

Upper Hopkins Land Management Group Newsletter



Spring 2019

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Diary Dates

UHLMG AGM—Chalambar Golf Club. 6pm 10 Sept
PPS Annual General Meeting—Gum San Chinese Heritage Centre. 11 Sept (see page 6)
SFS Women on Farms—Mininera. 10 Sept (see page 7)
Nuts and Bolts of Grazing Management—Dunkeld Rec Reserve. 18 Sept. Register [online](#) or contact [Tess McDougall](#) at AgVic (03 5355 0530).
CFA info session—removal of pine trees from the Top End of Town. Willaura Fire Station. 1pm, 19 Sept.
Ararat Landcare Group—St Andrews Church Hall, Ararat. Next meeting 7pm, Monday 7 Oct.
Annual Gathering—*Sidlaw*, 963 Andrews Lane, Maroona. 5.30pm 18 Oct.

Welcome to the Spring 2019 edition of the UHLMG newsletter

Editor: Ayesha Burdett

Local Landcare Snippets

Bioindicators of high performing soils was the theme for a recent workshop hosted by Upper Hopkins LMG and the Glenelg Hopkins CMA. Many thanks to all who attended and contributed to the discussion. As your new Facilitator, I have just joined the Soil CRC *Community of Practice for Building Technical Capacity for Improved Soil Management* for southern Australia. This group will be meeting over the next two years to build skills and knowledge about soil health, so that each participant can become a resource of information about soil health for their local group.

A Climate for Change is the theme for the [22nd annual Wimmera Biodiversity Seminar](#) to be held in Rupanyup on Thursday, 5th September. I'll be attending to hear about projects that promote positive change in our environment. The speakers will discuss the changes that they are seeing through new and innovative techniques, a look at where we have come from and how we move forward in our changing world.

Upper Hopkins LMG Dinner and AGM is coming up soon (10 September). RSVP by contacting me ([Ayesha Burdett](#)) or responding on [Facebook](#). Howard Brandenburg and Ayesha Burdett will be speaking about their experiences as biologists in the USA and Australia. During the AGM, we will be electing new committee members—a great opportunity for anyone interested in contributing to the group and learning more about Landcare. Please contact me if you would like to know more.

Weeds & Rabbits: Don't forget! UHLMG currently has a small amount of 50:50 funding available for gorse and rabbit projects—contact Celia Tucker on 5354 6277. The UHLMG spray unit is available for members to use—contact Bruce McKay on 0417 512 189.

Welcome to the Spring 2019 Upper Hopkins LMG newsletter, my first as the Upper Hopkins LMG Facilitator. Many thanks to Una for all of the work that she has achieved with Landcare and for the invaluable advice and guidance that she has provided to me in the last two months. I'm gradually getting to know everyone in the Upper Hopkins region – it's been great to visit many landholders and see their projects in the ground. I look forward to getting to know more Landcare members.

Recently, we have started working on reviewing and revising the website – it will have a fresh new look and updated content before the end of the year. We have also been discussing updating the way we distribute the newsletter and other news from Upper Hopkins LMG. Please take a few minutes to contribute your thoughts by clicking on the link to this [quick survey](#), or emailing me directly.

I hope to see many of you on the 10th of September for dinner and discussions at the Annual General Meeting, or on the 18th of October for the end-of-year Gathering with the Maroona Mob.

Ayesha



www.uhlmg.com.au

www.facebook.com/UHLMG



Please help us to cut costs and reduce our impact on the environment.

Nominate to receive your next newsletter **via email** (with color photos) rather than on paper (black & white).
Simply send an email to: ayesha.burdett@gmail.com



The Upper Hopkins Land Management Group is grateful to the Glenelg Hopkins CMA and the Victorian Government DELWP & DEDJTR for their support of group activities and the production of this newsletter.



Spring Bird Page



Clockwise from top left:

A Spotted Harrier was spotted hunting over grass-land by Jack Tucker.

