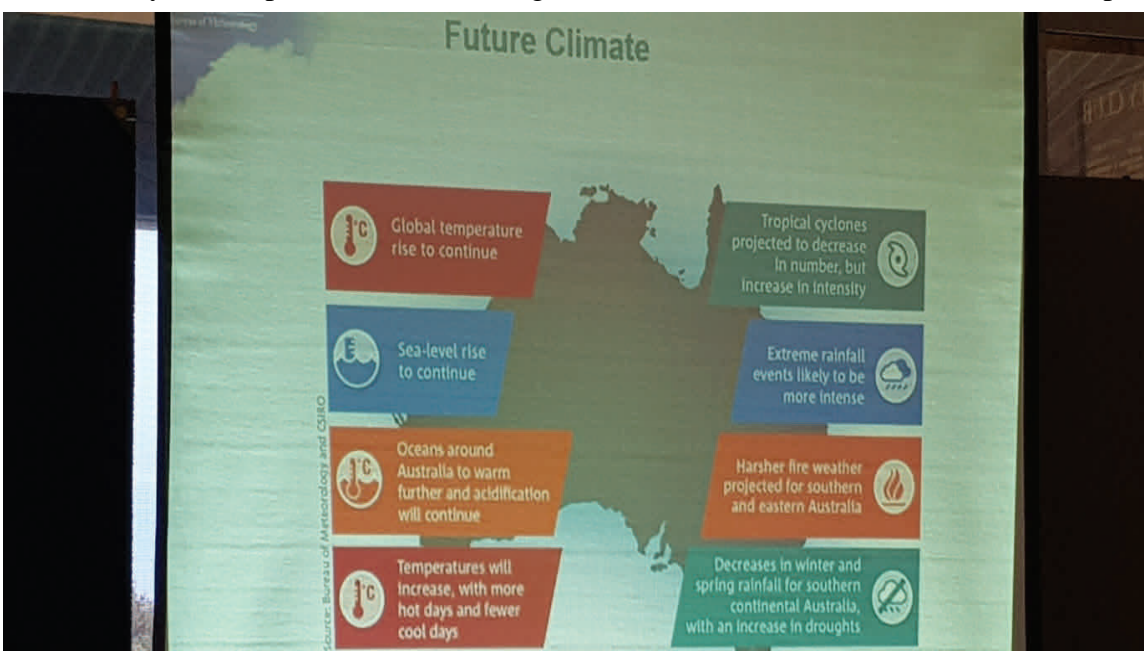
Decreasing rain leads one to wonder about the future for our wetlands? Not only do they need protecting but many need repairing. As rainfall levels decrease and evaporation levels increase due to rising temperatures, eutrophication, acidification, and salinization are anticipated to increase. Contaminant residual pollutants such as heavy metals and pesticide residues will also become more concentrated.

However with careful management there is hope for wetland survival. Innovation, albeit challenging, needs to start now at the local level. The vision for the future covered a few possible strategies, such as: the maintenance of environmental flows needs to become a priority for all; less water has to be used for irrigation, which will necessitate changes in agricultural and horticultural water allocations; the creation of corridors to connect remnant habitats is essential to prevent extinction as well as the establishment of fish ladders in streams and drier areas to enable native species such as cobbler, pygmy perch and western minnows to move to their feeding and breeding grounds. The conversion of traditional farm dams to small, biodiverse wetlands is also realistic and has already begun in the Chittering area.

Education for the need for change is an essential tool. As one speaker wisely quoted: “The person who plants trees knowing they will never sit in their shade, has at least begun to understand the meaning of life.” To answer the question ‘Where has all the water gone?’ will need not only some understanding of the inevitability and impact of climate change in one’s lifetime, but exhort us all to be prepared to do his/her



best to safeguard our water flows and biodiversity for generations to come. We all must learn to live with a drier climate and changed weather patterns and cease hoping for the good old days when rain was plentiful.



# Planning of Revegetation Projects

*by Bethan Lloyd*

TOODYAY Friends of the River (TFOR) members plan to plant numerous native seedlings along the Avon River, and its tributaries, in June and July of each year. The seedlings used are produced by the Seed Orchard Group (SOG) I lead, a sub-committee of TFOR.

May is planting time! This month is usually the earliest opportunity for soil moisture to become adequate for planting native species. Successful establishment of these plants does, however, depend on getting a few things done correctly in preparation especially if we end up with an anticipated below average rainfall. Good conditions for planting usually last until the end of July. After that month there is generally not enough time for the plants to develop a deep enough root system to tap into the sub-soil water supply before the drier weather ensues.

The seed of the plants in the photo doesn't require any further treatment except to be extracted when the weather is warm and to keep the pots well watered following planting of the seed. However, there are native plant that does need assistance and preparation prior to planting.

