Mallee Farmer

ISSUE #25 WINTER EDITION 2025

Featuring

Private land stewardship in the Millewa

Finding love via Farmer Wants a Wife

Building better breaks with crop rotations

Sustainable soils and stubbles to boost production

Autumn observations: Monitoring wind erosion and land management

And much more.

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Front cover photo:
Matt Curtis at Boy Creek.

Acknowledgement of Country
Mallee CMA acknowledges and respects Traditional Owners, Aboriginal communities and organisations. We recognise the diversity of their cultures and the deep connections they have with Victoria's lands and waters. We value partnerships with them for the health of people and country.

Mallee CMA pay their respects to Elders past and present, and recognise the primacy of Traditional Owners' obligations, rights and responsibilities to use and care for their traditional lands and waters.

Chair's Report

Welcome to this issue 25 of Mallee Farmer – your insight into the latest dryland farming research, training, trends and programs in the Mallee.

In this special edition, you can read about a range of locally relevant, important topics including:

- How the "Our Catchments, Our Communities" program is helping private landholders deliver important riparian improvement works along the Murray River and the creek systems within the Millewa;
- Carbon, Soils and Emissions Workshops in Hopetoun and Sea Lake;
- An interview with Farmer Wants a Wife's Mildura contestant Chelsea Jury, and;
- An overview of the Department of Energy, Environment and Climate Action Weeds at the Early Stage of Invasion (WESI) Project, which aims to control and limit the spread of invasive species through landscape scale weeds and pest animal projects.

As always, thank you to everyone who has contributed to this edition. We greatly appreciate the support of numerous government agencies, researchers, the Mallee community, and you – the reader.

We aim to make every edition of Mallee Farmer informative, interesting and diverse for all our readers.

If you have feedback on this edition, would like to contribute or have thoughts on how to improve this publication, don't hesitate to send the Mallee CMA team an email at info@malleecma.com.au

Until next edition,

Allison McTaggart
Chair
Mallee Catchment Management Authority.

Corrective note: Acknowledgements in Lentil Article
In the previous edition of Mallee Farmer (Issue #24, Autumn Edition 2025), The article 'Lentils in the Mallee: Variety options and weed management' failed to acknowledge the leadership and ongoing support of Agriculture Victoria and the supply of a new lentil breeding line from the GRDC funded, Agriculture Victoria lead, Australian Lentil Breeding Program. The author's, Jason and Michael, want to sincerely apologise for this oversight. Acknowledgements have since been amended to reflect Agriculture Victoria's significant role in the research.

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Spotlight on stewardship support

By Ashlee Winton, Mallee CMA

Derrick Boord, from Mallee CMA, and Millewa farmer Matt Curtis
Photo: Mallee CMA

For third generation farmer Matt Curtis, putting his hand up for the Mallee Catchment Management Authority (CMA) stewardship program meant he was able to finish an important job that may not have seen completion otherwise.

Matt calls Boy Creek, Wargan, approximately 35kms West of Mildura, his home.

"I've been here all my life, I don't really know anything different, and I couldn't imagine anything different to be honest," he said.

It's perhaps that deep generational tie to the land that makes Matt so passionate about the sustainability and future of Boy Creek.

"Back in 2022, we started planting a variety of Black Box, Mallee and Belah trees on the property – it was looking pretty dry and shabby as a lot of the original Box trees had died," he said.

"We felt it was important to replace them, to bring it all back to life a bit and regenerate the area."

But Matt soon found, despite his best efforts, the newly planted trees didn't stand much of a chance against pest animals and livestock.

"The trees were being eaten by sheep, trampled by kangaroos, all sorts of things," he said.

"What they needed to be able to survive was protection, but anyone in farming can tell you fencing is an expensive and time-consuming operation.

"It's important, but not always possible to get done when you also have the day-to-day operations of a farm to think about."

That's where the Mallee CMA stewardship program came in, providing Matt with not only the funding to be able to protect and preserve the riparian zone along the creek line, but also the resources needed to make it easy.

Through funding from the Victorian Government, Mallee CMA has four years (2024 - 2028) of funding to deliver the "Our Catchments Our Communities" program.

The funding is used for stewardship agreements between Mallee CMA and private landholders to deliver riparian improvement works along the Murray River and the creek systems within the Millewa.

Landholders eligible for management agreements must adjoin waterways or floodplain areas and be able to demonstrate waterway improvements through funded works. Investment is provided to landholders to deliver activities detailed within the management agreements, including:

- Pest plant and animal control, to reduce grazing pressure on native vegetation;
- Revegetation, recovering denuded landscapes, improving water quality, providing food and habitat for native animals, and reducing wind erosion;
- Exclusion fencing to manage grazing impacts on riparian areas. This will enable native vegetation to regenerate and reduce the threat of wind erosion.

For Matt, it's meant having the ability and resources to fence off a stretch of the creek line on Boy Creek, without being out of pocket either financially or with his time.

"The team at Mallee CMA have made being a part of the stewardship program really easy," he said.

"To be honest, it's not a program I would have put my hand up for ordinarily – a lot of these government programs can be hard work and hard to apply for. Most of them end up being a 50/50 cost split situation, or the farmer has to provide the labour, which takes away time from your farm duties.

"The Mallee CMA stewardship program is different, you're never left out of pocket, you don't have to front up the money and then wait months on end to be reimbursed.

"Mallee CMA take care of everything – from support and advice with contractors down to the paperwork. All I had to do was sign the dotted line, it was made really easy and that was what sealed the deal for me."

Matt said the benefits of the work undertaken at Boy Creek as part of the program were immediately visible, and he now plans to fence off a larger area along the creek line under the program.

"Putting in the fencing has protected this riparian zone, for sure," he said.

"It's given these trees a fighting chance. You can see the damage to the trees planted outside the fence zone – they're literally gone the next day, eaten by the sheep or other animals.

"But the ones that are fenced and protected, they're thriving and will hopefully be here for many years to come.

"It's really rewarding to go for a walk down there and see those little trees growing – it brings in native birdlife and animals, changes the landscape and it makes you feel really good about doing something for the future and sustainability of your land."

A riparian zone is land directly adjacent to a body of water, such as a river, creek, lake, or wetland. It's a transition area between terrestrial and aquatic ecosystems, often characterized by unique plant and animal life.

These zones are crucial for maintaining healthy ecosystems and providing various benefits, including:

- **Habitat and wildlife: Riparian areas offer diverse habitat for plants and animals, supporting a wide range of species**
- **Soil erosion control: Riparian vegetation stabilizes streambanks and floodplains, preventing erosion**
- **Threats: Riparian zones are vulnerable to degradation from human activities such as clearing for agriculture, urban development, and changes in water management practices**
- **Restoration: Restoration efforts can involve planting native vegetation, controlling grazing, and managing water flow to improve the health of riparian areas**

This is where the stewardship program supports landholders with riparian zones on their properties with information and government funding to be able to protect and maintain a healthy ecosystem on private land.

How can I learn more?
For more information on this or any of the Mallee CMA's projects:

Follow @MalleeCMA on Facebook or Instagram
Visit our website at www.malleecma.com.au

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Find us at Cnr Koorlong Avenue and Eleventh Street, Irymple.

Stewardship with private landholders is supported by the Victorian Government through the Our Catchments, Our Communities program.

