



Australian
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SUSTAINABLE FARMS

Annual Report 2023

**Sustainable Farms acknowledges the Traditional Owners
of the lands on which we work and recognise their
enduring connection to Country.**

We pay our respects to their Elders past and present.

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Overview of 2023

It has been inspiring to see the breadth of impact that the Sustainable Farms initiative has been able to achieve during the last 12 months, thanks to our dedicated project staff, our excellent research team and our passionate supporters.

Early last year we welcomed Professor Andrew Macintosh as the Research Director for Governance and Policy at Sustainable Farms. Andrew's expertise and the contributions of his research team have substantially enhanced our ability to engage in critical environmental policy matters. Sustainable Farms is playing a pivotal role in shaping national policies aimed at developing innovative financing mechanisms for the protection and restoration of natural environments. This is particularly important in agricultural landscapes where biodiversity loss has been extensive. In December 2023, the Australian Parliament enacted the *Nature Repair Act 2023*, which seeks to mobilise private finance to enhance and safeguard biodiversity. Sustainable Farms are actively contributing to the design of the assessment and monitoring processes that will ensure the effectiveness of the Nature Repair Market and Agriculture Biodiversity Stewardship Package.

Our multi-disciplinary research continues as the core foundation of our approach. In 2023, analysis of our long-term data on reptiles from farms in the NSW South West Slopes was completed and published, with the results highlighting the value of having a mix of old growth woodland, plantings and natural regrowth in agricultural landscapes to support a greater diversity of reptile species.

Our economics team, in partnership with the Australian Bureau of Agricultural Resources, Economics and Sciences, made a significant contribution in our understanding of the private benefits of native vegetation on farms as indicated by the property value. Private benefits were found to be associated with vegetation and bird biodiversity but the results vary in relation to the size of the property and the distribution of land value. This research has practical implications for farm-level decision-making and can also inform targeted investment and policy mechanisms to promote cost-effective investment in conservation on farms.

We continue to use our research results to engage with rural landholders and catalyse on-ground practice change that makes a significant contribution to biodiversity conservation on farms. In 2023, we continued our farm field day program and began the delivery of our train-the-trainer workshops for extension practitioners. These workshops are designed to empower Landcare and NRM staff to support their landholders to implement practical strategies that enhance natural assets on farms.

We extend our sincere thanks to our partners and investors for their ongoing support, which was fundamental to the achievements of Sustainable Farms in 2023.

Michelle Young, Project Director



Prof. David Lindenmayer, Lead Scientist



Progress towards our Strategic Goals

OUR VISION

Healthy farmers, healthy farms, healthy profits

OUR MISSION

To support the improvement of natural asset management on farms in the temperate woodlands, to enhance biodiversity, increase farm profitability and improve farmer wellbeing.

GOAL 1: Biodiversity on farms is appropriately conserved and biodiversity outcomes are improving

Farmers have an important role to play in biodiversity conservation, especially across the sheep-wheat belt of south-eastern Australia. In this region, Box-Gum Grassy Woodland once dominated the landscape but now less than 10% remains and it is listed as a critically endangered ecological community under the *Environment Protection and Biodiversity Conservation Act 1999*. Over three-quarters the remaining remnants of Box-Gum Grassy Woodland occurs on privately owned land.

Our long-term ecological research is continuing to provide a scientific basis for the improved management of natural assets on farms, particularly in temperate woodland ecosystems. A key aim of Sustainable Farms is to empower landholders to be able to make informed land management decisions, by sharing the learnings from our research with farming communities and enhancing their ecological literacy. Our research is providing natural resource management (NRM) practitioners with the confidence that their programs and activities are guided by the best evidence available.

Farmer and community engagement

During 2023, we delivered an extensive program of outreach events for farmers and other rural landholders. The Sustainable Farms team participated in 27 farm field days across NSW and Victoria. These events were held in partnership with local Landcare and NRM organisations, with topics encompassing farm dam enhancement, native vegetation and shelterbelts, paddock trees and drought resilience.

We also delivered or were involved in seven other community events with a focus on biodiversity in agricultural landscapes. These included Breakfast with the Birds, Landcare activities, Batlow Youth Event and World Environment Day events. We extended our reach through involvement in five webinars, including the online launch of our Farm Dams Technical Guide.

These events saw a combined reach of 853 people. This number reflects an increase in the number of in-person events and fewer webinars than previous years, as well as a contraction of our extension program in NSW in the latter half of the year, when the Smart Farms grant funding for our 'Farm Dams and Shelter' project ended.



Farm field day at Baranduda VIC

Collaboration and capacity-building with NRM stakeholders

Partnerships

Partnerships with regional NRM organisations throughout NSW and Victoria continue to be essential in extending our reach. We worked with over 40 different organisations in 2023 including Landcare, regional NRM bodies, government and green finance initiatives.

