



WOOLMARK PLUS

Journey to nature positive



About Woolmark

Having been at the centre of the wool industry for 60 years, Woolmark has always taken a collaborative approach to advancing wool innovation and championing quality, long-lived products.

As a not-for-profit organisation, we focus on research, marketing, and certification of wool quality.

Through Woolmark+, we are bringing a new dimension to our partnerships with woolgrowers, supply chain, brands and consumers through this journey to nature positive.

Our purpose

A better tomorrow

We are committed to bettering the lives of all those involved in the wool industry, from farmers and sheep to manufacturers, through to retailers and consumers.

Innovative by nature

We drive a sustainable culture of innovation to deliver tangible solutions to research, development and marketing across the global wool industry.

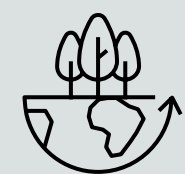
Slow fibre for slow fashion

As one of the world's most well-known brands, the Woolmark logo promises uncompromising quality for natural, long-lasting, recyclable products.

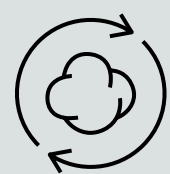
Looking beyond net zero, to nature positive.

At a time when 'carbon tunnel vision' is causing unintended consequences for nature and livelihoods, we're looking beyond net zero to nature positive. "Nature-positive means halting and reversing nature loss by 2030, measured from a baseline of 2020,"¹ with approaches to restoration optimised for carbon sequestration, biodiversity recovery and livelihood benefits.

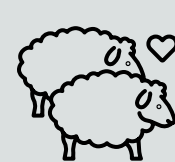
Woolmark+ presents a roadmap of initiatives to accelerate the wool industry on the global journey to nature positive by:



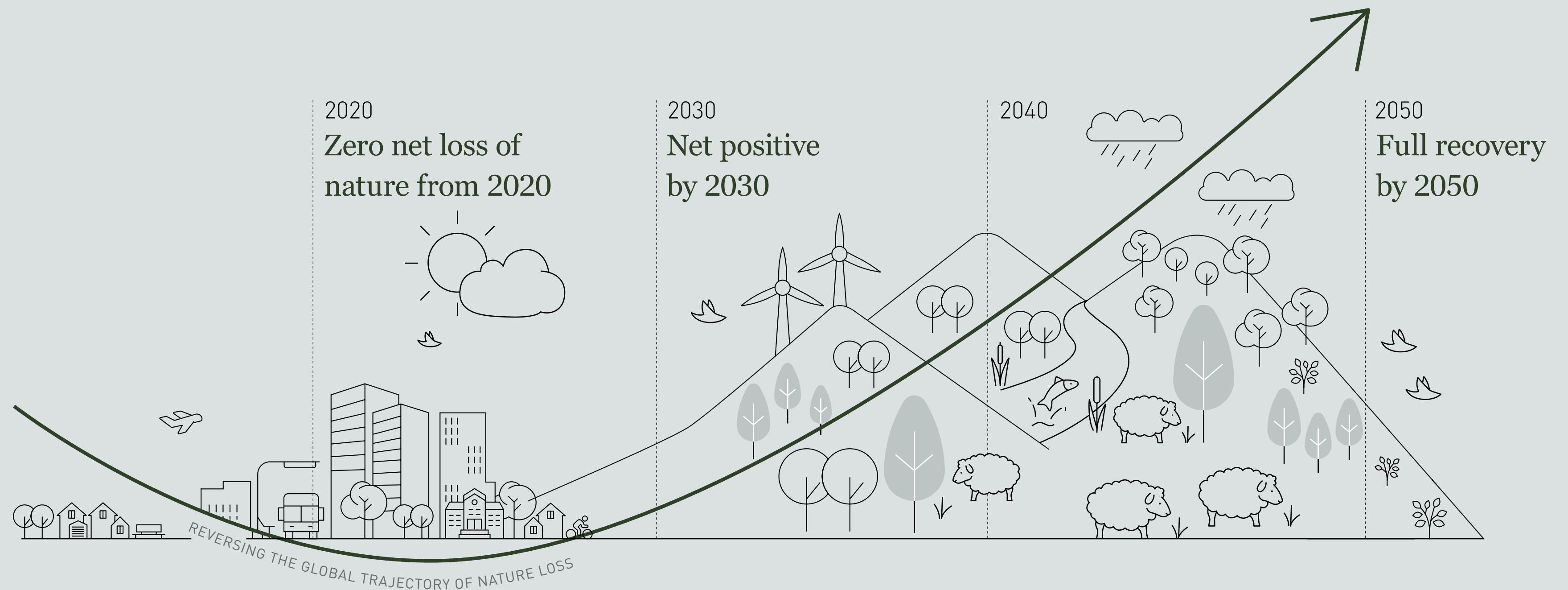
Accelerating nature positive production



Delivering the circular fibre of choice



Supporting thriving flocks and communities



¹ Locke et. al (2021), A Nature-Positive World: The Global Goal for Nature.

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Executive Summary

Setting the scene

The global fashion industry is at a critical juncture, facing increasing pressure to adopt more sustainable practices.