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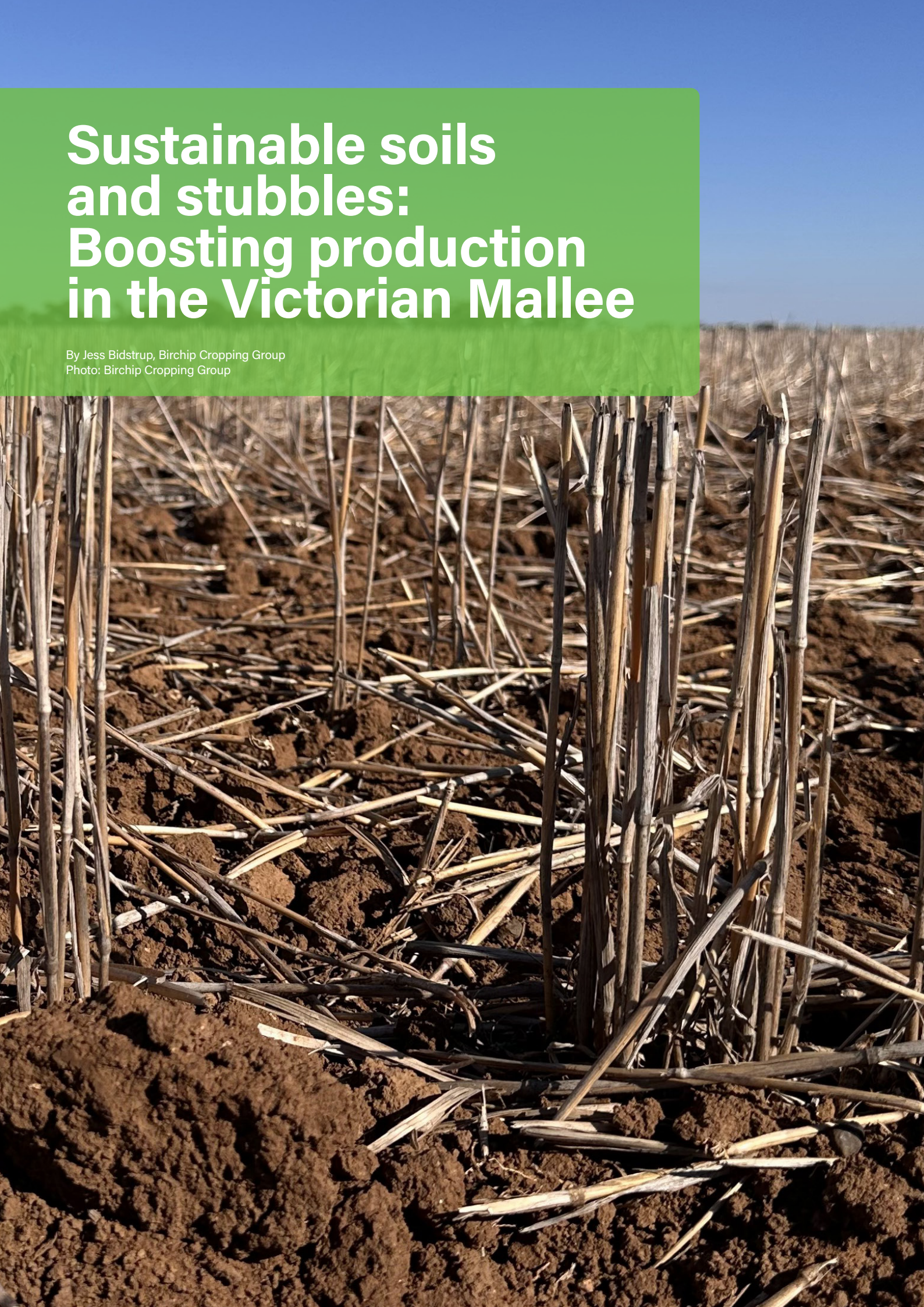
Our Catchments, Our Communities

VICTORIA State Government

Sustainable soils and stubbles: Boosting production in the Victorian Mallee

By Jess Bidstrup, Birchip Cropping Group
Photo: Birchip Cropping Group



The Mallee's light, sandy soils have always demanded careful management, but with the impacts of climate change becoming more evident – increased variability brings less predictable rainfall and warmer seasons, making it more difficult to maintain adequate groundcover – the challenge of protecting this fragile landscape has grown.

In response, a new four-year project led by the Mallee Catchment Management Authority (CMA), in partnership with Birchip Cropping Group (BCG), Mallee Sustainable Farming (MSF), and Agriculture Victoria, is working to help dryland farmers in the Victorian Mallee adapt and thrive while caring for their most valuable resource: soil.

The case for change

Organic carbon levels in Mallee soils are naturally low, ranging between 0.2 and 1.5%, and largely influenced by soil type, from sandy loams in the north to clay loams and heavier soils in the south. Decades after initial clearing and cultivation, research suggests that soil organic carbon (SOC) stocks may still be in decline. Simultaneously, erosion risk remains high, especially on lighter soils, and is strongly influenced by both management practices and climate conditions.

While growers have already adopted many beneficial changes such as improved rotations, reduced tillage, and groundcover retention, maintaining consistent groundcover remains a challenge, particularly in dry years or where high stubble loads create management difficulties.

The result is greater vulnerability to wind erosion, declining soil health, and costly dust storms that affect both farming operations and surrounding communities.

A targeted response

This project seeks to build resilience across Mallee farming systems by enhancing productivity and sustainability together. A key focus is soil and stubble management to enhance soils, which continues to be a practical challenge for farmers.

BCG is leading the project's soil and stubble component, reviewing current practices including mechanical and amelioration methods, through an environmental and economic lens. Through grower discussion, the project aims to better understand what drives decisions and where knowledge gaps may lie.

Importantly, the project recognises that stubble issues don't occur in isolation. A more holistic approach is being taken, where a range of agronomy tools are proactively applied. This approach aims to help growers manage biomass effectively, regardless of the season.

Ten demonstration sites are being established across the region to validate a suite of alternative practices that can improve sustainability, productivity, and profitability in low rainfall systems. The focus is on growing productive crops and managing biomass in a way that also protects the soil and retains nutrients, while understanding the implications for carbon emissions.

Collaborative extension

Results and findings will be extended to the wider farming community through field days, workshops, and publications, ensuring growers have access to locally relevant, tested strategies.

Alongside BCG's work on stubble, MSF will lead activities around legume-based cropping systems, offering nitrogen benefits, carbon inputs, and diversity, and Agriculture Victoria will focus on wind erosion and land management research. Mallee CMA will provide overall coordination and support across the program.

Together, these organisations aim to help growers make informed decisions that not only improve their bottom line but also protect the natural capital on which Mallee farming depends.

A shared goal

At its heart, this project is about balancing production and protection: growing healthy crops, building soil health, understanding emissions, and looking after the land for future generations.

For Mallee farmers, that means continuing to adapt by exploring new practices, fine-tuning existing ones, and working together to shape a more resilient farming landscape.

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This project is supported by the Australian Government through funding from the Natural Heritage Trust under the Climate-Smart Agriculture Program.

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Building better breaks: Long-term trials to refine crop rotations in the Mallee

By Nick Paltridge, Mallee Sustainable Farming
Photo: The Gol Gol break crop trial in 2022, Mallee Sustainable Farming

Cropping systems in the Mallee have evolved dramatically over the past 30 years.