Wayne Suffield has taken more wonderful photos of birds in our region:

- Purple-crowned Lorikeet at Petticoat Gully Road
- White-plumed Honeyeater at Petticoat Gully Road
- Long-billed Correllas and Raven at Warrayadin Road
- Spotted Pardalote at Dobie

Bioindicators for high performing soils

By Richard Murphy, Land Health Coordinator, GHCSA

Cropping regions in western Victoria have the largest yield potential gap in Australia. Addressing soil-based limitations to plant performance could achieve an 80% improvement in productivity. Soil testing to determine macro-nutrient availability to inform fertiliser decisions is an established industry best practice and is well understood and well serviced.

The biological functions of soil that underpin plant performance are not routinely measured. Existing tests can be expensive and difficult to relate to management practice. Soil biological functions –including nutrient (N & C) cycling, disease suppression, and structural building and maintenance – underwrite soil performance and are central in soil monitoring for performance improvements. Improved testing methods for soil biological function that reflect the regional climate and soils are able to inform land management decisions to help farmers build higher and sustainable plant performance systems.

In 2019, the Cooperative Research Centre for High Performance Soils (Soil CRC) has supported a 3-year project to identify indicators of biologically active soil and to use these to design practical tools that measure biological functions in a target cropping area in western Victoria.

On Monday, 22 July, the Upper Hopkins Land Management Group (UHLMG) hosted Soil CRC soil microbiologist, A/Prof Pauline Mele, at Maroona to discuss the proposed ‘Bioindicators for high performing soils’ project with cropping farmers. The event provided the Soil CRC with an opportunity to better understand what bioindicators growers are already using, and provided the 21 farm service providers and growers with information about the project and how they can become involved.

“The Bioindicators Project has potential to help growers in western Victoria monitor soil biological function and modify management to improve biological function and yield,” Pauline explained. “The interest of local farmers and the great potential to really improve productivity has encouraged us to make this area one of the two target areas for the project.”

UHLMG facilitator, Ayesha Burdett was very pleased with the number of farmers who had taken time out of their busy schedules to attend the event. ‘

“We had a really great range of farmers and agronomists come along,” said Ayesha. “The discussion was productive, and the farmers were interested in working with Pauline to become part of the project.”

This event was supported by Glenelg Hopkins CMA through funding from the Australian Government’s National Landcare Program.

“There is increasing interest in utilising soil biological function in farming systems, but you cannot manage what you cannot measure,” said Richard Murphy, Land Health Coordinator with the Glenelg Hopkins CMA. “The tools developed through the Bioindicators Project, will help farmers make more informed management decisions to build soil biological potential and crop yield.”



Victorian Volcanic Plains Stewardship Program, Round 4

By Aggie Stevenson, Senior NRM Planner, Glenelg Hopkins CMA

Glenelg Hopkins CMA is rolling out the fourth round of the Victorian Volcanic Plains (VVP) Stewardship Program. The VVP is recognised by the Australian Government as one of 15 ‘biodiversity hotspots’ across Australia, and within it, the following Ecological Communities (ECs) have been listed as critically endangered:

- Natural Temperate Grassland and Grassy Eucalypt Woodland of the VVP
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains and
- Grey Box Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia

Funding is offered to landholders with good and excellent quality native grasslands, grassy woodlands or seasonal herbaceous wetlands in the VVP bioregion that contain the ECs listed above. The VVP Stewardship Program will provide technical support to landholders, along with a site management plan, site set up costs and annual management payments for five years until June 2023.

The funds will support landholders to manage their sites for biodiversity conservation as well as agricultural production. Some examples of activities eligible for funding include:

- Fencing for better site management

- Alternate stock water
- Pest plant and animal control
- Burning for biomass control
- Supplementary planting

Landholders with grasslands and wetlands will also have the benefit of having a grassland ecologist conduct annual grassland and wetland monitoring, providing valuable information which will be used to inform future management decisions around grazing.