A highlight has been our collaboration with Landcare Victoria as part of a new project to identify and engage with pathways for investment beyond grant-based project funding. The 'New Futures in Victorian Landcare' project aims to explore how Landcare networks can lead projects that enable landholders to engage with environmental markets that can deliver landscape scale change. Landcare Victoria is leading this project. Other projects partners are Regen Farmers Mutual and the Conservation Finance Lab. Sustainable Farms Director Michelle Young has been closely involved in the planning and inception of the project. In 2024, the Sustainable Farms team will support the project rollout by supporting the initial two Landcare-led working groups, providing them with access to ecological and social research data and project evaluation support.

The Riverina Drought Resilience Project funded by the Future Drought Fund, is another on-going partnership that advanced in 2023. We have been working closely with extension experts in the Riverina Local Land Services to identify cohorts and evaluate the adoptability of key drought mitigation practices including shelterbelts and farms dams. We have also supported Riverina's extension team through both webinars and field days. A final report is due in mid-2024.

Sustainable Farms' Agricultural Economist, Dr Helena Clayton, has also been building on our successful collaboration on farm dams with researchers from Deakin University's Blue Carbon Lab, to undertake an analysis of the drivers and constraints for farmers to enhance farm dams. During 2023 this partnership focused on the development of a survey that will seek input from graziers across NSW and Victoria about their stock water management priorities and challenges, and whether the enhancement of farm dams can deliver outcomes of value.

Several other collaborative project proposals were also developed in partnership with State-level and regional organisations (see **Goal 4, Additional fundraising activities** section for further details).

Conference and forum presentations

In 2023, we extended the reach of our research through the delivery of presentations at seven national and state conferences and regional forums.

- Victorian Landcare Conference, Beechworth VIC – keynote presentation by Michelle Young
- Private Land Conservation Conference, Canberra ACT – presentations by David Lindenmayer, Michelle Young and Kimberley Brown
- Ecological Society of Australia Conference, Darwin NT – presentation by David Smith
- Australasian Ornithological Conference, Brisbane QLD – presentation by David Smith
- NSW Nature Conservation Council Regional Conference, Albury NSW – presentation by Amber Croft
- Grassy Woodlands Conservation and Research Forum (North East CMA), Wangaratta VIC – presentations by David Lindenmayer and David Smith
- Goulburn Broken Region Sustainable Agriculture Project Forum (Goulburn Broken CMA), Dookie VIC – presentation by David Smith

Sustainable Farms had stalls at an additional three events: North East CMA's Farming Carbon Conference in Beechworth VIC, the NSW State Landcare Gathering in Coffs Harbour NSW, and Strategies for Profitable Practice Change forum in Boorowa NSW.

Train-the-trainer workshops

In order to accelerate the reach of our research and engagement, Sustainable Farms commenced delivery of new training modules for Landcare and NRM professionals on the topic of enhancing farm dams. The training modules take an in-depth dive into our research findings and subsequent recommended management activities. The workshop also guides participants through the process of identifying drivers of change from within their own farming communities and to explore how the ADOPT framework can be applied to understand uptake of new activities. The workshop is designed to leave participants confident in delivering field days within their local region and able to effectively empower landholders to take part in natural asset management projects. A 44-page booklet, *Enhancing Farm Dams: A guide to facilitating best practice*, has also been produced as a detailed resource for workshop attendees.

A second series of training modules on the topic of managing native woodland are currently in development, including the accompanying *Managing Woodland Vegetation on Farms: A guide to facilitating best practice* booklet.

New resources & communications

In 2023 Sustainable Farms produced several new educational resources:

- ***Farm Dams Technical Guide: Design and construction of high-performing farm dams*** – a 32-page booklet, as well as a web-based version with downloadable pdfs, produced in collaboration with technical experts from Agriculture Victoria, NSW Local Land Services and the NSW Soil Conservation Service (www.sustainablefarms.org.au/resources/farm-dams-technical-guide).

- **Managing natural assets on farms: Enhancing farm dams** – an 8-page management guide summarising Sustainable Farms’ research on the multiple benefits that arise from enhancing farm dams and how to undertake a dam enhancement project (www.sustainablefarms.org.au/resources/farm-dams-guide).
- **2024 Calendar: Life at a farm dam** – featuring photos highlighting the diversity of wildlife at well-managed farm dams and sharing key findings from our farm dams research (www.sustainablefarms.org.au/news/2024-calendar).
- **Enhancing Farm Dams: A guide to facilitating best practice** – a 44-page booklet to accompany our train-the-trainer workshops. (*Managing Woodland Vegetation on Farms: A guide to facilitating best practice* – in progress, will be completed in early 2024.)
- **Videos** – Two new short videos have been produced. The first provides a strategic overview of the objectives of Sustainable Farms and why our research and outreach activities play an important role in the conservation of the Box-Gum Grassy Woodlands (available on our home page at www.sustainablefarms.org.au). The second shares the story of a farmer in north east Victoria and the benefits he has seen from enhancing his farm dams (www.sustainablefarms.org.au/farmer-stories).