Meaningful progress has been slow, despite over 15 years of dialogue and pledges from brands. Governments worldwide are now stepping in, introducing new legislation to reduce waste, greenhouse gas emissions and chemical usage in the textile industry.

These new laws are not just regulatory hurdles but also opportunities for transformation. There is growing commitment by brands to address their Scope 3 emissions and actively support supply chain initiatives, particularly those led by farmers to improve environmental performance.

Our industry stands on the brink of significant change, driven by a collective responsibility to create a more sustainable future.

A promising future for wool

As a renewable, recyclable and biodegradable fibre created in nature, wool has sustainability at its core.

Woolgrowers work hand in glove with nature, presenting opportunities for profound transformation that could see the wool industry move to the forefront of the international transition towards sustainability and circularity

We know well-managed farms have a high carbon sequestration potential, providing significant opportunity for woolgrowers to play a leading role in decarbonising the fashion industry. But we also know such a transition requires support, investment and time, which are all key elements of the Woolmark+ roadmap.

Introducing Woolmark+

Woolmark+ presents a roadmap of initiatives designed to help woolgrowers and value chain partners achieve their sustainability targets, from reducing emissions to optimising productivity.

Our roadmap extends beyond environmental stewardship to fostering resilience and delivering tangible commercial advantages throughout wool's value chain. By prioritising climate action, resource management, and animal wellbeing, we're paving the way for sustainable livelihoods in the wool industry worldwide.

Ensuring woolgrowers get a seat at the table and their voices are heard

A key part of this roadmap is ensuring wool-growing practices are clearly understood by those developing standards and laws; particularly those who are developing policies that will shape the global textiles industry.

Enabling brands to reliably source the wool they need

Woolmark+ aims to ensure tailored solutions are available at scale to meet the differing sustainability goals and strategies of brands.

WOOLMARK+: Pathways to Progress



Reducing emissions

There are two key levers for the wool industry to reduce emissions from on-farm wool production: short-term carbon reductions and removals, and long-term methane mitigation. Improvements in flock productivity, breakthroughs in genetics research and emerging feed supplement technologies promise to reduce methane emissions from sheep.

Through insetting, we're seeking to bridge the gap between supply and demand for value chain emissions reductions through reduction and removal activities on wool farms. The Insetting Program will connect brands that have Scope 3 emission reductions targets or other environmental commitments, with woolgrowers delivering these outcomes, through private environmental market transactions. Woolgrowers will have access to new and complementary sources of revenue, while supporting their value chain to reduce their Scope 3 emissions.



Harmonising outcomes and measures for environmental performance

Our first priority is clearly defining regenerative, nature positive farming to ensure woolgrowers and brands are aligned on the environmental outcomes they're seeking to achieve.

In collaboration with Farming for the Future and La Trobe University, we developed science-based, practical and cost-effective metrics to measure trends in environmental performance on wool farms that truly reflect the complex and variable environments.

By improving the credibility of nature positive and regenerative claims and harmonising the measurements used across third-party certifiers, this can increase the availability of desired wool. Adoption of cheaper, remotely sensed and more reliable metrics will increase woolgrower adoption of these schemes, further increasing supply.



Promoting transparency

Our new Woolgrower and Woolmark Licensee spotlights on www.woolmark.com provide an opportunity for woolgrowers and our supply chain partners to showcase the incredible work they do. This will give a voice – and a face – to the hands that grow the amazing wool fibre and those that turn this fibre into high quality wool products.



Quality-assured, long-lasting, circular products

For the past 60 years Woolmark has been independently certifying wool products to deliver quality assured, long-lasting garments. Acknowledging wool has continued to be the most recycled apparel fibre globally for more than 200 years, we're introducing the Woolmark Recycled Specification which supports the shift from a linear to a circular production model, reducing waste and pollution.

Our journey to nature positive



1.1 OUR AMBITION
AND OBJECTIVES



1.2 OUR ROADMAP

Our ambition and objectives

Turning wool from a natural fibre
into a fibre 'for' nature



To woolgrowers, nature is everything – they work with nature to leave the land in a better condition for the next generation.



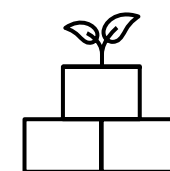
Supporting woolgrowers caring for nature and building climate resilience

While our Woolmark+ roadmap aims to provide pathways to deliver positive outcomes for climate and nature, it is the people in our industry who hold the key to progress. Woolgrowers have a deep commitment to protecting and sustaining their land and animals, improving it for future generations. Our roadmap is designed to be pragmatic and innovative in supporting woolgrowers' ongoing work to manage natural assets for the benefit of their business, animals, customers and the environment.

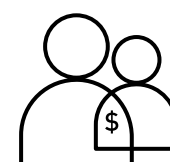
Woolmark+ will accelerate their progress through a range of initiatives and programs that:



Develop practical, science-based methods to mitigate and remove carbon emissions on farms.



Recognise and build on existing practices to enhance ecosystems and biodiversity on farms.



Identify collaborative investment opportunities to scale positive impact across the wool value chain.