Traditionally, cropping practices were highly conservative, with one to two years of mechanical fallow between cereal crops. Legume pastures were also used to build soil fertility and support livestock between cereal phases. In the first one-two decades of the 2000s, cropping systems advanced to include no-till farming, new herbicides, summer weed control and bigger machinery, which made it feasible and more profitable to crop a greater proportion of land each year. On many farms, rotations moved towards continuous cropping with cereals. This led to major gains in production and improved ground cover, but also led to an increase in grassy weeds and declining fertility.

Over the past decade, there has been further refinement of cropping rotations, with some farmers – particularly continuous croppers – increasing the diversity of rotations. Legumes such as chickpea, field pea and vetch, and more recently lentil, have been included to fix nitrogen in soil, and disrupt pest, disease and weed cycles that would otherwise build up with continuous cereal crops (as such, these crops are referred to as 'break crops'). Chickpea, field pea and lentil are usually harvested for grain, while vetch is often cut for hay. In some cases, vetch or field peas are terminated early ("browned out" in late winter) to preserve moisture in soil for a cereal crop the following year.

Though some growers in the Mallee are confident in the use of legume-based break crops, key questions remain for many growers over which rotations are most profitable, and the impacts on soil fertility and ground cover. Rising nitrogen fertiliser costs and the growing pressure to reduce greenhouse gas emissions are also driving interest in growing legumes and understanding implications for whole farm fertiliser use. How much nitrogen is each break crop fixing, and will N fertiliser still be needed in a subsequent cereal crop?

Recognising the need for region-specific data, Mallee Sustainable Farming teamed up with Frontier Farming Systems in 2020 to support a long-term break crop trial site at Gol Gol in southern NSW – a trial which is now entering its fifth year – and, with the support of the Mallee CMA, is setting up another long-term rotation trial in the Millewa this year.

Learnings from Gol Gol

The Gol Gol trial site is located in southwestern NSW and includes six different break phases (lentil, vetch hay, vetch brown manure, medic pasture, oaten hay, chemical fallow), followed by wheat then barley (i.e., six different rotations).

To average out seasonal variation and ensure no one crop is favoured or disadvantaged by one good or bad season, each phase of each rotation is being sown every year over six seasons. Different levels of

Sowing the Millewa long term trial site in 2025
Photo: Mallee Sustainable Farming

N fertiliser (10, 30, 50 and 70 kg/ha) are also being applied to the cereal phases to provide information on what rates of N fertiliser are most profitable, and impacts of different N rates on soil N and carbon levels.

Results are in for the period 2020-2024, with key results as follows.

- Break crops yielded around 2 t/ha DM in 2024, except for oaten hay which yielded 2.9 t/ha and medic pasture 1.3 t/ha; vetch grain yielded 0.44 t/ha.
- Wheat crops yielded around 2 t/ha in most rotations, with 30 kg/ha of N enough to achieve close to maximum yield.
- Barley yielded 1.6 to 2 t/ha across most rotations, in sequences that included a break with early termination during the wet spring/summer of 2022.
- Based on a gross margin analysis across five years (2020 to 2024), the cropping sequence with lentil as the break phase was 24% more profitable than all other rotations ($624/ha), with vetch hay and oaten hay the next best ($505 and $477/ha, respectively; rotations with fallow vetch brown manure was the lowest ($344/ha).

  These results were average values across all levels of N application, and highlight the importance of having a profitable break crop in the rotation.

- Regarding optimal rates of N fertiliser, gross margins were maximal for all rotations where N input was 30kg/ha, but at this rate only the medic pasture and vetch brown manure treatments had a positive N balance over the five years of the trial. This means all other rotations exported more N through grain and hay than was replaced by N fixation and fertiliser. To achieve a balanced system, around 50 kg N/ha would need to be applied to cereals in rotations that included lentil and vetch hay, and 70 kg/ha would be needed on cereals in rotations with oaten hay or chemical fallow as the break.

A more comprehensive write up of the trial will be conducted once two full cycles of the three-year rotation have been completed, including final assessment of soil N and organic matter.

Setting up a long-term trial in the Millewa

Recognising the insights from Gol Gol, but also the need for regionally specific trials in different parts of the Mallee, Mallee CMA is now investing in a new four-year break crop project in the Millewa region of north-western Victoria. Given the need to maintain profitability, as well as achieve N balance in continuous cropping systems without increasing rates of N fertilisers, this trial will compare a range of rotations with high legume intensity (two legumes in four years) and therefore high N fixing potential (Table 1). Research questions include: What legume-focussed rotations are most profitable? What are the implications of different rotations for long term soil fertility and soil carbon? And what rotations are most resilient across variable seasons?

Table 1. Rotations to be tested in the Millewa.

	Phase			
Rotation	**1**	**2**	**3**	**4**
1	vetch hay	wheat	lentil	barley
2	lentil	wheat	lentil	barley
3	field pea	wheat	lentil	barley
4	field pea	lentil	wheat	barley
5	GIA Metro lentil	wheat	vetch BM	barley

As in the Gol Gol trial, monitoring will include grain yield, ground cover, gross margins and levels of soil N and carbon. All phases of all rotations will be sown each year from 2025 to 2028 to provide insights across variable seasons.

Michael Moodie, from Frontier Farming Systems, speaking to farmers about fertiliser rates at Gol Gol in spring 2022
Photo: Mallee Sustainable Farming

Michael Moodie, from Frontier Farming Systems, speaking to farmers about fertiliser rates at Gol Gol in spring 2024
Photo: Mallee Sustainable Farming

Additional simple agronomy demonstrations on topics like seeding depth, water use efficiency, P fertiliser rates and the potential value of cereal/pulse intercrops will also be included at the site to provide a framework for discussions with farmers on best practice agronomy.

Key messages

In both NSW and north-western Victoria, trials are being carried out to investigate the profitability and sustainability of different cropping rotations including different break crops.

Based on five years data at Gol Gol, the most profitable rotation was lentil followed by two cereals – but higher rates of N fertiliser than are generally applied are needed for this rotation to achieve net N balance.

A new long-term trial is being set up in the Millewa to explore the profitability and sustainability of rotations containing more pulses (two pulses every four years).

Stay tuned for updates from the Gol Gol and Millewa sites – and keep an eye out for field day invitations and summary reports as results emerge.

Acknowledgements

Funding for the Gol Gol trial was provided by the GRDC through the Riskwise initiative, and the Federal Drought Fund.

Thank you to the Linklater Family (Ian, Daniel, James and Mick) for hosting this long-term trial, and to Michael Moodie from Frontier Farming Systems for managing the site and analysing and reporting results.

The new trial in the Millewa is supported by the Australian Government through funding from the Natural Heritage Trust under the Climate-Smart Agriculture Program.

The Hunt family (Chris and Anthony) are thanked for hosting the trial.

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Looking for love in the Mallee and beyond

By Ashlee Winton, Mallee CMA
Photo: Seven Network

Ask Mildura's Chelsea Jury what her idea of love is, and her answer reads like a classic John Williamson song.

"Give me a home among the gum trees
With lots of plum trees
A sheep or two, a kangaroo
A clothes line out the back, verandah out the front
And an old rocking chair."

The 27-year-old registered nurse had long been dreaming of the simple country life, so when applications opened for the most recent season of Channel Seven's hit show "Farmer Wants a Wife", Chelsea jumped at the chance to apply.