We continue to experience high demand for our educational resources, with distribution of approximately 1200 printed resources and a further 4,200 resources downloaded via our website in 2023. This demand for our resources validates the value of our science content and management insights to landholders and other stakeholders.

We also continue to share opportunities, research and resources through a range of communication channels, to maximise our reach. We distributed 8 e-newsletters sharing news and events to 3000+ subscribers. We posted regular social media content that saw a 12% increase in Facebook followers and a 9% increase in Instagram followers. Traffic to the Sustainable Farms website remains steady at around 25,000 visitors/year.



Landcare practitioners at a Sustainable Farms train-the-trainer workshop in Benalla VIC

HIGHLIGHT: Farm Dams Technical Guide

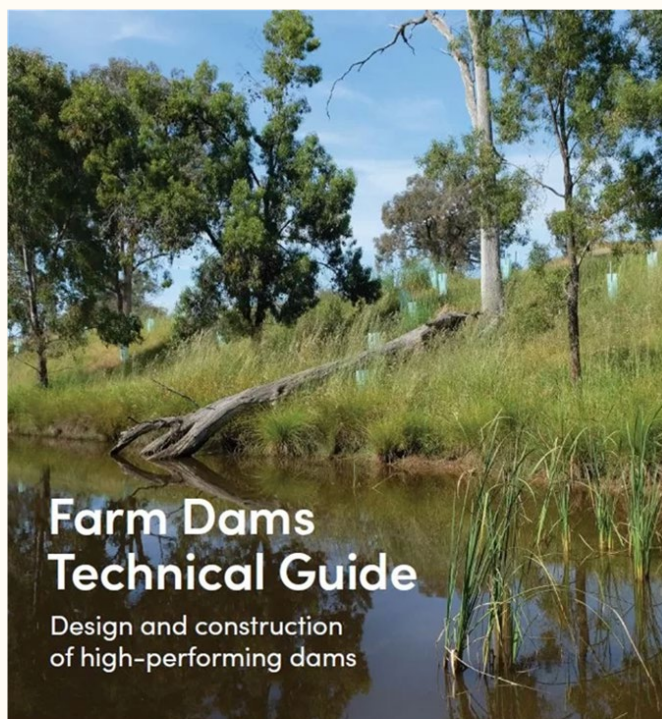
Well-designed farm dams provide many benefits including improved water quality and persistence, increased agricultural productivity, increased biodiversity and provision of ecosystem services.

The *Farm Dams Technical Guide: Design and construction of high-performing farm dams* is a detailed 44-page guide that provides comprehensive guidance on each stage of the farm dam planning process to both enhance existing dams and construct new dams. The guide was developed with input from technical experts Agriculture Victoria, Local Land Services and the NSW Soil Conservation Service, and funding support from Landcare Australia. It covers site selection, estimating water storage requirements, understanding regulatory requirements, technical design elements, managing stock access, reticulated water supply and revegetation.

The *Farm Dams Technical Guide* is bridging the gap across knowledge networks by providing comprehensive information and practical guidance that integrates agricultural expertise, ecological science and sustainable water management practices, providing a resource for landholders, engineers and dam construction providers to implement a holistic and sustainable approach to dam construction and management.

The *Farm Dams Technical Guide* was officially launched at our Science of Farm Dams webinar in August 2023. We have distributed a total of over 700 copies of the Farm Dam Technical Guide since its launch. The guide is also available in an online format.

Access the guide at: www.sustainablefarms.org.au/resources/farm-dams-technical-guide



Good design, construction and management of farm dams can pay significant dividends for farm productivity and for the environment.

This guide provides detailed technical information to support the process of dam enhancement or the construction of a new dam, in order to optimise dam performance.



GOAL 2: Drive policy change and investment in natural asset management on farms based on scientific evidence of public and private benefits

Sustainable Farms' work on shaping policies to develop new ways of financing major environmental restoration programs, has been a stand out achievement in the second half of the year.

Nature Repair Market

In 2023 we saw major developments in policies surrounding biodiversity markets with the passing of the *Nature Repair Act 2023*, which establishes a framework for a national, voluntary biodiversity market. The Nature Repair Market will mobilise private investment into environmental protection and restoration activities that deliver clear biodiversity outcomes.