Expressions of interest close Friday 26 September 2019



Seasonal herbaceous wetland, Branxholme. (Photo Ben Zeeman)

Water reticulation workshops

By Clem Sturmfels, Senior Soil Conservation Officer, Agriculture Victoria

Approximately 60 local farmers attended one of the highly successful water reticulation workshops held at Ararat, Tatyoon and Willaura in early August.

“The knowledge of all presenters was excellent, and the workshop was presented in a format that maintained my interest” was typical of the feedback received after each of the three workshops.

The aim of the workshops was to assist farmers with some of the more difficult decisions associated with joining the East Grampians Rural Pipeline; how much extra water do they need, where to locate their main storage tank and how they should go about designing and laying out an effective and efficient water reticulation system.

Each workshop ran for about 6 hours and consisted of a mix of practical exercises and formal presentations. A highlight of the workshops was a presentation by local farmers, Anthony Pola and Steven Start. They both stressed the importance of careful planning and working through the design process in a systematic and scientific way. They also acknowledged the importance of seeking professional advice in the selection of pipes, pumps and other pipeline components.

The workshops were run by Agriculture Victoria with support from GWMWater, Glenelg Hopkins Catchment Management Authority and through funding from the Australian Government’s National Landcare Program.

Further workshops are planned for next year once the design of

the East Grampians pipeline has been completed. For more information contact:

- Clem Sturmfels, Agriculture Victoria - 5355 0535/0429 018 879
- Sarah Tottenham, GWMWater - 5381 9610 /0409 345 558.



Joylene Sutherland, Doug Laidlaw, Peter Armstrong, Richard Murphy (GHCMA) and Michael Morgan discuss the use of some more unusual pipe fittings at the Tatyoon water reticulation workshop. Photo: Clem Sturmfels

Mount William Project

By Sybil Abbott, Mount William Pastoral

Mt William Pastoral has just completed a 3.2 km wildlife corridor on Snake Road which includes a planting of 5 rows of various native trees - 4500 in total.

We received a grant with the generous support of our local land care group upper Hopkins facilitated by Una Allender. Her advice and counsel during the project was very valuable.

We sourced the trees and guards from Arborline in Hamilton through the very knowledgeable manager Samantha. We also used Possum Cameron to deep rip the lines in his customary perfect starlight rows in the summer when it was dry. Once my husband Matt and his dad Arthur had put in all the posts, the Landmate Crew came along to pull wire and put droppers on.

Taking on a project of this size would have been impossible for us without the help of the Landmate Crew. The crew is managed by Andrew Marx and supervised by Andrew Thompson. They are expert in the field of fencing and tree planting. Their efficiency and professionalism was amazing.

We sprayed the area twice once the autumn break finally came and then the Landmate Crew came in and planted out the site, taking only one week to do so.

Mt William has used the Landmate Crew over the years to do many large-scale tree planting projects and all of them have been a great success. This crew is a very valuable asset to us as

local farmers and we recommend contacting them if you are doing a Landcare project in the future.

We are now looking forward to watching the trees grow!



The Landmate Crew was an important component to complete this massive tree-planting project. Photo: Andrew Marx

Want to do a big Landcare project?

There are a number of tax rebates available to primary producers who undertake landcare works. You can find out more on the [ATO website](#).

East Grampians Rural Pipeline Project

By Adele Rohde, Manager Communications and Engagement, GWMWater

Rural communities within Ararat Rural City, and the Pyrenees and Northern Grampians shires are primarily reliant on rainfall runoff for their water supplies. During the prolonged droughts of the past decade, water security and access have been severely impacted.

GWMWater, in partnership with Ararat Rural City, Pyrenees Shire and the Northern Grampians Shire councils, are committed to construct a stock and domestic water supply pipeline in the East Grampians region.

The East Grampians Rural Pipeline will increase productivity and diversity across agricultural sectors, enhance community wellbeing, safety and resilience as well as reduce pressures on already highly stressed natural catchments.

A piped water supply would also provide ongoing water security for townships in the region as well as significant economic, social, recreational and environmental benefits to the region.