Having grown up in the Riverland and relocating to Mildura 5 years ago, Chelsea is no stranger to the country way of life.

"I grew up on a big property out of town, and it was wonderful. I'm a country girl at heart, definitely," she said.

"The thought of living in a city never really appealed to me - Mildura is big enough for me!"

Unlucky in love after the end of a long-term relationship, Chelsea wasn't having much luck with dating apps.

"We had been together for 5 years and he's from my hometown... we broke up a couple of years ago and it took me a while to get over that heartbreak," she said.

"I went on a few dating apps, but Mildura is a pretty small place and there's very limited dating options. But I was ready to find my person and I loved watching Farmer Wants a Wife, so thought I'd try my luck with applying."

Pretty soon, Chelsea was making the trek from the Mallee to Biloela, Queensland, to pursue the opportunity to find her farmer.

Fourth-generation cotton, bean and hay farmer Corey was waiting for her – and sparks flew immediately.

Chelsea with the other 'Farmer Wants a Wife' contestants
Photo: Seven Network

"In the first episode on the speed date, I was so nervous, and Corey made me feel so comfortable," Chelsea said.

"I think it was in that moment that I thought, 'I could definitely fall for this guy. I could see a life with this guy."

Life on the farm certainly didn't disappoint, and Chelsea felt instantly at home.

"I settled into life on the farm pretty much straight away," she said.

"Corey was such an amazing guy and all the girls got along so well, it was really easy to settle in.
"The farm had a beautiful house, with open space all around, it was even prettier than I had expected! It was so quiet, peaceful and beautiful. My first night there was the best sleep of my life!

"Corey gave us a big tour of the farm, we got to go on the tractors and wash them, we moved some hay... typical farm experiences, really."

But Chelsea said it was the quiet moments on the farm that she enjoyed the most.

"My favourite thing to do was to just walk around the farm itself," she said.
"It was so nice to be out in nature, so serene".

"Corey is so passionate about his farming work, it was beautiful to see him doing what he loves and to be a part of that."

Unfortunately, after 4 weeks of living out her farm life dreams, Chelsea was eliminated – but her desire to find love and her farmer is stronger than ever.

"Of course I haven't given up on love, I'm still looking," she said.

"I still aspire for the farm life, definitely – maybe more than ever before!

"The whole experience kind of cemented that for me, 100 per cent. The city does not interest me whatsoever, and after going on the show and living on a farm for a month, it's definitely something I'd like in my future, for sure.

"I love animals, so a farm with animals would be amazing, but honestly just any farm would be a dream come true.

"The open space, the fresh air... I'm not scared to get my hands dirty, I'm willing to give anything a go once, roll up my sleeves and help out my partner whenever he needs!

"I'm still single, still looking for my farmer – hopefully he's somewhere right here in the Mallee!"

Wind erosion and land management Autumn transect

By Darryl Pearl, Rebecca Mitchell and Sabah Sabaghy, Agriculture Victoria

Key messages:

- With the potential to impact 97% of dryland cropping areas, air quality, and the long-term viability of agriculture in the Mallee, wind erosion is a significant risk.
- Wind erosion is impacted by wind speed and direction, soil moisture and land management, with the maintenance of ground cover a key mitigation factor.
- The 2025 Autumn transect assessed 1125 paddocks over 28 March and 3 April 2025 capturing ground cover, land management, the presence of livestock and evidence of erosion, helping to identify any changes in land management and pre-sowing practices over time.
- The transect survey found that 90% of the paddocks were covered with stubble, 7.3% were covered with pasture and the remaining 2.7% were bare paddocks.

  114 paddocks (10.1%) paddocks were showing signs of erosion, double the number (5%) in 2024. Most of this erosion was observed on 2024 legume and cereal paddocks with 72.8% of 2025 erosion on dune crests, a similar proportion to 2024.

2025 Autumn Roadside Survey

Seasonal climatic condition

Climatic conditions influence autumn ground cover with seasonal rainfall from the previous year affecting both crop biomass and the amount of residue left after harvest. Low seasonal rainfall can lead to low-biomass crops, while the amount of rainfall can influence the rate at which crop residue decomposes.

Growing season rainfall (GSR) between April to October 2024, was highly variable with monthly totals ranging from decile 8 to decile 1, however totals for the GSR were well below average ranging from decile 1 to 3. Spring rainfall in October, mostly occurring in the Northern Mallee, increased growing season rainfall to decile 3, with the rest of the central, southern and eastern Mallee receiving deciles 1 - 2 rainfall. Despite significantly below average GSR, crops effectively utilised in season rainfall and stored soil moisture to achieve average to just below average yields.

Summer 2024/5 rainfall was highly variable with monthly totals ranging from decile 1 to 8. However overall summer remained consistently around decile 2 across most of the Mallee except for Swan Hill which recorded significant isolated rainfall events in December and February, raising its summer total to decile 7 (Table 1).

Rainfall in March and April when the autumn transect survey was conducted was highly variable ranging from decile 1 (Murrayville) and 2 (Ouyen) to 8 (Swan Hill and Werrimull) with the majority of farmers opting to dry sow, prior to the break.

Table 1: Rainfall totals (mm) and deciles for the Mallee CMA region for 2024/5.

	Mildura	Decile	Ouyen	Decile	Sea Lake	Decile	Swan Hill	Decile
December '24	13.8	6	13.6	5	12	5	33.4	8
January	4.8	3	12.4	6	13.6	5	6	3
February	1.6	3	1.3	3	0	1	31.4	8
March	11.4	6	2.1	2	2.4	3	27.4	8
April	11.0	5	8.8	4			38.4	8
Summer '24-'25	20.2	2	27.3	2	25.6	2	70.8	7
Year to Date	**28.8**	**2**	**24.6**	**1**			**103.2**	**7**
	Hopetoun	Decile	Birchip	Decile	Murrayville	Decile	Werrimull	Decile
December '24	12.2	5	12	5	14.4	5	9.8	5
January	4.2	3	7.2	3	3	2	8.8	5
February	0.4	1	0	1	2.4	3	0	1
March	11	5	8	4	1	2	18	8
April	12.8	4	11.6	4	2.8	2	7.2	4
Summer '24-'25	16.8	2	19.2	2	19.8	2	18.6	2
Year to Date	**28.4**	**1**	**26.8**	**1**	**9.2**	**1**	**34**	**2**

Source: Australian Bureau of Meteorology, Queensland Department of Agriculture and Fisheries.

Primary Cover

The autumn roadside transect survey assessed a total of 1125 paddocks. At the time of the transect survey, 90% of the paddocks were covered with stubble. 7.3% of paddocks were covered with pasture and the remaining 2.7% were bare paddocks.

Erosion

Of the 1125 paddocks surveyed, 10.1% showed signs of erosion, twice the erosion observed in 2024 (Figure 1)

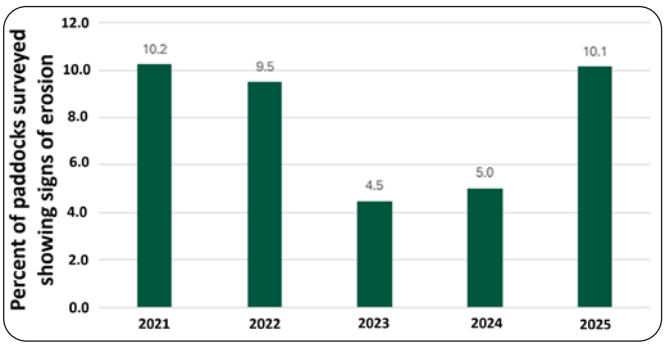

Figure 1: Percent of paddocks surveyed showing signs of erosion, 2021-2025.