As the Department of Climate Change, Energy, Environment and Water (DCCEEW) began looking for models that it could use in the development of the Nature Repair Market it was recognised that Sustainable Farms had the data sets, tools and expertise to support the development of a restoration method under the new scheme.

Using the critically endangered Box-Gum Grassy Woodlands as a case study, our research team are providing guidance to DCCEEW about what restoration activities are likely to be the most effective management interventions and how monitoring should be designed to quantify management effectiveness and return on investment.

Sustainable Farms received funding for 2023-24 to develop a series of outputs for DCCEEW that will include:

- A conceptual framework to support the design of the Nature Repair Market's terrestrial biodiversity assessment and monitoring processes
- A case study on how the proposed assessment and monitoring framework could be operationalised for nature repair projects concerning *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (commonly known as Box-Gum Grassy Woodland)
- A review of the costing of biodiversity assessment and monitoring processes

Work on these outputs commenced in late 2023 and are due for completion in early 2024. This work involves a close collaboration between academics from the ANU Fenner School of Environment and Society and the ANU College of Law, and has supported us to explore the scope of future cross-college collaboration through Sustainable Farms.

Agriculture Biodiversity Stewardship Pilot monitoring

Since 2019, environmental law experts from the ANU College of Law have been closely involved with the design and establishment of the DCCEEW Agriculture Biodiversity Stewardship Pilot program (www.dcceew.gov.au/environment/environmental-markets/agriculture-stewardship).

In late 2023, in a collaboration with the ANU Law team, Sustainable Farms secured the contract to monitor the stewardship sites funded under the Enhancing Remnant Vegetation Pilot, as well as the Biodiversity + Carbon Pilot.

The sites are situated in Queensland, Victoria, New South Wales, South Australia and Western Australia. Monitoring will continue for at least 5 years and the learnings will go in to informing the continued development of the Nature Repair Market, and future stewardship and environmental grant programs developed by the Australian Government.

GOAL 3: Expand our knowledge of how to undertake effective restoration in agricultural landscapes to support biodiversity, productivity and climate adaptation.

Ecological research

The Sustainable Farms team continued to collect long-term ecological data, undertaking over 1500 surveys monitoring birds, vegetation and water quality in 2023.

The final round of surveys for the Farm Dams Study were completed, bringing the four-year monitoring program to a close. The analysis of the monitoring data has generated many important research findings about the multiple benefits of enhancing farm dams (see Highlight box for details). New research on farm dams will be undertaken in 2024, in collaboration with researchers from Deakin University's Blue Carbon Lab. This innovative research project will include Environmental DNA (eDNA) sampling to monitor aquatic invertebrates within dams, as well as testing to evaluate the performance of instruments used to detect greenhouse gas emissions from dams.

During 2023, analysis of our long-term data on woodland reptiles in the NSW South West Slopes region uncovered some fascinating results. It was found that most species of reptiles are extremely uncommon, leaving only a small number of species with sufficient records for statistical analysis. Those analyses do, however, reveal that different species have different preferences for different kinds of vegetation cover. It highlights the value of ensuring that agricultural landscapes support not only old growth woodlands, but also replantings and patches of natural regrowth.

In a second example of the value of long-term ecological data, we quantified the response of woodland birds to different grazing regimes. We found that many bird species responded to vegetation structure, while vegetation responded to different grazing regimes (set stocking, rotational grazing, and complete livestock grazing exclusion). However, the effects of grazing control on birds were somewhat muted because of the overwhelming negative impacts of the hyper-aggressive Noisy Miner via interference competition. The profound impacts of the Noisy Miner presents challenges for bird conservation in woodland ecosystems, especially those subject to grazing. Management to reduce grazing pressure by domestic livestock may eventually help limit the impacts of the Noisy Miner, in part by facilitating natural regeneration of temperate woodlands to which small-bodied woodland birds respond positively.

Another important study demonstrated that co-locating key natural assets on a farm has significant positive benefits for bird biodiversity. For example, we found significantly greater bird species richness and bird breeding activity at enhanced farm dams surrounded by replanted vegetation, than where there was a single natural asset only such as a shelterbelt (with no nearby dam) or an unfenced dam (with no surrounding revegetation).

Results from our research were published in eight peer-reviewed academic journal articles, and an additional two editorial pieces (**Appendix 1**).

Economics research

Sustainable Farms was founded on the assumption that there are win-win outcomes for restoring and protecting vegetation on farms. However, there is often limited empirical analysis of the 'win' for agricultural production and other private benefits to farmers. Hence there is a need to quantify private benefits, or alternatively costs, associated with native vegetation and biodiversity on farms in the area where Box-Gum Grassy Woodlands occur.