Landholders interested in receiving a rural untreated water supply in both the full and reduced project areas are encouraged to submit an expression of interest form to assist with planning the route and location of connection points.

Our Land Liaison team will work with you to understand your water needs and support you through the next steps.

Please feel free to contact the Land Liaison Team at GWMWater or call 1300 659 961.

GWMWater's Land Liaison Team talking with a local landholder about his on-farm water requirements (Photo: GWMWater)



Climate emergency: What can we do?

By Don Rowe

If we continue produce greenhouse gases the way we are it seems certain that the Earth's temperature is going to increase by at least 2° in the foreseeable future. This will be disastrous for all plants and animals as they will have no time to adapt. Obviously, the increasing human population exacerbates the problem.

After watching "Climate change: the facts", hosted by David Attenborough on the ABC (11/8/2019), I feel very worried about the future for our grandchildren. What environmental challenges are they going to have to cope with?

We can already see the effects of climate change so it is imperative that we all do our bit to try and do something about it. After watching Attenborough, it seems that we are powerless to have much effect but we owe it to future generations to have a go. As an affluent society we have the means to set an example for others. This is especially important as our government does not see climate change as a priority.

So, what can we do?

There are many ways we can reduce our carbon footprint in households but this is not enough as we are still releasing some greenhouse gases.

We all should be aiming to be carbon neutral but it would be good if we could sequester more carbon than we release. As landholders we are in an ideal position to lead the way.

The agriculture sector produces a significant proportion of greenhouse gases so you would expect it will soon be targeted to take action. We need to be taking carbon out of the atmosphere.

Soil is the largest carbon sink over which we have control and as we increase the organic content of our soils we get other

productivity gains (our group has had several speakers on this topic). So, we need to be managing our soils to increase organic content but it takes time.

Jigsaw Farms (a large farming enterprise just north of Hamilton) have shown it is quite feasible and profitable to make your operating farm carbon neutral. They run a high-input, high-stocking rate enterprise and have been carbon neutral since 2011. Nineteen percent of their farm is committed to biodiversity, carbon and agroforestry plantations (Weekly Times 10/7/19). While doing all this they have been able to double their food and fibre production.

So, part of the answer is to plant trees as growing trees absorb much more CO₂ than they produce and there are plenty of studies that show you can have at least 15% of your property set aside for revegetation without effecting productivity. And by now we all realise the many benefits of biodiversity plantings, other than sequestering carbon (where have animals been sheltering on these cold, windy days?).

As you drive south of Ararat towards Maroona and Tatyoon, the landscape has changed so much in the last 30 years. When we planted all those trees we didn't realise we were helping to combat climate change! Now we know their importance we should all be out planting trees and planning revegetation projects on our properties.

At *Sidlaw*, most plantations have been direct seeded as it's the easiest way to go and the Upper Hopkins Land Management Group has two machines available. It's probably a bit late for this year but we will organise a demo at our end of year function for those interested.

It has been a fantastic year for tree planting and you could still put a few in. It doesn't take many trees to offset the emissions from your vehicle!

Perennial Pasture Systems: 11th Annual Conference

By Rob Shea, Project Manager for Perennial Pasture Systems

The Perennial Pasture Systems (PPS) independent farmer group will be conducting their 11th Annual PPS Conference at the Gum San Chinese Heritage Centre; Ararat on Wednesday September 11th 2019 commencing at 8.45.

The PPS group is continuing to bring productive and sustainable pasture research and extension to the region and the annual conference forms a vital part of the group's calendar.

This year's conference is taking a theme around risks to farm profitability and is titled "Risk strategies to reap the rewards - "Adaptive management to reduce risk"

President Tony Roberts explains "We have lined up a range of quality speakers for the day as well as a visit to a highly productive PPS member farm."