Of all the paddocks exhibiting signs of erosion, 72.8% occurred in paddocks on dune crests, a slight decrease from the previous year of 4.1% (Figure 2), while 36% occurred as bald spots in paddocks (an increase from 28.2% in 2024). Visible drift and erosion between the stubble rows made up 4.4% and 1.8% respectively. At the time of the survey dust was observed blowing from one paddock. Individual paddocks can exhibit multiple types of erosion, explaining totals exceeding 100% (Figure 2).

Erosion on dune crests decreased by 10% in 2024; however, it remains prevalent in highly susceptible areas due to factors such as soil type, climate, biomass cover, and topographical exposure to wind.

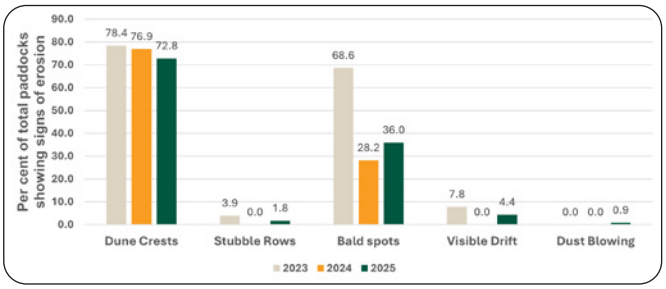

Figure 2: Erosion types observed in paddocks as a percentage of total erosion (b), 2023 - 2025.

Most signs of erosion were observed in paddocks that had been recently disturbed or cultivated, which is common during this period as paddocks are being prepared for sowing. These erosion indicators were primarily located on dune crests or appeared as isolated bare patches.

Comparison of cover types from the previous spring transect survey with paddocks showing erosion in autumn 2025 revealed a shift in erosion-affected paddocks, from those under cereals in 2023 to those under legumes in 2024. Cultivation on sandy soils increases the risk of wind erosion as the soil has little or no soil structure, with the soil remaining loose after disturbance and at risk of drift during wind events. Evidence of disturbance was observed on stubble and not on bare dune crests and bare patches where cultivation was avoided to reduce soil loss.

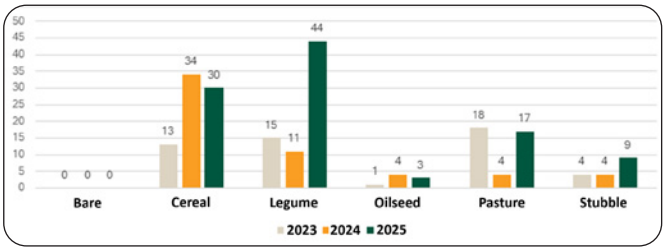

Figure 3: 2024 spring cover types displaying signs of erosion in autumn 2025.

Grazing management

At the time of the transect survey, 20 paddocks (1.7% of total surveyed paddocks) were being grazed. 15 paddocks were stubble paddocks and 5 pastures. Grazing stubble paddocks over summer and through autumn needs to be carefully managed to ensure ground cover levels are not reduced below the recommended minimum level of 50% ground cover. If paddocks are overstocked, or grazed for too long, it may lead to issues with wind erosion, particularly in the high and very high susceptibility zone.

Vegetation Cover Monitoring from Satellites

Fractional ground cover datasets are used to quantify vegetation coverage. This dataset is produced using imagery from the MODIS satellite on a monthly basis. They are used to calculate the area and quality of cover (whether vegetation is living, dead or senescing) and during spring can also identify cereals, legumes and canola crop types, as well as pasture and bare ground in dryland agricultural areas.

A national threshold of more than 50% vegetation cover has been established as the minimum target to protect soils against wind erosion. Maps in Figure 4 and Figure 5 show areas protected from wind erosion in December 2024 and March 2025. Green areas on the map indicate wind erosion protection and brown areas show wind erosion exposure. As of December 2024, vegetation cover in the Mallee was low, indicating a high vulnerability to wind erosion. Only 30% of the Millewa land system was well protected, while Boigbeat, Raak, and Central Mallee showed slightly better condition at 50-60%. Alongside increased lentil cropping, effective stubble management becomes important ahead of the 2025 sowing season to mitigate erosion risk. By March 2025, improved vegetation cover led to lower unprotected areas however low cover remains an issue across the Mallee.

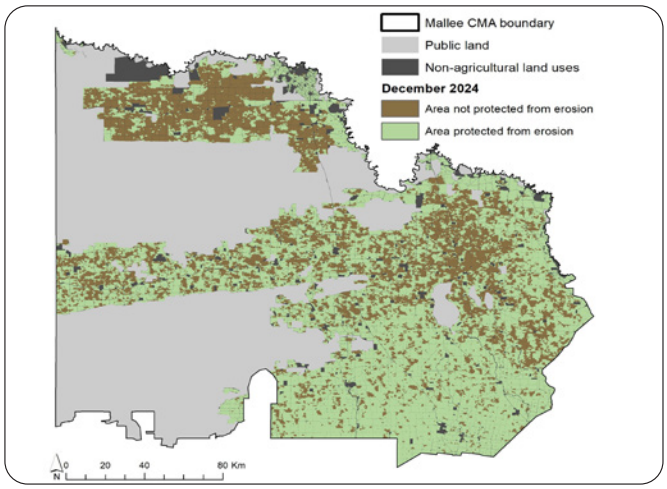

Figure 4: Soil protection from wind erosion across the Mallee CMA in December 2024.

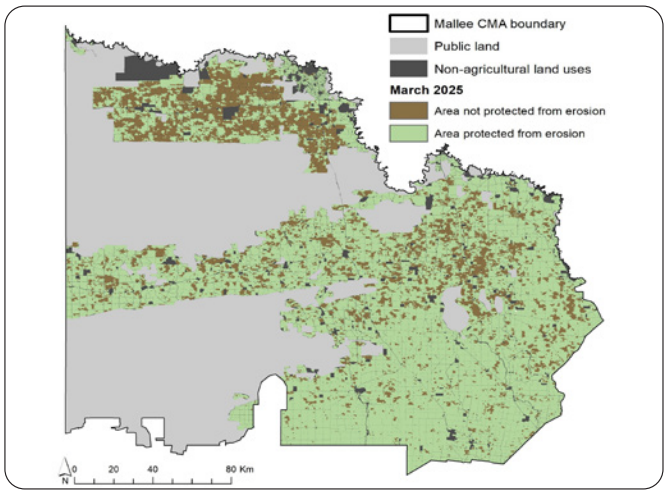

Figure 5: Soil protection from wind erosion across the Mallee CMA in March 2025.

For further information, contact:
Rebecca Mitchell, Agriculture Victoria
Email: rebecca.mitchell@agriculture.vic.gov.au

Acknowledgement
This project is supported by the Australian Government through funding from the Natural Heritage Trust under the Climate-Smart Agriculture Program.