Sustainable Farms had a unique opportunity to utilise long-term data sets collected on farms in the woodlands to explore this relationship. The study involved a partnership between the Sustainable Farms researchers Dr Helena Clayton and Dr Kassel Hingee, with the Australian Bureau of Agricultural Resources, Economics and Sciences (ABARES). A hedonic modelling approach was used to estimate the value associated with environmental attributes of farming land.

The study found that the private benefits of woodland vegetation on farmland (reflected in property values) are sensitive to the overall parcel size and diminish as the proportion of woodland on a parcel increases. Their analysis also found that private benefits are highly sensitive to the price per hectare for farmland. For large parcels at the lower end of the distribution of farmland value, they found increments above a very low baseline in woodland and related biodiversity were associated with private costs to farmland owners.

These insights have practical implications for farm-level decision-making and can inform targeted investment and policy mechanisms to promote conservation practices while considering private benefit. The possibility of win-win outcomes across public and private benefits offers opportunities to drive conservation practices on farms at the scale required.

Social science research

Since the 1990s, natural resource management (NRM) professionals have been working in regional and rural locales to build human capital, social networks and collective resources necessary to facilitate conservation on agricultural land. In recent years there has been increasing concerns about the emergence of policies that deliver public finance through market mechanisms and devolve responsibility for conservation to individual landholders and volunteer groups, such as Landcare organisations. Many socio-economic studies of the NRM sector have tracked these policy developments, in part, to explain the challenges for organisations supporting natural resource management (such as Landcare networks, Catchment Management Authorities and Local Land Services). To date, little attention has been placed on NRM labour (personnel) itself.

In 2023, Dr Rebecca Pearse completed a social study for Sustainable Farms looking at the careers and labour processes of NRM workers. The study aimed to help us get a better understanding of the practical challenges of capacity-building in the context of a shift in the governance of NRM programs towards environmental market mechanisms. In-depth interviews with 20 NRM professionals working with the Sustainable Farms initiative were conducted. Initial findings from the study highlight the range of labour issues experienced by NRM professionals like job insecurity and organisational competition. The data from the study information helps inform broader concerns about institutional capacity and effective conservation strategies at the regional level.

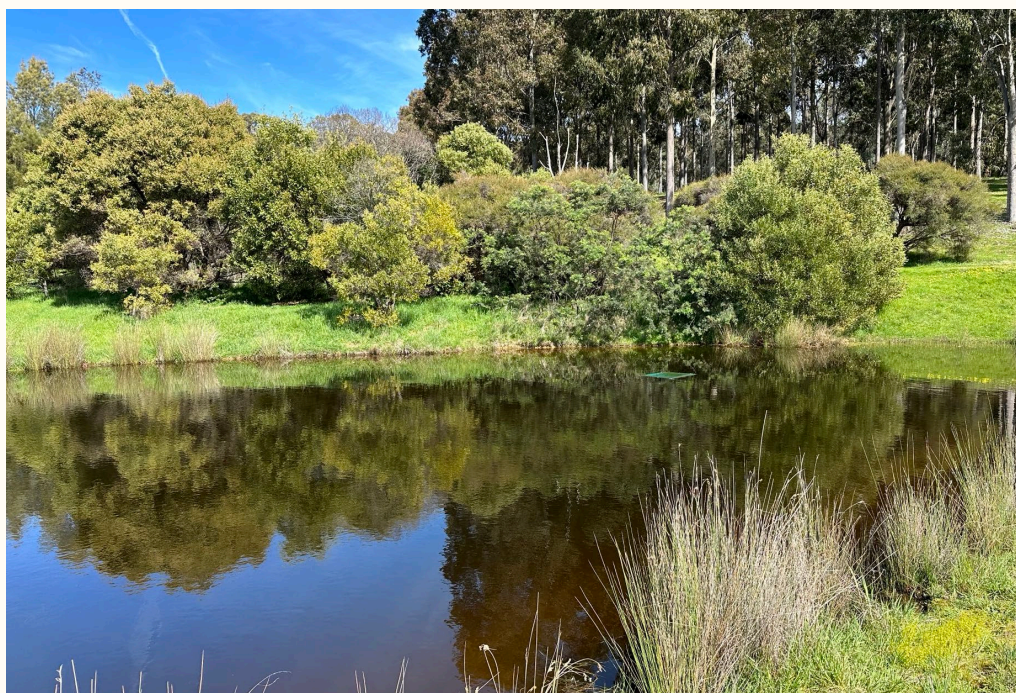
HIGHLIGHT: Farm Dams Study

Farm dams are a vital part of farm infrastructure and are critical for livestock production in Australia. Preliminary analysis of satellite imagery for NSW and north east Victoria indicated that 97% of farm dams were in poor condition. Our Farm Dams Pilot Study, conducted in 2019, demonstrated for the first time that enhancing farm dams by fencing to control livestock grazing and revegetating around a dam, could lead to rapid improvement in water quality.

