



Annual Report

2022/23



South West
NRM

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Acknowledgement of Country

South West NRM recognises the Noongar people as the traditional custodians of the South West and respects their practices of sustainable land and water management for upwards of 45,000 years in the region.

We value working alongside the Aboriginal community to care for Country and ensure that traditional ecological knowledge, skill and experience are incorporated into today's landcare practices, appropriately recognised and used for generations to come.

Ngala kaaditj Noongar moort keyen kaadak nitja boodja

Welcome from our chair

The year to June 2023 is the end of an era and the beginning of renewal with five board directors ending their terms at the AGM in November 2022, and four new directors being appointed, bringing a broad range of new skills and experiences. Two of the retiring board members, former Chair Bill Biggs, and Cliff Winfield had completed their maximum terms of eight years. We thank them particularly for their extensive contributions to the governance of the organisation.

We also reached the end of five years of Regional Land Partnership funding in June, with many successful outcomes as outlined elsewhere in this report. This is a significant milestone for the organisation and a lot of work has gone into preparing for the next five years. We are not stopping there though. Our South West NRM strategy has us seeking alternative sources of funding to enable us to deliver greater environmental benefits to the region. We cannot rely on government funding alone as we know there is much more that can be done if we can attract the right partners to support us and our Association members.

Since taking on the role of Chair of South West NRM, I have been hearing directly from our members that they need greater support to achieve the goals that they have identified through their own community consultation and work in the regions. Several workshops have been held resulting in the formation of a Members Advisory Committee. We look forward to that committee being able to bring the priorities of the Association members directly to the board.

We continue to work with other NRMs through our involvement in NRM WA and NRM Regions Australia to advocate for better outcomes for the environment through government policy and programs. Our new name, South West NRM, provides a stronger connection to such organisations. Look out for South West NRM being more prominent now that this has been rolled out.

Karen Boyce
Chair



Our board



Dr Campbell Thompson
Vice Chair



Dr Pete Di Bona



Tanya Bartram



Peter Rogers



Alexis Davy



Ann'Elisha Stephen

Welcome from our CEO

It's been another busy and productive year for the team at South West NRM. The wrapping up of a number of five-year Regional Land Partnership programs of work lets us get nerdy about the numbers! It's been a joy to look at the evidence of how we have shifted the dial in our region – making real progress in building healthier and more productive ecosystems.

We continue to develop our expertise in the areas of natural capital and environmental accounting. We're seeing what has in the past sometimes felt like two parts of our business, environmental conservation and sustainable agriculture, moving more closely together, as we all come to understand the power of biodiversity and the importance of managing a farm not just for peak productivity but also for long-term resilience.

There are so many highlights in a jam-packed year, but there are definitely a few standouts. In November of 2022 South West NRM co-designed and hosted NRM Regions Australia's Knowledge Conference in Margaret River. The experience of the event and feedback were second to none, with so many attendees telling us they left feeling really invigorated.

The second is the strides forward we have made in partnering with our Aboriginal communities. We're building relationships, building knowledge and getting excited about the environmental projects we can make happen together. Our involvement in Curtin University's ARC Training Centre for Healing Country has been particularly inspiring.