This year's seminar speakers include - leading consultant Cam

Nicholson looking at the question of adopting change to deal with risk. Dr Kevin Foster from the University of W.A. dealing with risks and opportunities in clover based pastures. Andrew Whitelaw will look at feed supply cost management while Mick Taylor from Meat & Livestock Australia will be presenting a look at risks to the future of the sheep meat industry. Leading farmers: Tom McGuinness from Bigga NSW and Jason Pymmer from Wonwondah will put in plain words how they manage risk in their enterprises.

A farm tour to a PPS member farm at Great Western will complete the day session.

At the conclusion of the conference there will be a dinner at the Chalambar Golf Club, Ararat with Les Gason from farm machinery company A F Gason P/L as guest speaker.

Tickets can be booked through trybooking.com [online](#) or contact Project Manager, Rob Shea, 0438 521 357.

Tussock Marching Across Western Victoria

Ivan Carter, Communication Officer, Victorian Serrated Tussock Working Party



A large infestation of serrated tussock in a grazing paddock near Bacchus Marsh Victoria (Photo: VSTWP).

Now is the time to check your property for the noxious weed serrated tussock (*Nassella trichotoma*).

Serrated tussock has been spreading across Western Victoria over the past decade. The recent rains and warm winter in some parts of Victoria has been good for crops, but unfortunately, also good for the growth of serrated tussock. Controlling serrated tussock before the plant goes to seed is critical to prevent further spread, lost productivity and increased control requirements.

Serrated tussock has been found at a number of sites across Western Victoria, with the largest being around Hamilton and Landsborough, which has been worrying local farmers and landowners.

Infestations are also known to exist at Stawell, Ararat, Dunkeld, Lake Bolac and Glenorchy. The known infestations in western Victoria are mostly being treated by landowners, in coordination with Agriculture Victoria, but it is feared there may be many more infestations that are not yet identified

across the region.

It's believed serrated tussock now covers more than 240,000 hectares of land in Victoria. Large infestations require ongoing management and the integration of several control techniques. Each mature serrated tussock plant can produce 100,000 seeds in a season, blowing up to 20 kilometres from the parent plant.

The Victoria Serrated Tussock Working Party (VSTWP) advise land managers that having competitive pasture and good ground cover is one of the most important aspects to weed management.

"Serrated tussock is a prime example of a weed that does not like competition and well-established pastures," VSTWP, Community Engagement Officer, Ivan Carter said.

Controlling serrated tussock before the plant goes to seed is critical to prevent further spread, lost productivity and increased control requirements. Control can be achieved through the use of registered herbicide, manual removal or cultivation.

"We advise land managers to conduct surveillance for serrated tussock on a regular basis and watch out for new infestations that may be blown in or introduced through fodder".

Before flowering serrated tussock has a lime green appearance. When flowering the flowerheads have a distinctive purple colour developing as the seeds ripen in late spring and early summer. "These features help serrated tussock stand out from the native tussock grasses," Mr Carter said.

"Serrated tussock has a fine leaf and will roll smoothly between the index finger and thumb, while native tussocks feel as though they have flat edges," Mr Carter said. "The leaves also feel rough when you run your fingers downwards due to fine serrations."

The VSTWP has developed an online video and information sheet to help landowners identify the unwanted grass, at www.serratedtussock.com

For further information, please visit www.serratedtussock.com, or contact the VSTWP on info@serratedtussock.com



Do you have a wetland on your farm?

Funding is now available for wetland protection in the Upper Hopkins catchment area.

The Glenelg Hopkins region contains 44% of Victoria's wetlands. Many of the wetlands are on private property and are managed by private landholders.

Glenelg Hopkins CMA has secured Victorian Government funding to work with landholders in the Upper Hopkins catchment to help protect and restore these valuable areas in 2020.

Expressions of interest are now sought from private landholders to undertake funded management actions to protect wetlands in the **Darlington, Lake Bolac, Ararat and Beaufort areas** within the Upper Hopkins catchment.

To register your interest, contact Tania Parker at Glenelg Hopkins CMA on 5571 2526 or t.parker@ghcma.vic.gov.au

Expressions of interest close Friday 27 September 2019.