Australian Government | AGRICULTURE VICTORIA | mallee catchment management authority

Planning ahead for drought

By Mallee Regional Innovation Centre

The North West Irrigated Horticulture Node of the Victoria Drought Hub has completed two rounds of focused consultations on drought. Many of the people we spoke to work with dryland farmers as well as irrigators. People in the finance sector like bankers, accountants, and rural counsellors are good examples of that. This article is based on what we learnt from them during the course of our consultations.

The lead-up to a drought is one of the hardest times to manage. It can be unclear when this stage begins. Most families only realise they're in it once the drought is well underway. There is a lot of uncertainty during this time, and that can make it hard to make good decisions.

This is when it's most important for the whole family to sit down with their agronomist, accountant, and banker – ideally at the same time. Working together, you can build a stronger plan and a more realistic budget. Together, you can look at your options and think through the risks. You'll also be better prepared to deal with the uncertainty—both in how the drought plays out and how long it lasts. This doesn't happen as often as it should. One reason is that accountants are often focused on reducing tax, which can make the farm's profit less clear on paper. This, in turn, makes it harder for banks to support new loans.

Start by speaking with an agronomist who knows your full farm business—not just the inputs. The aim is not to find one single path through the drought but to explore several options. Each drought brings different challenges and chances.

Once you've looked at the farming side, talk with your accountant. Work out how each option would affect your cashflow, your assets, and your profits. Then put together a budget for the best options. Share this with your bank.

Bankers work with many farms like yours in the same area. They can give good feedback and help shape a plan that makes sense. The sooner these talks start, the better. Begin by looking back—what did and didn't work in the last drought? What's different this time? Some changes will be inside the farm, such as the family's age or stage in life. Other changes will be outside, like market prices or how the drought is unfolding.

Families going through their first drought often have high debt and less experience to draw on. That can make things feel even more uncertain. Banks will want to make sure your budget doesn't stretch you too far. They will try to leave some room in case you need more help later on.

The most important thing is to have a plan. The second most important thing is being ready to change it if it isn't working. The worst thing is having no plan at all. Without a plan, every decision becomes harder—and less consistent.

In some cases, it may also help to talk to a rural financial counsellor early on. They can help you access government support or, if needed, talk through long-term options, including exiting the farm. It's always better to have these conversations sooner rather than later.

In our consultations, just about everyone spoke about the need to be ready to support mental, social, and emotional wellbeing during the next drought. Our region already has good support services, but they can't easily be expanded once a drought hits. Besides they are set up to treat severe mental health disorders rather than help deal with the mental health issues related to reality-based, financial-management decisions and farm-management decisions. That's why it's important to build skills and knowledge ahead of time - especially for the people who will be helping others during a drought.

The challenge during droughts is how to respectfully, and meaningfully, encourage people to look after their health with regards to wellbeing not just mental health. Farmers in rural remote areas are sometimes reluctant to talk to people, and they sometimes worry about the perceived stigma and shame of asking for help from a mental health service.

That is why the Rural Financial Counselling Service (RFCS) now also has a wellbeing team, which was established to work alongside financial counsellors. They help clients deal with their wellbeing because it is well known that the stresses of financial challenges can take their toll. And they visit clients of the RFCS in their own homes.

Further information
To view the Drought Consultation Reports, please visit the Mallee Regional Innovation Centre website. https://eng.unimelb.edu.au/mric

The Mallee Regional Innovation Centre (MRIC) is a partner in the Victoria Drought Resilience Adoption and Innovation Hub. The Centre leads the North-West Irrigated Horticulture Node.

MRIC Contact:
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Email: MRIC-info@unimelb.edu.au
Website: Mallee Regional Innovation Centre

Rural Financial Counselling Service (RFCS) Victoria West
Email: admin@wswrcs.com.au
Phone: 1300 735 578
(Process: Leave your contact details by calling this number, and you will be matched up with your area counsellor within 24 Hours).

Acknowledgement
This program is supported through funding from the Australian Government's Future Drought Fund

The benefits of stock containment in dry conditions

By Agriculture Victoria

Agriculture Victoria is encouraging livestock producers to consider effective stock containment strategies to help maintain core herd or flock numbers and support pasture recovery.

Agriculture Victoria's Land Management Extension Officer Kerri Goschnick said dry seasonal conditions and limited rainfall continue to place pressure on grazing operations, impacting pasture growth and causing bare ground across many paddocks.

"Stock containment refers to confining livestock in designated areas, where farmers can effectively manage feed, water and shelter," she said.
"This allows farm paddocks to rest until an autumn break causes pastures to recover and withstand livestock grazing.

"Stock containment doesn't necessarily require a complicated system; it can be as simple as a sacrifice paddock with good quality water and access for feeding.

"Farmers should be aware that there is a higher risk of weed infestation when importing feed to supplementary feed livestock.

"Establishing a stock containment area to use supplementary feed will contain the weed seeds to a manageable area.

"Weeds to look out for include parthenium weed, particularly in fodder sourced from parts of QLD and NSW.

"It is important that animals in containment have their nutritional, water and shelter needs met."

Agriculture Victoria can assist in planning feed budgets and stock containment area design and management. Further information can be found by searching for these items on the Agriculture Victoria website.

Further information on support available can be found at www.agriculture.vic.gov.au/dryseasons or by calling 136 186.

Weeds at the early state of invasion

By Bianca Gold, Department of Energy, Environment and Climate Action

WESI training session at Irymple in March 2025, focused on early invader weeds in the Victorian Mallee
Photo: Bec Schwinghammer - Agriculture Victoria

The Weeds at the Early Stage of Invasion (WESI) Project is a statewide Department of Energy, Environment and Climate Action (DEECA) program which focuses on prompt detection and intervention of early invader environmental weeds. The project is funded by DEECA Weeds and Pests on Public Land (WPPL) Program which aims to control and limit the spread of invasive species through landscape scale weeds and pest animal projects.

Weeds at the early stage of invasion, also known as early invader weeds, are plants that have naturalised and are just beginning to spread. They are usually at a stage that they can be eradicated or contained to a site. Acting on managing early invader weeds can save you time, money and resources due to them not being widely established.

Managing weeds can be a daunting and challenging task, and the WESI Project has developed a range of tools to assist with working through this. The Decision Making Framework (DMF) can be used to guide through the process of dealing with early invader weeds, from detection through to implementing eradication (if feasible). Each stage in the DMF has a detailed guide to assist with making decisions and planning a management approach. The Early Invader Manual combines each of the guides into a concise summary of the DMF process. The guides and manual have useful templates to record information and show why the decisions were made. These can be helpful for project staff handover notes, project updates, applying for funding and project reporting.

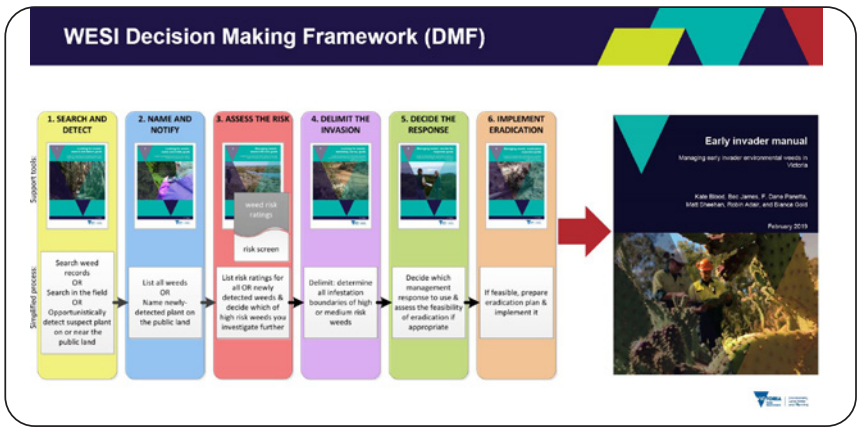
Invasive plants present a serious and ongoing threat to Victoria's biodiversity and whilst some of these plants are declared weeds there are many other environmental weeds that are not legislated, for various reasons. The WESI Project, with assistance from experts, has developed the Advisory list of environmental weeds in Victoria (2022). The Advisory list contains over 1,800 plants considered to be environmental weeds in Victoria. Its purpose is to be used as a guide to help determine the level of risk, invasiveness, impact to the environment and rate of dispersal which can assist with making management decisions.