Sandalwood is best soaked in a bucket of water with a teaspoon of bleach and then laid in sun to dry which facilitates cracking. If no hair line cracks are detected after the first go repeat the treatment. Sow directly into the ground in autumn about 50 cm from a host-plant that is usually an acacia species.

A hot water treatment or scarification is necessary for some hard seeded species such as Acacias and Gastrolobium and smoke water is required for plants such as Grevilleas and Kangaroo Paws.

Here are handy hints to help bring you success.

- 1.If ordering from the SOG ensure your plants are ordered early. Before Christmas is usually best as this will mean we can collect seed locally and plant what you require. Leaving it until the planting season is almost upon us means choice is inevitably reduced. Our SOG gets most of the sowing done in December and January, the warmer months, so we have plants ready for planting out by the beginning of winter. The accompanying photo shows a selection of seed pods of various local native species we have collected. Even within one genus the variation in shapes is amazing.
- 2.Select plants that are suitable for your soil type, location, aspect, local conditions and rainfall. Look around and note which species are doing well in neighbouring properties, parks or bushland areas. Rainfall reliability is becoming hard to predict as the climate changes. Therefore success is more likely if plant species are selected from the Wheatbelt region rather than looking west to the Hills and towards Perth. Local species always do best. Areas that are exposed to wind, become salt affected, are of heavy clay soils or are periodically waterlogged need more careful species selection
- 3.In autumn before planting, and when the soil is still dry and hard, areas should be prepared to loosen the soil. Large areas can be ripped to crack the soil and allow water penetration in the future. For smaller areas, a mattock is useful to open up and loosen the ground.
- 4.Weed control is always essential as these fast growers will compete with the new seedlings for both water and nutrients
- 5.Select plants in square, long tubes which allow a good 'root-run' to develop. If you have to use plants which are slightly root bound, tease out the roots a little before planting. If you can't plant immediately, make sure the plants are well watered. This helps them come out of the pot a lot easier as well.
- 6.When buying plants ensure they have been 'hardened off'. Some producers grow the plants in shade houses and then the unsuspecting buyer is disappointed when the new plants struggle and gasp in full sun.
- 7.When planting, ideally, the ground should be moist. Firm in well using your heel and finish with a small depression around the plant to act as a well to collect water.

## Planning of Revegetation Projects (...cont)

A TFOR major project for 2019 is planned along Boyagerring Brook, a tributary of the Avon River; this will occur in early June and possibly July. The ground has been prepared with destruction of weeds and ripping and the plants have been hardened ready for planting.



*Bethan's photo above -mixed seed pods of hakea, melaleuca, allocasuarina and eucalypt species*

## Toodyay Landcare Coordinator - 1998

IT IS twenty years since the appointment of the first Community Landcare Coordinator (CLC), Steven McCabe. This appointment was a great milestone in the shire's history.

Steve placed an introductory message in the March 1998 edition of the monthly Toodyay Herald stating that: *"An important function of the CLC is the distribution of information to the community on a range of land management issues through field days, conferences, workshops, newsletters and the provision of technical information to landholders. As a CLC, I can act as a link between the community and government agencies but I am not affiliated with any government department and am based in the community."*

Steve became a member of the Toodyay Naturalists' Club and took on the role of secretary for a short period. He was also invited by the Toodyay Friends of the River to attend a working-bee Sunday 22nd of February 1998 to begin the removal of feral weeds from the river around Duidgee Park. He stated: *"One of the weeds that took a beating that Sunday, Athol Pine, or Tamarix, concentrates salt on its leaves and can lead to salinisation of the water courses"*.

These trees have been planted extensively throughout the wheatbelt and it is only in recent years that the detriment of this plant has been realised.

# What's in a bridge (or what's under it)?

## Old Toodyay Road bridge over Gabidine Brook



By Beth Frayne

Recently, the Gabidine Brook has been receiving some attention from TFOR and Toodyay Historical Society (THS) members due to the existence of a very old bridge over the Gabidine Brook.

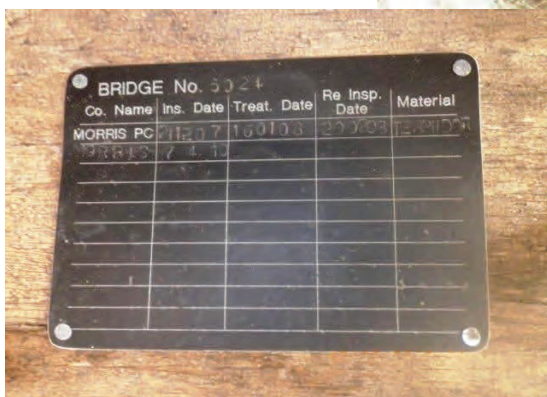
THS member Alison Cromb has determined that “the Gabidine Brook Bridge is a composite timber and masonry bridge situated 12 kilometres from the townsite of Toodyay on a portion of the original Toodyay Road gazetted on 1 November 1867.