VG9358

2020 Science and Innovation Awards

Applications are now open for this competitive annual grants program recognising and assisting young Australians aged 18-35 by funding projects that will benefit Australia's primary industries. Visit the Science and Innovation Awards [website](#) for more information and apply before Friday 4 October 2019.

Women on Farms Integrated Weed Management: Workshop 3

All welcome—free workshop from [Southern Farming Systems](#)

Mininera: 10 September, 9.45-3.00pm (lunch included)

RSVP by 6 Sept to [Michelle McClure](#): 0488 600 692

This project is supported by Glenelg Hopkins CMA through funding from the Australian Government's National Landcare Program



Saline wetland at Pura Pura (photo – Tania Parker)

Grampians: Decarbonising Victoria

The Grampians region of Western Victoria is developing a Roadmap to Zero Emissions (R2Z) for supercharging the renewable energy system in Australia. The project will underpin new jobs and the decarbonising of Victoria.

The Grampians New Energy Taskforce (GNeT) has commissioned the Victorian based and nationally recognised think tank group; Beyond Zero Emissions to develop Australia's first regionally focused 'Roadmap to Zero Emissions' (R2Z). The R2Z will envision and guide the decarbonising of the complete Grampians region, which includes Ballarat, Central Highlands and Wimmera Southern Mallee.

GNeT have been working with the Australian Energy Market Operator (AEMO) who have now recognised the Grampians region as one of Australia's key renewable energy zones. AEMO anticipates that 5,000 MW of wind and solar renewable energy could be supplied to the national electricity grid from this part of Western Victoria by 2025.

GNet Chair Mr Stuart Benjamin says that while there are currently over \$3 billion worth of wind and solar construction projects in planning or under construction in the Grampians region, creating over 2,000 construction jobs that are secure for the next three years, what next.

"What happens next, what else can we do to not only be 100% renewable but also a leading zero-carbon region in the future? How can we leverage long-term regional benefit and new jobs by supporting the transition of the grid to a renewable energy system?"

"The R2Z will help us think further ahead and explore how we can develop a zero-carbon economy to benefit our region while supporting all Victorians to reduce carbon emissions," said Mr Benjamin.

Beyond Zero Emission plans to deliver a 'For Discussion' version of the R2Z or Grampians Roadmap to Zero Emissions for comment and consideration by late August 2019.

The Roadmap will assist Western Victorians to understand and influence renewable energy options as well as contribute to, and benefit from, an improved energy system and a more secure zero-carbon environmental future for all Victorians.

GNet is inviting Western Victorians to contribute their ideas, concerns and comments to the Roadmap via an [online portal](#).

For more information contact Carlee Grant on 0407 048 904

A movie night for a brighter future. What is your 2040?

By Andrea Mitchell, Project Platypus

As an initiative of Project Platypus Upper Wimmera Landcare Network, and with the support of Ararat Landcare Group, Upper Hopkins Land Management Group, Beyond Bolac Catchment Action Group and Grampians Pyrenees Primary Care Partnership, the hybrid documentary **2040** was brought to the big screen at the Astor Theatre in Ararat. The event held on July 30th was well supported with approximately 100 people attending.



The movie shed light on the climate change mitigation technologies that we can develop and implement now to produce a better future, full of possibilities. The movie provided examples of hope such as: a community in Bangladesh that shared solar energy to avoid the need for a large provider; a project of sequestering carbon through 'farming' sea-weed which could grow by half a metre per day; and farmers that were using regenerative agriculture to grow healthier soil, crops and livestock – which also helped store carbon.

There were poignant moments in the film where the camera focused on children's faces as they spoke about their hopes for the future. The raw honesty from the children made the audience aware of the need for climate action now. To live in hope is to take decisive action. What is your 2040?

Training for citizen scientists

By Annie Hobby, Natural Environment Program Officer,
Department of Environment, Land, Water and Planning

The Natural Environmental Program team will be running training for three tools in Horsham and Ararat this September.