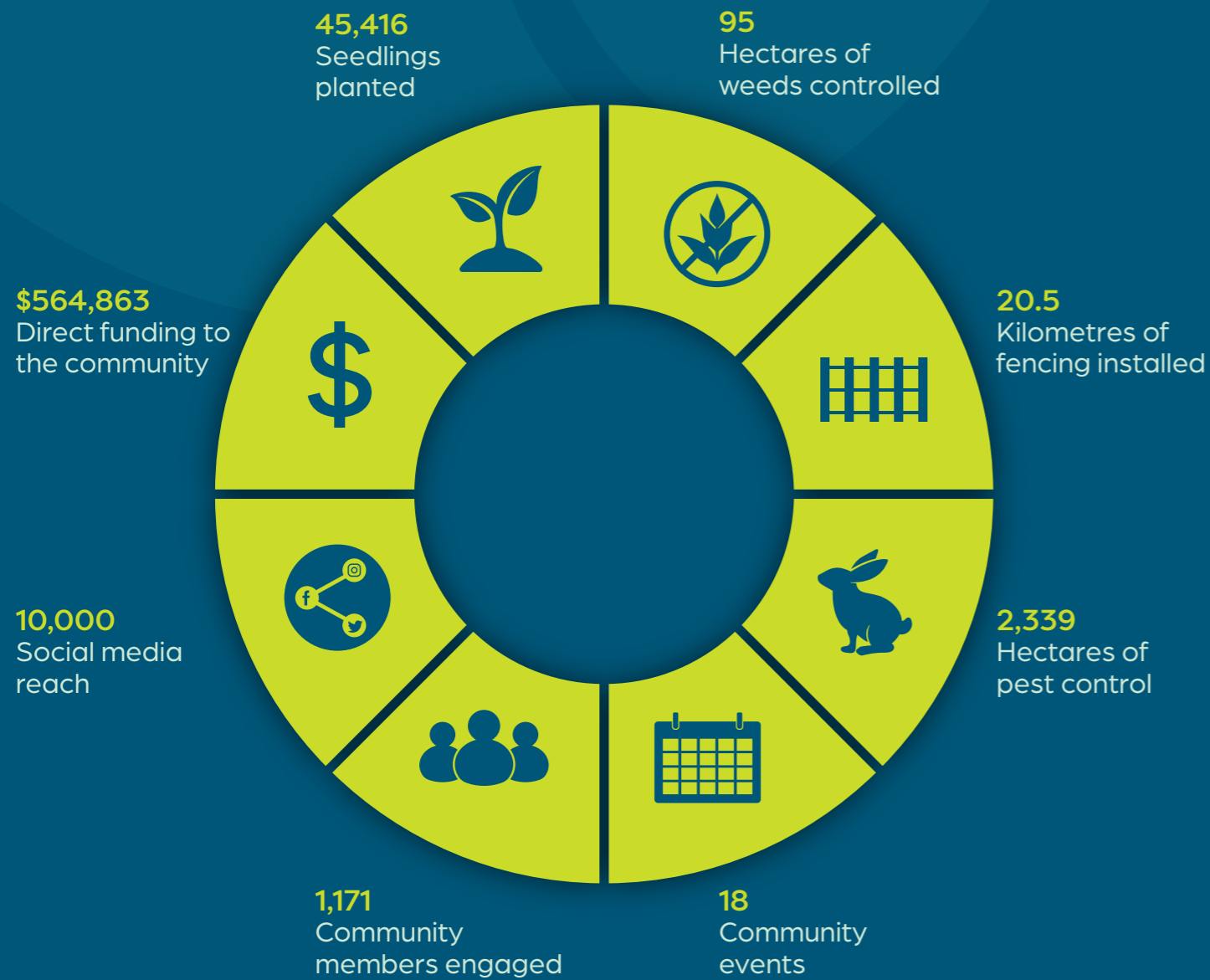
2023 brought with it the tender we submitted to Government for a program of work through to 2028. I could not be more proud of how the team worked together or the quality of our submission, which requested funding for a suite of vitally important work across the south west. I also commend the team for the quality of work in relaunching us as South West NRM!

We continue to enjoy working with the other NRM organisations around WA and across Australia and similarly working with our Association Members. Together we're stronger and can amplify our impact, caring for the wonderful places we're lucky to call home.

Sally Wilkinson
CEO



Our impact in 2022/23



Our funding partners



Our members



Future proofing farming

Managing vegetation on farm, targeting pollinators and farm resilience - 2018-23

South West NRM has worked with broadacre canola farmers and fruit orchardists to develop tailored revegetation programs that improve pollination rates.

Identifying and attracting beneficial pollinators can increase the productivity and resilience of farm businesses, as well as enhance habitats for native species.

Demonstration sites across the region tested innovative practices for increasing pollinator numbers, including planting unique species mixes for continuous food and shelter, interrow cropping, and hedge development using dense pollinator-friendly natives.

Key achievements:

- 98 ha revegetated to increase pollinators and improve crop pollination and pest management services from a range of insects.
- Five species identified as particularly valuable food sources for pollinators included in the revegetation mix. A further 21 valuable plant species identified.
- Rare and endangered species included in the revegetation mix for revegetation projects.
- *Hakea corymbosa* used as a dense pollinator-friendly wind-break.
- 84 bird and insect surveys undertaken to increase understanding of their abundance, distribution and activity.
- Two flowering calendars developed to guide farmers in plant selection to provide year-round food resources for beneficial insects.
- Traditional Ecological Knowledge on beneficial insects and plants imparted to landholders by local Traditional Owners through a series of one-to-one workshops.
- Twenty community engagement events attended by 250 people.
- Farmers educated on the risk of a Varroa mite incursion and potential mitigation strategies by attracting more diverse pollinators.
- 22.4 km of fencing protecting 163.1 ha of vegetation.