The pilot results led to the expansion of the study to establish one of the largest studies of on-farm water storage. Over 126 sites were monitored for a period of three years and results demonstrated significant improvements in various water-quality measures, including reductions in turbidity, *E. coli*, and thermotolerant coliforms, associated with enhanced dams compared to control dams. These improvements in water quality have potentially significant benefits to stock production as reduced faecal contamination enhances water palatability. Stock exclusion also led to increased terrestrial and aquatic vegetation, potentially mitigating biodiversity loss in agricultural landscapes, and providing additional benefits such as nutrient filtration and erosion control. Rotational grazing was also demonstrated to provide some benefits offering a viable alternative in cases where complete exclusion is impractical.

A further study investigated how farm dams can influence woodland bird populations by exploring the responses of species richness and breeding behaviour in areas of where two or more natural assets are co-located. The findings showed that plantings or shelter belts located near dams increased the number of bird species, as well as bird breeding activity, compared to assets located separately from each other (ie. a dam without revegetation, or a planting without a nearby dam). This suggests that focusing habitat restoration efforts in areas adjacent to other natural assets, can significantly improve biodiversity on farms.

Our research findings confirm that even modest restoration efforts around farm dams can yield significant benefits for both agriculture and biodiversity conservation.



GOAL 4: The strategic objectives of the Sustainable Farms initiative are supported by effective management and investment

New project revenue

Sustainable Farms was very active in fundraising during 2023, securing an additional \$4,095,000 to deliver projects over the next five years.

Australian Government funding

- Department of Climate Change, Energy, Environment and Water (*Australian National University Sustainable Farms Initiative Funding*) – This grant will provide funding for the 2023-24 financial year for Sustainable Farms to leverage their experience in long-term ecological monitoring to provide a conceptual framework for supporting assessment and monitoring within the Nature Repair Market.
- Department of Climate Change, Energy, Environment and Water (*Services Contract for Agricultural Biodiversity Stewardship Pilot Monitoring*) – Sustainable Farms has been contracted to deliver a monitoring and evaluation program to support the government's Agricultural Biodiversity Stewardship Pilot program over a 5 year period.

Non-government and philanthropic funding

Non-government and philanthropic organisations made a significant contribution to the security and longevity of the Sustainable Farms initiative in 2023. It is this support that has allowed us to continue our valuable long-term monitoring in periods where government funding has contracted. Philanthropic funding has also been essential in supporting our science communication and outreach objectives.

- The William Buckland Foundation, who have supported the work of our field team in Victoria since 2019, generously extended their funding for our research and extension work in Victoria for a further 3 years.
- Landcare Victoria have contracted Sustainable Farms to provide technical expertise and evaluation support for the New Futures for Victorian Landcare project over the next 2 years.
- Landcare Australia Ltd provided financial support for the production and printing of the Farm Dams Technical Guide.

In addition, Sustainable Farms was the recipient of generous donations from several other trusts, foundations and private donors.

Additional fundraising activities

In the first half of the year Sustainable Farms also developed a number of collaborative project proposals to make applications for funding.

This included three applications to the Future Drought Fund:

- A tri-state project titled 'Accelerating the adoption of farm dam enhancements for drought resilience' was developed in collaboration with Landcare Victoria, NSW Landcare and Landcare Tasmania. The project proposal involved the roll-out of the Sustainable Farms train-the-trainer extension model for farm dams, with the majority of the funding to support Landcare networks to employ project officers to deliver extension activities. More than 30 letters of support were received from individual Landcare networks and groups for the application that was submitted to the Extension and Adoption of Drought Resilience Farming Practices Grant.

- The 'Enhancing Water Persistence in Farm Dams' project proposed a field-based trial to quantify how management practices designed to enhance vegetation influence water persistence and water temperature in farm dams. It would create a user-friendly decision tool for farmers to evaluate how management actions can improve water levels and water quality in their dams. This project partnered with Meat and Livestock Australia, University of WA, Deakin University and Nuveen. This was submitted to the Future Drought Fund Long-term Trials of Drought Resilient Farming Practices Program.
- The 'Quantifying the effects of on-farm native vegetation on soil health, carbon dynamics and drought resilience' project proposed a trial to compare potential influence of native vegetation types on the surrounding pastures by examining soil chemistry, microbiomes, water infiltration and water holding capacity. This would provide farmers with guidance on how and where to place vegetation to deliver benefits for their production system and maintain ecosystem services. This proposal was partnered with NSW Biodiversity Conservation Trust, NSW Local Land Services (Murray and Riverina), Trust for Nature (Victoria) and the North East Catchment Management Authority. This was submitted to the Future Drought Fund Long-term Trials of Drought Resilient Farming Practices Program.