- [VBA Go](#) is the mobile recording tool for the Victorian Biodiversity Atlas.
- [NatureKit](#) a tool to map and report on Victoria's biodiversity values and investment prospects.
- [Strategic Management Prospects](#) (SMP) is the newest tool designed to help land managers identify where cost effective actions for biodiversity occur.

For more information please contact Annie Hobby: annie.hobby@delwp.vic.gov.au

Gardens for Wildlife Pilot Program

Gardens for Wildlife is a program that aims to make gardens a place that supports the local, native plants and animals by encouraging gardeners to plant native species and provide natural habitat features. A new group based around Stawell and Ararat is starting a pilot program. The goal is to conduct garden visits to interested residents and offer practical advice on what species to plant and where to attract wildlife such as native birds, lizards and insects. The pilot will be run as a collective with support from Grampians Australian Plant Society, Ararat Rural City Council, Friends of Grampians Gariwerd, Project Platypus, Stawell Urban Landcare, Upper Hopkins Land Management Group, Yarrilinks and DELWP.

For more information about the program, go to [Gardens for Wildlife Victoria](#).

Spring photo board



Photos from top to bottom:

Rainfall in early August filled up rivers and wetlands in the area. Fiery Creek was filled to the brim at Streatham. (Photos: Lea Clark)

A couple of weeks later, the water levels in the Fiery Creek had dropped at the Streatham gauge but it was still flowing rapidly over the weir. (Photo: Howard Brandenburg)

The Hopkins River also filled in early August (Photo: Paloma Brandenburg), prompting some to take to the water on the Half Way Gully bridge. (Photo: Ayesha Burdett)

Pauline Mele put the audience to work during the Soil Bioindicators workshop at Marroona. (Photo: Ayesha Burdett)



Meanderings and reflections

This was my first tour of the water monitoring sites in the Upper Hopkins. After two days of driving and exploring rivers, I have a renewed admiration for Una's youthful enthusiasm and athleticism.

As a freshwater ecologist, it was great to spend some time in the landscape and get just a little bit wet, while admiring the diversity of habitats in our rivers and creeks. The birds were starting to get busy at this time of year, and lots of flowers were blooming.

Delacombe Way—Edgarley Bridge. Photo: Howard Brandenburg



Water results : Upper Hopkins River, Upper Fiery Creek and Upper Mt Emu Creek catchments

EC levels for livestock water supplies. Value given in brackets for each type of livestock is the EC level at which production decline begins: Beef cattle (6,200 EC $\mu\text{S/cm}$), lactating ewes and weaners (6,000 EC $\mu\text{S/cm}$), dry sheep (9,300 EC $\mu\text{S/cm}$), horses (6,200 EC $\mu\text{S/cm}$), Pigs (3,100 EC $\mu\text{S/cm}$), poultry 3,100 EC $\mu\text{S/cm}$).