In addition to developing these tools, the WESI Project delivers training sessions across Victoria on weed identification and dealing with early invader weeds, raises awareness of early invader weeds through conferences and newsletters, and participates in State and cross border collaborations where there are common interests. To learn more about the WESI Project and access the tools please visit the early invader weeds webpage on the DEECA website.

Online links for further information:

Weeds at the Early Stage of Invasion (WESI) Project
https://www.environment.vic.gov.au/invasive-plants-and-animals/early-invaders

Weeds and Pests on Public Land (WPPL) Program
https://www.environment.vic.gov.au/invasive-plants-and-animals/invasive-species-on-public-land/weeds-and-pests-on-public-land-program



WESI Decision Making Framework - an excellent tool to use for early invader weed management with guides and a manual explaining each step in the process

Early Invader Manual (2019)
https://www.environment.vic.gov.au/__data/assets/pdf_file/0019/414244/WESI-Early-invader-manual.pdf

Weed risk ratings and the Advisory list of environmental weeds in Victoria (2022)
https://www.environment.vic.gov.au/invasive-plants-and-animals/weed-risk-ratings

Declared weeds/Noxious species list
https://agriculture.vic.gov.au/biosecurity/protecting-victoria/legislation-policy-and-permits/consolidated-lists-of-declared-noxious-weeds-and-pest-animals

The National Soil Monitoring Program in the Mallee

By Cameron Flowers, Mallee CMA

Soil core extraction
Photo: Mallee CMA

Soil is a non-renewable resource and our most valuable natural asset. Australian soils are particularly vulnerable to degradation because they are deeply weathered, old and nutrition poor.

The National Soil Monitoring Program (NSMP) has been established to monitor changes in soil health indicators and provides the information required to identify trends in soil condition over time so that this natural asset can remain agriculturally and environmentally productive for current and future generations. Preserving and supporting healthy soil through effective soil management is critical for climate smart, productive and sustainable agriculture.

The Department of Agriculture, Fisheries and Forestry (DAFF) has engaged the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to design and deliver the NSMP.

The soil monitoring program will sample approximately 3,000 sites across Australia, with a strong focus on major agricultural zones. Activities will include soil sampling and characterisation, laboratory analysis of soil samples, collection of site information and data on land use and management practices and the archiving of collected soil specimens.

As a part of this program, the Mallee Catchment Management Authority will be undertaking the field work component of the NSMP at 56 sites across the Victorian Mallee region, with sites located on farms and land managed by Parks Victoria and State Forest.

Project Information:
How were the sampling sites identified?
A soil monitoring network was established across Australia to identify sampling sites that represented a broad range of soils, landscapes, climate and land uses. The sampling design used national soil, climate and vegetation classes to identify the final site locations.

How will participating landholders in the Mallee benefit?
Participating landholders will gain a greater understanding of soil health at their properties. Each landholder will be provided with a report that details the results of the field data collected at their site/s, including comprehensive soil chemical, physical and biological assessments. This data generated can support landholders in making evidence-based decisions to improve the health of the soil on their properties.

Participating landholders will be helping to build the national knowledge base around trends in soil condition and health. The information gained from the NSMP will assist researchers in identifying key opportunities for soil improvement across different types of landscapes.

Soil core extraction with a trailer mounted soil sampler
Photo: Mallee CMA

Field sampling to determine soil type, texture and colour
Photo: Mallee CMA

What is involved for landholders and who will be coming on site?
Participating landholders will be asked to sign an authorisation form providing field teams access to the property to undertake soil sampling, evaluate site characteristics and gain an understanding of the land management and history of the site.

Mallee CMA have been engaged to do the field work for the project and their field staff will be carrying out the monitoring works on site.

What will the monitoring entail?
The soil sampling and field research at each site will generally be conducted by two field staff to obtain;

- Information on land management history (by asking a few relevant questions)
- Information on land and soil characteristics (by observation), and
- Soil samples from a number of sites across a 25 x 25 metre site plot (Soil samples will be sent to a laboratory for analysis)

Sites will generally consist of a 25 x 25 m plot, within which up to 15 soil cores, to a depth of one metre, will be extracted. The resulting holes will be back filled before teams leave the site. A ute and trailer will be required on site for sampling activities.

What about biosecurity?
Field staff will adhere to relevant national, state and industry specific biosecurity regulations. At all times the field team will communicate with landholders to ensure these requirements are understood and address any questions prior to entering a site.

For more information visit:
www.research.csiro.au/nsmp
Or contact: Cameron Flowers,
Sustainable Agriculture Facilitator, Mallee CMA
Mobile: 0427 509 663
Email: Cameron.flowers@malleecma.com.au

Acknowledgement
The National Soil Monitoring Program has been supported by funding through the Australian Government Natural Heritage Trust (Department of Agriculture, Fisheries and Forestry) in collaboration with CSIRO.

Australian Government
Department of Agriculture, Fisheries and Forestry

mallee
catchment management authority

Proposed watering for Mallee wetlands

By Ashlee Winton, Mallee CMA
Photo: Mallee CMA

Each year, the Mallee CMA develops four Seasonal Watering Proposals (SWPs) that outline which sites need water for the environment, or a drying phase in the year ahead.

What is a Seasonal Watering Proposal?
Each SWP draws on ecological and hydrological objectives, scientific research, Environmental Water Management Plans (EWMPs), Traditional Owner and community input. Each SWP is submitted to the Victorian Environmental Water Holder (VEWH), an independent statutory body responsible for managing Victoria's environmental water entitlements. VEWH use SWPs to create an annual Seasonal Watering Plan, a legislative document that enables environmental allocation delivery across Victoria.

This plan is published by June 30 each year.
The Mallee CMA prepares annual Seasonal Watering Proposals for:

- Murray Wetlands
- Hattah Lakes
- Lindsay-Mulcra-Wallpolla Islands
- Wimmera-Mallee Pipeline Wetlands

Which wetlands on the Murray River floodplain are planned to receive water in 2025-26?
Subject to approval under the Seasonal Watering Plan, the following sites are proposed to receive water in 2025-26:

Site	Volume	Timing
Wetland 33 (Lindsay Island)	150 ML	Spring 25
Lindsay Mullaroo Connector (Lindsay Island)	300 ML	Autumn 26
Stockyards (Lindsay Island)	800 ML	Spring 25
Mulcra Horseshoe (Mulcra Island)	1,200 ML	Spring 25
Sandy Creek and Lilyponds (Wallpolla Island)	2,000 ML	Spring 25
Finnigans Creek (Wallpolla Island)	1,000 ML	Spring 25
Wallpolla Horseshoe (Wallpolla Island)	800 ML	Spring 25
Brickworks Billabong	250 ML	Spring 25/ Autumn 26
Catfish Billabong	900 ML	Spring 25
Lake Hawthorn	1,500 ML	Spring 25/ Autumn 26
Lake Koorlong	150 ML	Spring 25/ Autumn 26
Musk Duck	50 ML	Winter 25
Outlet Creek	850 ML	Spring 25
Bottle Bend	350 ML	Spring 25
J1 Creek	450 ML	Spring 25
Burra Creek North	320 ML	Spring 25
Burra Creek South	1,000 ML	Spring 25
Burra Creek South Proper	75 ML	Spring 25

Note – sites proposed are subject to water and funding availability and seasonal conditions.