Future proofing farming

Transforming pollinator management using eDNA to improve productivity in avocado orchards in the South West - 2019-23

Food production systems are facing unprecedented pressure from climate change, loss of arable land, new pests and diseases, and declining pollinator species such as birds and insects. South West NRM supported a Curtin University research project investigating avocado pollinators using innovative environmental DNA technology.

Environmental DNA (eDNA) is collected from avocado flowers at participating orchards and, using their expelled DNA, laboratory analysis detects which species have been present within that environment.

This information was used to determine the distribution of beneficial, pollinating insects as well as 'antagonistic', non-beneficial species. Understanding how these species interact with crops will inform future pollinator management techniques, such as interrow planting of insect-attracting plants or species-specific pest control.

Key achievements:

- Research project confirmed that eDNA can be used as an effective tool to identify key insects visiting avocado flowers.
- Paper published in peer-reviewed journal.
- European honeybees, two species of hoverfly and two species of fly found to be the most likely to cross-pollinate avocados in South West WA.
- 50% of insects sampled close to orchards contained avocado pollen, suggesting that not all the insects captured contribute to avocado pollination.
- Four farm trials suggest that interrow cover cropping can improve the number of avocado pollinators in orchards.
- Integrated Pest Management Strategy and associated fact sheet produced.
- Two case studies on interrow cover cropping produced.
- Seven events delivered, reaching over 280 people.

Future proofing farming

Regional agriculture landcare facilitator

Much of South West NRM's work in sustainable agriculture is driven by our Regional Agriculture Landcare Facilitator, or 'RALF' – one of 65 positions across the country funded by the Australian Government to build the future of sustainable agriculture.

RALFs support farmers, industry and community groups to adopt new and innovative practices and are the key contact for landholders wishing to become more sustainable. South West NRM's RALF provides clear and credible information where it is needed, to enable better decisions and facilitate partnerships to solve problems.

Key achievements:

- Delivered 'Benchmarking sub-soil carbon' project and 'Pasture Challenge'.
- Published six e-newsletters.
- Assisted with one event, two meetings and five Grazing Matcher meetings.
- Published three articles.
- 184 posts and 75,223 impressions on Sustainable Agriculture X account.
- Engaged stakeholders through community meetings with Western Dairy, Leschenault Catchments Council, Geocatch, Lower Blackwood LCDC.
- Supported external organisations to develop funding applications.



Future proofing farming

Benchmarking sub-soil carbon

South West NRM undertook soil sampling at ten farms across the region, as part of a program aimed at helping farmers to measure, benchmark and build soil carbon and reduce their carbon footprint.

In 2021, South West NRM supported eight farmers to develop carbon accounts to find out where greenhouse gases were being emitted in their operations. A central question arising from this work was how soil carbon levels can be measured and increased in exchange for carbon credits to offset emissions.

To address this question, sampling was undertaken at forty sites over three months. A 'farmer-friendly' protocol was developed, allowing landholders to confidently sample to 30cm and monitor changes in soil carbon over time. This will help them decide if they want to run a soil carbon project to offset their emissions.

South West NRM's new sampling protocol, based on CSIRO's SCArP methodology, was developed in liaison with WA's Regional Soils Coordinator Jen Clausen. Results of the soil tests and paddock histories were collated and a Soil Carbon Monitoring Protocol developed.

Key achievements:

- South West farmers trained in carbon accounting to understand and monitor their emissions profile.
- Soil sampling at ten farms.
- 'Farmer-friendly' soil carbon monitoring protocol developed to assist decisions around soil carbon farming.



Future proofing farming

Pasture challenge

Four groups of producers are taking part in the 'Pasture Challenge' to overcome soil constraints and improve productivity on a paddock in Yoongarillup, near Busselton.

A range of soil tests were conducted at the site in late 2022, with results outlined to producers at a field day in February by local agronomist, Graham Mussell. Producers voted on which constraints should be addressed to increase productivity.

The four chosen groups developed separate agronomic packages to trial at the site. The four treatments, plus a control, were replicated in three plots. During the trial, farmers were invited to regular pasture cuts to see the effect of their treatments.

In 2023/24, groups will be judged on several weighted factors including yield, cost per tonne of dry matter produced, feed quality and a range of soil health indicators, including the effect of soil biology on cotton underwear to be buried in each treatment.