Stream	Road where site accessed	EC ($\mu\text{S/cm}$) June 2019	EC ($\mu\text{S/cm}$) April 2019	highest	lowest	average
Good Morning Bill Creek	Buninjon West Road	5000	5280	39000	300	11052
Hopkins River	Bridge on Labrador Road	337	2990	11200	337	5967
Hopkins River	Robertsons Bridge (Langi Logan Rd)	327	1520	13000	327	4675
Hopkins River	Tatyoan Road (sth Kangaroo Pt Rd)	3670	3030	13800	780	4611
Hopkins River	Burrumbeep Boundary Road	3950	3690	11700	330	5296
Hopkins River	Jacksons Creek Road	4020	4200	12100	340	6156
Hopkins River	Warrak Road (Hopkins River Road)	6500	1608	23280	490	8864
Hopkins River	Wickliffe - Glenelg Highway	2630	7700	19000	1590	10571
Hopkins River	Back Bolac Road	2760	7290	29600	1620	11713
Hopkins River	Delacombe Way (Edgarley Bridge)	2800	4780	17400	1790	9639
Hopkins River	Rossbridge (bridge)	3750	4950	13700	820	8169
Hopkins River	Old Geelong Road	2620	1084	16300	500	8265
Hopkins River	Dobie Road	3520	1650	15900	160	5747
Hopkins River	Bald Hill Road ford	2890	5690	31800	1980	10678
Hopkins River	Helendoite Road	299	1935	10800	299	5673
Challicum Creek	Porters Bridge Road	1666	6080	26680	145	11088
Fiery Creek	Porters Bridge Road	1235	4430	11930	550	5384
Fiery Creek	Mt William Rd (east Travellers Rest Rd)	1107	3410	5950	500	2328
Fiery Creek	Gordons Bridge Road	1229	5440	17560	530	4946
Fiery Creek	Runway Swamp Road	2450	4980	14520	860	5053
Fiery Creek	Streatham Reserve	2230	6650	11600	770	4395
Fiery Creek	McCrows Rd/Nerrin Nerrin Estate Rd	2730	6700	13770	780	7510
Fiery Creek	Lake Bolac	3540	6990	22280	850	7902
Lake Bolac	Fishermens Pontoon	3710	10890	53000	1410	10531
Middle Creek	Willowtree Road	368	533	3700	100	446
Trawalla Creek	Back Waterloo Rd, bridge	pending	1630	15300	400	2637

Stream	Road where site accessed	EC (µS/cm) June 2019	EC (µS/cm) April 2019	highest	lowest	average
Lake Buninjon	Maroona - Glenthompson Road	9090	12680	104000	880	16078
Green Hill Lake	Western Highway entrance	1917	3100	28800	340	6340
Captains Creek	Tatyoan North Road	235	164	3500	100	501
Jacksons Creek	Coopers Road	244	1216	15900	244	8393
Tatyoan drainage line	Rockies Hill Road	3460	7820	28200	360	14463
Three Mile Creek	Warrayatkin Road	17420	1827	22400	600	7855
Three Mile Creek	Warrak Road	2520	no sample	13600	390	2482
Cemetery Creek	Warrak Road	905	320	9620	130	1015
Billy Billy Creek	Buangor	261	306	8060	200	1032
Mt Emu Creek	Trawalla Bridge	pending	1281	6400	440	1820
Mt Emu Creek	Streatham-Carngham Road	pending	1856	12200	130	2707
Mt Emu Creek	Mt Emu Settlement Road Bridge	pending	1735	11490	390	5250
Mt Emu Creek	Skipton pedestrian bridge	pending	2510	7900	440	4572

Clem Sturmfels DEDJTR Ararat - 5355 0535	Soil conservation, incentives and whole farm planning
Ayesha Burdett - 0429 021 500 ayesha.burdett@gmail.com	Facilitator - Upper Hopkins Land Management Group, Ararat Landcare Group
Glenelg Hopkins CMA — 5571 2526	Waterways, Wetlands, Works on Waterways Permits
Jack Tucker — 0427 547 636 or 5354 6277 Carole Mules - 0408 708 361 Celia Tucker — 0409 138 581 or 5354 6277	Chair, Upper Hopkins Land Management Group Secretary, Upper Hopkins Land Management Group Treasurer, Upper Hopkins Land Management Group
Deidre Andrews Ararat Rural City— 5355 0233	Ararat Rural City Council Waste and Sustainability Coordinator
Rob Shea —0438 521 357 Debbie Shea — 0418 205353	Facilitator, Perennial Pasture Systems Facilitator, Girls & Grass Advisory Group, Perennial Pasture Systems
Adam Merrick — 0458 965 333 adamm@fn.org.au	Trust for Nature - Conservation agreements, grants, biodiversity technical advice
Jileena Cole — 0428 341 869 beyondbolac@outlook.com	Facilitator—Beyond Bolac Catchment Action Group (BBCAG)

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Change of Address?

Please contact Ayesha Burdett to update your address or provide an email address

If undelivered please return to 133 Burdett Lane, Wickliffe VIC 3379

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Canola in bloom (Photo: Ayesha Burdett)