We also partnered on a Natural Heritage Trust project proposal with the North East Catchment Management Authority. This project focused on the conservation of the threatened Growling Grass Frog through habitat enhancement and a translocation program, including enhancement of farm dams.

In May 2023, Sustainable Farms was invited to apply for funding from the Helen MacPherson Smith Trust. Our proposal requested funding to expand our existing program of outreach in Victoria. The key outcomes of that proposal were to deliver community-based approaches for farmers to leverage innovative funding solutions for the protection and restoration of natural assets on farms using high-quality data and science, with support for landscape planning processes.

While these funding applications were successful, we have developed strong relationships with the project partners and will continue to seek funding to advance these collaborations.

Project evaluation

First Person Consulting were engaged to undertake an independent evaluation of the Sustainable Farms initiative's challenges, achievements and effectiveness between 2018 and 2023. The evaluation will incorporate data from the 2023 Regional Wellbeing Survey. The final evaluation report is due for completion in April 2024.

Project team

Early last year our team (**Appendix 2**) welcomed Professor Andrew Macintosh from the ANU College of Law as the Sustainable Farms Research Director for Governance and Policy. Andrew and his research team offer expertise in environmental law that has enhanced the capacity of Sustainable Farms to engage in important environmental policy matters including biodiversity markets.

2023 also saw a review of the Sustainable Farms governance structure and the establishment of the Executive Research Committee. We are pleased to have Professor Andrew MacIntosh from the College of Law and Dr Katerina Kormusheva from the School of Business and Economics join the committee. The Executive Research Committee will provide leadership and support to facilitate cross-college collaboration and multi-disciplinary research outputs and policy engagement to support the Sustainable Farms Strategic Plan.

Staff development

In the pursuit of continuous growth and professional improvement, our team took part in numerous staff development initiatives during 2023. In March the research team came together to participate in a 3-day research writing workshop. This presented the opportunity to share knowledge and experiences as well as foster the skills of earlier career staff members.

Four staff members attended the Ecological Society of Australia Conference, demonstrating their commitment to keeping up to date with current ecological knowledge and networking with peers.



Sustainable Farms presentation by Dave Smith, Research and Extension Officer, at the Ecological Society of Australia Conference, July 2023

Financial report

Table 1: Sources of Income 2023

Income source	2017 - 2018	2019	2020	2021	2022	2023	TOTAL to end of 2023
ANU Central	\$100,000.00	\$50,000.00	\$50,000.00				\$200,000.00
ANU College of Science	\$100,000.00			\$50,000.00	\$50,000.00		\$200,000.00
ANU Fenner School of Environment & Society		\$50,000.00	\$50,000.00				\$100,000.00
Department of Agriculture & Water Resources		\$1,796,969.69	\$1,796,969.70	\$1,796,969.70			\$5,390,909.09
Department of Climate Change, Energy, Environment & Water						\$1,000,000.00	\$1,000,000.00
Riverina Local Land Services		\$55,000.00				\$41,960.00	\$96,960.00
Murray Local Land Services		\$13,500.00	\$1,500.00				\$15,000.00
Central Tablelands Local Land Services	\$27,000.00	\$1,500.00					\$28,500.00
Ian Potter Foundation	\$520,000.00	\$500,000.00	\$500,000.00	\$500,000.00	\$400,000.00		\$2,420,000.00
Landcare Victoria						\$80,000.00	\$80,000.00
Landcare Australia Ltd						\$27,270.00	\$27,270.00
Meat and Livestock Australia	\$102,130.04	\$125,986.86	\$96,719.30	\$20,925.17			\$345,761.37

George Alexander Foundation				\$505,000.00			\$505,000.00
William Buckland Foundation		\$126,840.00	\$128,737.00	\$133,549.00	\$122,670.90	\$155,000	\$666,796.90
Vincent Fairfax Family Foundation	\$300,000.00						\$300,000.00
Ross Trust				\$100,000.00		\$100,000	\$200,000.00
Wheen Bee Foundation		\$12,000.00	\$9,000.00				\$21,000.00
Kering SA		\$56,460.72	\$62,859.20				\$119,319.92
The Trustee for The A & E Finkel Foundation Trust					\$10,000.00		\$10,000.00
Private donors	\$260,001.70	\$43,857.00	\$62,540.00	\$62,725.20	\$7,321.62	\$115,374.67	\$551,819.19
Australian Museum Eureka Prize					\$10,000.00		\$10,000.00
Other survey services				\$2,370.45	\$1,564.50	\$3,213.00	\$7,147.95
Sales (printed resources & workshops)						\$11,036.25	\$11,036.25
Interest earned	\$3,577.81	\$1,597.85	-\$6,081.70	\$1,315.44			\$409.40
TOTAL INCOME	\$1,412,709.55	\$2,833,712.12	\$2,752,243.50	\$3,172,854.96	\$601,557.02	\$1,533,852.92	\$12,306,521.67