It is unique in that evidence has now emerged which reveals that it was erected in late 1880, long before that type of construction came into regular use during the 1930s.”<sup>1</sup>

The Gabidine Brook starts near the locality of Ringa at an elevation of 335m and ends at an elevation of 177m before merging with the Jimperding Brook, a tributary of the Avon River. The Brook drops around 158m over its 4.16km length. It runs through the reserve that takes its name that can be accessed from the Toodyay/Perth Road (rural road number 5309) and situated on the Old Toodyay Road. If you walk east,

you can view the old bridge mentioned on the walk and tracks website: <http://www.toodyay.com/Walks-tracks-and-parks/Gabidine-Brook-Reserve-No.-2876>

<sup>1</sup> Alison Cromb. Report prepared April 2019  
ISBN 9780646951744 (pbk).



Left: Termite Treatment plate for the bridge - last treated 2008

Photos: Greg Warburton



## *What's in a bridge ? (...cont)*



*Above: Over the years termites have taken their toll on the beams of the bridge, but the abutments and the piers have stood the test of time.*



*Left: Removing the old picnic tables proved quite a chore - they would not have been easy to steal*

*Photos: Greg Warburton*

# GOODBYE to GABIDINE

*by Greg Warburton*



*Left: An example convict era bridgeworks under the Old Toodyay Road crossing of Gabidine Brook.*

*Photo: Greg Warburton*

MOST regular travellers along Toodyay Road would be familiar with a picnic area at about the 12 km peg. It is contained within an 8 hectare crown reserve (No 2876) which has the purpose of “Public Recreation” and is managed by the Toodyay Shire. Access to this location is the Old Toodyay Road which now continues on as Strahan Road to Salt Valley Road. About 30 years ago this area was extensively developed as two separate picnic sites with tables, rubbish bins, bollarded parking areas and concrete fire places with hot plates. Although history indicates Main Roads did this work it is not listed on the Department’s asset list. One can only assume that the site was chosen because the spot is very pleasant with the Gabidine Brook flowing past over huge water smoothed granite boulders. This spring-fed creek would flow most of the year on its way to enter Jimperding Brook a few hundred metres downstream. Gabidine Brook has also been a water quality monitoring site with regular data collected by the Toodyay Landcare Officer during the early 2000’s.

Over the years the picnic tables became degraded with the wooden planks rotted and broken. Main Roads removed the rubbish bins and some vandalism occurred to the fire places. In addition, many incidents of inappropriate activity have been recorded there from illegal fires to dumping of rubbish and abandoning of cars. Safety issues with vehicles pulling out from the access onto the Main Road have also been raised. Since work has commenced on the Toodyay-Perth Road upgrade there has been a proposal by Main Roads and indeed a request from the land holder who borders the reserve that vehicle access to this location be prevented. Toodyay Reserve management are supporting the proposal and consequently removed the ‘Picnic Area sign’. The Shire has also removed four of the six picnic tables and refurbished them.

Meanwhile, the Shire will continue to manage reserve 2876, has already improved the fire breaks and created a rock vehicle crossing to allow fire access and protect the waterway from erosion.

## Earthwell (Quakers) visit

HELENE Fisher, Director of the Quaker Group of Earthwell, contacted the TFOR executive to plan a visit to Toodyay as the members are interested in the Swan/Avon River and its welfare.

The group had travelled to various areas of the Swan and were now proceeding upstream with Toodyay the first stop; it is planned that Northam and York will also be visited.

The group was met by Sarah and Robyn and taken to significant Toodyay areas along the river such as the Bilya Walk Track, Red Banks Pool, the John Masters Bird Hide and Millard Pool.

A historical aspect of the river was given especially the past of significant flooding of the original town-site and farming areas to be followed by the Training of the River and the problems that have eventuated from that invasive work.

The visitors were given an overview of the origin of the TFOR, its aims and objectives and the input the members have in weed and fire control, revegetation of the river environs and education of the community to the importance of the Avon River.

The Earthwell members were appreciative of the time given them and the work of the TFOR members.



*Earthwell members at Millards Pool are, from left to right - Emm Forte, Gina Price, Heather Williams, Adrian Glamorgan, Sarah Dudley (TFOR President), Elizabeth Po' and Helene Fisher.*

*Photo: Robyn Taylor*

**Newsletter of the  
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**WORKING FOR THE HEALTH OF THE  
AVON RIVER**



Toodyay & Districts  
Community Bank<sup>®</sup> Branch



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## The Back Page



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The next major project proposed for Toodyay Friends of the River is a five year, multi-stage undertaking (2019-2023) to solve the problem of significant riparian erosion and water pollution in the centre of Toodyay. This is caused by huge volumes of water gushing through a major outlet directly onto the riparian zone behind the Cola Cafe and the Anglican Church. The water comes from the modified Pelham Brook, together with run off / storm water from the town car park and neighbouring streets.

*Above: Just metres below the outlet, taken on 23 April 2019*

*Photo Wayne Clarke*