Future proofing farming

Drought resilience adoption & innovation hub

South West NRM is one of eight Regional Node Leads to help local producers and their communities adapt to drought and the changing climate.

The Regional Node Leads were selected by the South West WA Drought Resilience Adoption and Innovation Hub, hosted by Grower Group Alliance, as a key component of the Australian Government's \$5 billion Future Drought Fund. They are tasked with providing guidance on drought and climate resilience, and shaping transformational measures for farming systems, their industries and communities.

In its role as Regional Node Lead for Bunbury and the broader region (including north of Bunbury and Perth) South West NRM, in partnership with Perth NRM, gathers and shares knowledge, coordinates local activities and supports Hub activities to increase the uptake of drought resilience practices and technologies.



Future proofing farming

Natural capital accounting

South West NRM is a Natural Capital Measurement Partner for the Farming for the Future program, which aims to measure and optimise on-farm natural capital for increased resilience and productivity.

Our team of ecologists visit participating farms in the region to undertake natural capital assessments which measure ecological integrity, pasture condition and soil condition. On-farm ecological, financial and operational data are combined for detailed analysis by the Farming for the Future team. A Natural Capital Account and benchmarking report, worth \$35,000, is produced for each farm at no cost.

Data from 130 farms included in the first round of the Farming for the Future program has been used to build a pilot benchmarking platform to enable decision-making about natural capital investments. Applied at a national scale, it is hoped that research findings will support an acceleration in the adoption of nature-positive practices across the whole agricultural industry.

Places are available for phase 2 of the program and interested landholders are encouraged to get in touch.

Carbon farming planning

Round one of DPIRD's Carbon for Farmers Voucher Program incentivised landholders to investigate opportunities to undertake carbon farming projects.

South West NRM assisted a range of landholders in assessing the operational and financial feasibility of using the 'Environmental Plantings' method to sequester carbon in trees. Importantly, co-benefits such as building biodiversity, improving soil health and addressing constraints such as erosion and salinity were also factored in.

Participating landholders received a bespoke report outlining the costs and benefits of undertaking a project on their site, factors to be taken into consideration and a detailed planting plan.

Environmental conservation

Creating safe havens for the western ringtail possum and priority nationally-listed threatened species in the South West – 2018-23

The South West is home to 167 EPBC Act-listed threatened species, of which 25 are critically endangered, 82 are endangered, 59 are vulnerable and three are conservation dependent.

This program aimed to improve the trajectory of the western ringtail possum/ngwayir, numbat, chuditch, woylie and malleefowl by enhancing habitat and reducing threats.

Key achievements

On-ground habitat improvement:

- 143 ha of native revegetation.
- 240 ha of weed control and 26 km of fencing to protect 229 ha of habitat.
- 64 Land for Wildlife property assessments undertaken on privately managed remnant vegetation.
- Two rope bridges constructed in Busselton and Dunsborough for western ringtail possums.

Western ringtail possum rehabilitation:

- 126 rehabilitated western ringtail possums tracked across seven releases to determine survival rates and test management interventions.
- Survival rates increased from 5% in the first release to 67% in the final release. Factors found to improve survival rates were sustained fox control and predator awareness training.

Feral predator control:

- 58,000 ha of feral animal control.
- Four trials of Felixer grooming traps completed across 56,000 ha.
- These trials recorded 7,000 sightings of feral cats and 41,000 sightings of native fauna from almost two million images.
- Cat activity reduced by up to 49% after Felixers were deployed for three months.



Environmental conservation

Improving our understanding of threatened species:

- 224 fauna surveys covering 76,000 ha.
- 5,303 ha of potential malleefowl habitat surveyed and recently active mounds found at Merilup Nature Reserve.
- A detailed camera trapping survey of the entire Wellington National Park completed to record the distribution of four threatened and three priority mammal species.

Engaging the community in threatened species conservation:

- 165 community engagement events delivered, reaching 7,000 people.
- Community members helped to plant 15,005 trees over 9.5 ha and build 39 artificial dreys for western ringtail possums.
- 1,600 responses received to responsible pet ownership surveys in the greater Bunbury area.
- Cat enclosure rebate program supported residents of the Greater Bunbury region to contain 44 cats, potentially saving over 50,000 native animals over 10 years.
- Proportion of cat owners in the Bunbury area keeping their pets contained increased from 56% in 2020 to 74% in 2023.
- Increase in proportion of dog owners containing their pets at night from 32 to 43%.
- Over 350 members of new Responsible Pet Owners SW WA Facebook group.