Is watering just as important as drying?
Yes. Wetlands need both wet and dry times to remain healthy and support the plants and animals that rely on them.

Drawing down/drying a wetland is important for a number of reasons, including:

- Exposed bank from reduced water levels allows mudflat plant species to grow
- Surrounding River Red Gum and Black Box trees prefer not to have their roots permanently submerged
- Emerging wetland plants contribute to soil nutrients
- Reducing water levels helps mitigate the impacts of carp.

Which wetlands may start to dry?
Hattah Lakes will begin a drying phase in 2025-26, after receiving water over the past few years. The lakes are one of several local wetlands planned to begin a drying phase in the coming year, which will help release nutrients from the soil, reduce carp numbers, and let important native plants grow.

The drying phases are mapped out in the Seasonal Watering Proposals developed by the Mallee Catchment Management Authority (CMA), which identify potential sites that require a drawdown (or drying) phase in the year ahead or may need to receive water for the environment.

Hattah Lakes and a number of other wetlands in the Mallee CMA region will not receive water for the environment during 2025–26 (please refer to the Seasonal Watering Proposals on our website for more information). These wetlands will continue to drawdown, and some are likely to enter a dry phase. In contrast with planned watering sites, drying of these waterbodies will create a mosaic of habitat types across the broader landscape which provides favourable conditions and supports a wider range of species across the landscape. Drying wetlands helps eradicate pest fish species (carp) and re-sets sites in preparation for future water deliveries and flourishing vegetation.

Which of the Wimmera-Mallee Pipeline wetlands are proposed to receive water?
This year, all the Wimmera-Mallee Pipeline wetlands within the Mallee CMA region will be included in the Seasonal Watering Proposal to give them the best chance of being included in the Seasonal Watering Plan. Site-by-site ecological assessments will then help inform and prioritise which sites receive water.

To stay up to date with planned watering activities, follow Mallee CMA on social media and visit the website at www.malleecma.com.au/waterways

If you would like more detailed information on any of the planned watering events, check out our website for Environmental Water Management Plans and the Seasonal Watering Proposals, which are key documents that inform water planning.

To find out more, send our team an email at info@malleecma.com.au, or phone the Mallee CMA during business hours on 03 5001 8600 and ask to speak to a member of our environmental watering team.

Carbon, Soils, and Emissions Workshops

Join with Mallee CMA to learn about Carbon Farming and your farm emissions, accounting and reductions.

Topics:

- Carbon Farming
  - What is it and what are the opportunities
- What is driving Carbon and Emissions expectations on farmers
- How to identify and understand your emissions
- What are the carbon activities that suit your land and soil

Presenter:

Cassandra Schefe - AgriSci Pty Ltd.

A soil scientist with over 25 years of experience in addressing soil constraints in agriculture. Cassie spends a lot of time with groups of farmers across SA, Vic and NSW, working through the basics of soils and identifying the key limiting factors that constrain plant growth. Her expertise across the industry means that she understands both the fundamental science behind our systems and broad issues coming from government and multinational supply chains.

Free workshops:

Hopetoun.

Date: Wednesday 23 July 2025
Time: 1pm – 5pm
Location: Hopetoun & District Neighbourhood House
75 Lascelles Street, Hopetoun 3396
Registration: QR Link below

Sea Lake.

Location: Date: Thursday 24 July 2025
Time: 1pm – 5pm
Location: Sea Lake CFA
55 Railway Ave, Sea Lake VIC 3533
Registration: QR Link below

Events are also planned for Curyo, Nullawil, and Kooloonong in August.

For further information, please contact:
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Delivered with funding support from the Commonwealth of Australia through the Department of Climate Change, Energy, the Environment and Water under the Carbon Farming Outreach Program.

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Landcare Victoria Inc. | mallee catchment management authority

Drought support package

By Agriculture Victoria

The Victorian Government is providing direct drought support of $67.2 million for farmers across Victoria impacted by drought and difficult seasonal conditions.

This is in response to deteriorating seasonal conditions across much of the state, with south west Victoria now recording significant rainfall deficiencies since winter 2023.

On-Farm Drought Infrastructure Grants are available for primary producers to support on-farm drought management improvements. Primary producers across the state will be able to access grants of up to $5,000 while those in south west Victoria, will be able to access an increased amount up to $10,000 (in the 11 eligible local government areas and parts of West Wimmera).

Technical and decision-making support is also available to farmers across the state, including a free 1-on-1 consultation with a farm advisor and local group based technical events. These services will be delivered in partnership with a range of service provider specialists.

A 'Look Over the Farm Gate' mental health and wellbeing program will be available statewide to help communities come together and support farmers and farming families under stress. This program will be open soon.

These escalated services build on supports that are always available to Victorian farm businesses across the state, year-round. These include the Rural Financial Counselling Service, the Commonwealth Government's Farm Household Allowance and low interest loans available through the Regional Investment Corporation.

Statewide technical decision-making support
Agriculture Victoria's technical and decision-making support program is available to farmers right across the state.

The program will provide farm businesses with access to tailored support and advice through one- on-one consultations, webinars, workshops, field days, and boosted online tools and information.

One-on-one drought advisory service
Impacted farmers anywhere in Victoria can register for a **one-on-one session with a farm advisor** to take stock, discuss and plan the best way forward for their business in the challenging conditions. Farmers can nominate their preferred consultant from a panel of providers for a 3-hour consultation (on-farm or virtually) and a follow up call.

This program remains open to farmers in south west Victoria and will soon be open for farmers across the state.

Scan the QR code for more information, including to express your interest in the one-on-one advisory service.

Technical information and decision-making events program
Agriculture Victoria is coordinating delivery of technical information and decision-making events and workshops across the state, focused on key drought management issues.

Visit:
agriculture.vic.gov.au/events
for details about online and in-person events.

On-farm drought infrastructure grant program
The On-Farm Drought Infrastructure Grant Program provides immediate support in managing drought, as well as helping set the farm up for future droughts.
The grant program announced for SW Victoria in September 2024 has been extended and the grant amount has been increased up to total of $10,000.
Farmers in other areas of the state will be able to access grants of up to $5,000. A dollar-for-dollar co-contribution is required by the grant recipient.

Eligible farmers can apply for grants for on-farm improvements including water infrastructure upgrades, stock containment areas, grain and fodder storage, as well as water carting activities and pasture re-establishment.

Scan the QR code to check your eligibility and register your interest.

More information
For more information about the Drought Support Package scan the QR code, visit agriculture.vic.gov.au/dryseasons, email drought.support@agriculture.vic.gov.au or phone 136 186.

AGRICULTURE VICTORIA

MalleeFarmer

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