Table 2: Operating expenses by business area

Business Area	2017 – 2018	2019	2020	2021	2022	2023	TOTAL to end of 2023
Farmer network	\$441,647.61	\$563,317.94	\$555,042.77	\$684,172.84	\$838,311.23	\$763,809.00	\$3,846,301.39
Research	\$165,237.30	\$202,635.42	\$314,824.74	\$404,060.68	\$286,712.16	\$251,557.00	\$1,625,027.30
Communications and engagement	\$72,598.02	\$207,878.11	\$383,180.38	\$347,793.28	\$403,749.08	\$257,522.00	\$1,672,720.87
Project management and evaluation	\$309,018.23	\$430,419.21	\$286,667.11	\$294,128.66	\$308,314	\$402,301.00	\$2,030,848.21
Indirect costs	\$55,371.00	\$218,391.13	\$394,816.00	\$364,574.00	\$269,279.30	\$110,023.00	\$1,412,454.43
TOTAL EXPENSES	\$1,043,872.16	\$1,622,641.81	\$1,934,531.00	\$2,094,729.46	\$2,106,366.08	\$1,785,213.00	\$10,587,352.20

Table 3: Operating result

	2017 – 2018	2019	2020	2021	2022	2023	TOTAL to end of 2023
Total Income	\$1,412,709.55	\$2,833,712.12	\$2,752,243.50	\$3,172,854.96	\$601,557.02	\$1,533,853.00	\$12,306,930.15
Total Expenditure	\$1,043,872.16	\$1,622,641.81	\$1,934,531.00	\$2,094,729.46	\$2,106,366.08	\$1,785,213.00	\$10,587,353.51
Operating Result	\$368,837.39	\$1,579,907.70	\$2,397,620.20	\$3,525,745.70	\$2,020,213.92	\$1,719,576.64	\$1,719,576.64

Appendix 1

Academic publications

- Clayton, H., Hingee, K., Chancellor, W., Lindenmayer, D., van Dijk, A., Vardon, M. and C. Boulton (2024) Private benefits of natural capital on farms across an endangered ecoregion. *Ecological Economics* 218: 108-116.
- Lindenmayer, D., W. Blanchard, M. Evans, R. Beggs, T. Lavery, D. Florance, C. Crane, D. Smith, A. Siegrist and E. Lang (2023) Context dependency in interference competition among birds in an endangered woodland ecosystem. *Diversity and Distributions* 29(4): 556-571.
- Lindenmayer, D., W. Blanchard, D. Florance, R. Beggs, D. Smith, C. Crane, E. Lang, A. Siegrist, T. Lavery and E. Bowd (2023) Grazing regime effects on bird biodiversity overwhelmed by an interference competitor. *Biological Conservation* 283: 110085.
- Lindenmayer, D., B. C. Scheele, M. Young and M. Vardon (2023) The business of biodiversity—What is needed for biodiversity markets to work. *Ecological Management & Restoration* 24(1): 3-6.
- Lindenmayer, D. B., D. Florance, D. Smith, C. Crane, A. Siegrist, E. Lang, M. Crane, D. R. Michael, B. C. Scheele and M. J. Evans (2023) Temporal trends in reptile occurrence among temperate old-growth, regrowth and replanted woodlands. *PLOS One* 18(9): e0291641.
- Michael, D., J. L. O'Sullivan and D. Lindenmayer (2023) Implications of agricultural intensification (rock removal) on cryptozoic fauna. *31st International Congress for Conservation Biology 2023: ICCB 2023*.
- O'Sullivan, J. L., C. N. Foster, W. Blanchard, D. Florance, D. R. Michael and D. B. Lindenmayer (2023) Reversing habitat loss: An experimental test of the interactive effects of grazing exclusion and surface rock restoration on reptile conservation. *Journal of Applied Ecology* 60(9): 1778-1789.
- Smith, D. G., M. J. Evans, B. C. Scheele, M. Crane and D. B. Lindenmayer (2024) Co-location of multiple natural assets on farms increases bird species richness and breeding activity. *Agriculture, Ecosystems & Environment* 359: 108765.
- Vardon, M., Y. Chen, A. van Dijk, H. Keith, P. Burnett and D. Lindenmayer (2023) Conservation of the critically endangered Box-gum grassy woodlands with ecosystem accounting in Australia. *Biological Conservation* 284: 110129.
- Vardon, M. J. and D. B. Lindenmayer (2023) Biodiversity market doublespeak, *American Association for the Advancement of Science*. 382(6670): 491.

Appendix 2

Project team