Environmental conservation

Protecting WA Black Cockatoos South West – 2020/23

South West NRM is committed to halting the decline of the region's iconic and endangered Carnaby's black cockatoo, *Zanda latirostris*. The primary threat to this species is a reduction in breeding success resulting from the ongoing loss of breeding habitat.

South West NRM worked with five local landcare groups, as well as Birdlife Australia and Badgebup Aboriginal Corporation's Ngoolark Rangers, to undertake extensive surveys of Carnaby's cockatoo nesting areas.

Nine local landholders worked with the Shire of Kent to undertake on-ground habitat improvement works including fencing of remnants, revegetation and weed control. All on-ground conservation works were completed within 12 km of known Carnaby's breeding sites to ensure they can be used by the birds during their breeding season.

Key achievements

- 176 community survey responses reported 238 cockatoo sightings.
- Citizen science training events provided by Birdlife Australia staff to teach community members, natural resource management officers and rangers how to undertake cockatoo nesting surveys.
- 29 cockatoo surveys, covering 3,617 ha of remnant vegetation.
- Two previously unknown breeding areas for Carnaby's cockatoos were recorded bringing the total in the South West NRM Region to four.
- Four farm management plans developed for private landholders to assist in the conservation of Carnaby's cockatoo habitat on their properties.
- 23 km of fencing installed to exclude livestock from 176 ha of remnant vegetation.
- 20 ha of revegetation to provide food for nesting Carnaby's cockatoos.
- These trials recorded 7,000 sightings of feral cats and 41,000 sightings of native fauna from almost two million images.
- Cat activity reduced by up to 49% after Felixers were deployed for three months.

Environmental conservation

Using eDNA to improve management of the Margaret River burrowing crayfish

South West NRM worked with eDNA Frontiers at Curtin University to help protect the critically endangered Margaret River burrowing crayfish using innovative environmental DNA, or 'eDNA', technology.

The Margaret River burrowing crayfish, or *Engaewa pseudoreducta*, is threatened by habitat loss through land clearing, farm dam construction, groundwater extraction and the drying climate. To roll out conservation programs, it is vital to first find out where their populations are located. Currently, the only way to confirm their presence is to dig them out of their burrows by hand, destroying these complex structures in the process.

A non-destructive method of identifying where the crayfish burrow was developed, using trace amounts of DNA left behind in the soil. Over a hundred crayfish burrows from their three known habitat sites were identified. Unfortunately, the Margaret River burrowing crayfish was confirmed at only one of these three sites, where six out of ten burrows tested positive for Margaret River burrowing crayfish eDNA.

This newly developed eDNA monitoring method will improve the management of this species, allowing for their distribution and threats to be better understood.

Key achievements

- Developed a non-destructive method of identifying Margaret River crayfish burrows, including the development of a species-specific eDNA assay.
- Detected presence of the critically-endangered species at known habitat sites, using eDNA samples.
- More than 110 crayfish burrows identified in three known habitat areas.
- Margaret River burrowing crayfish confirmed at one of these sites.



Environmental conservation

South West wetlands of international importance -2018/23

The South West region is home to three internationally-significant, Ramsar-listed wetlands:

- Vasse Wonnerup;
- Muir-Byenup;
- Lake Toolibin.

These wetlands and the ecosystems they support are under threat from water quality decline due to agricultural practices, land clearing and urbanisation, as well as feral and domestic species, weed invasion and a changing climate.

South West NRM worked with local communities, regional partners and land managers to manage and mitigate these threats and improve the overall health and function of these waterways.

Key achievements

- 23 field days and workshops.
- 76 fauna surveys.
- 247 ha of revegetation.
- 3000 ha of pest animal control.
- 2 km fencing installed.
- Repairs and improvements to bund wall at Toolibin Lake succeeded in diverting saline water away from the wetlands.
- 570 community members participated in the 'Bay OK' behaviour change program with GeoCatch.
- New engineering designs for retrofitting urban water drains in Busselton developed.
- Aboriginal Rangers undertook on-ground works at Toolibin Lake.
- Monitoring data collected for research into acid release at the Muir-Byenup wetlands.
- Felixer cat grooming trap trial at Muir-Byenup demonstrated up to a 60% decrease in feral cat activity.
- Nitrogen use efficiency trial at Vasse Wonnerup found that improved nitrogen management regimes can reduce runoff into the wetlands.



Contact us

For more information on our programs or to discuss working with us, please contact us:

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