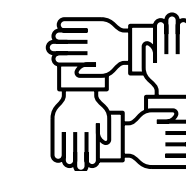
Recognising wool supply chain commitments to sustainable innovation and positive impact

The journey to nature positive is not limited to raw material production on the farm. The global wool supply chain has been proactive in navigating the path to less intensive production, with significant decarbonisation strategies in place and innovative processing and bio-based alternatives being developed.

Woolmark+ will accelerate their progress through a range of initiatives and programs that:



Showcase their sustainability commitments and innovations, encouraging transparency in wool production.



Align with best practice chemical usage, ensuring the wool supply chain are recognised as leaders in reducing impact and future-proofing recycled wool supply.

Woolmark+ objectives

ONE

Accelerate nature positive production

OBJECTIVE

Unite the wool industry around a nature positive future to enhance ecosystem and business resilience and deliver shared value to all stakeholders.

OUTCOMES

- Scaling and evidencing practices that build natural capital on-farm and improve net emissions performance.
- A nature positive wool industry that prioritises and embeds regenerative practices.
- Connecting with partners and investors to advance emissions reductions and nature-based solutions.
- Moving beyond carbon tunnel vision and placing greater emphasis on enhancing nature and biodiversity and ensuring sustainable livelihoods.
- Woolgrowers are more resilient, adapting to the changing climate.

Woolmark+ objectives

TWO

Deliver the circular fibre of choice

OBJECTIVE

Deliver natural and circular fibre solutions for the textile industry and broader economy.

OUTCOMES

- Development, promotion and recognition for wool as the natural and circular fibre of choice.
- Increased rates of reuse and recycling.
- Wool manufacturing free of chemicals of concern.
- Greater market share for wool.
- Higher revenues and value for woolgrowers, brokers, processors and brands.

Woolmark+ objectives

THREE

Support thriving flocks & communities

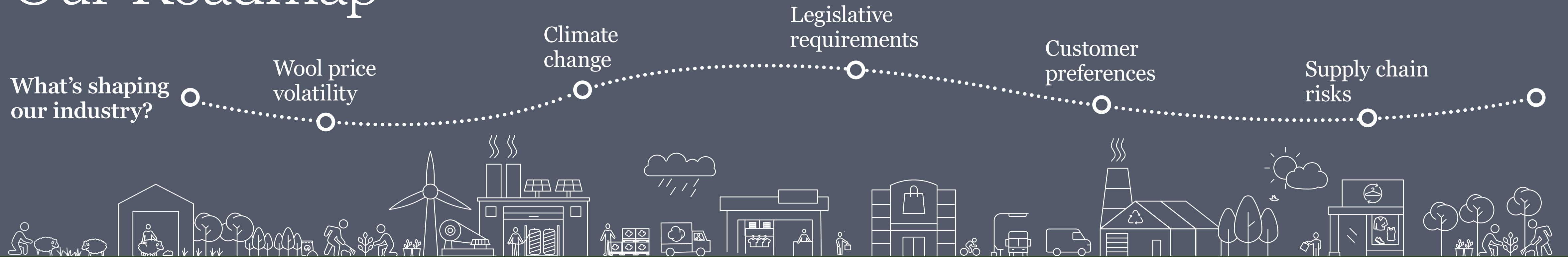
OBJECTIVE

Enhance social impact by ensuring sustainable livelihoods for woolgrowers and safeguarding sheep wellbeing.

OUTCOMES

- Wool-growing farms are productive, profitable and sustainable.
- A secure financial future for the next generation of woolgrowers.
- Sheep are healthy and well cared for in accordance with the Five Domains of Animal Welfare.
- Farm systems and practices are in place to achieve optimal lifetime health outcomes.
- Demonstrate industry best practice through monitoring and transparency.
- Market share secured for sustainable, traceable products through certified nature positive wool supply.

Our Roadmap



Our stakeholder needs



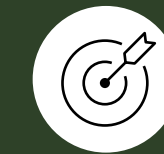
Investment and financial stability



Affordable and simplified measurement and reporting tools



Traceable and certified materials



Emissions reduction solutions

What are the opportunities for wool?

1. Regenerating nature

2. Emissions reduction

3. Transparency and traceability

4. Advancing circularity

5. Collaborative investment

Woolmark+ focus area



Accelerate nature positive production



Deliver the circular fibre of choice



Support thriving flocks and communities

Woolmark+ initiatives

Insetting Program

Nature Positive Impact Program

Woolmark Nature Positive Farming Specification

Reducing methane emissions

Carbon Storage Partnership

Enhance sheep productivity and profitability

Woolmark quality assurance program

Woolmark Recycled Specification

Removing chemicals of concern

Traceable wool production

New environmentally-friendly pest and disease management solutions

Supporting woolgrowers to manage flystrike and those seeking to transition away from mulesing

Enhancing ewe and lamb wellbeing

Wool benefits and industry challenges



2.1 WOOL BENEFITS



2.2 INDUSTRY CHALLENGES

Wool benefits

Renewable

Wool is harvested from sheep and their fleece continually regrows from one year to the next.

Each wool fibre grows around 6mm per month and just like human hair, it continues to grow, even after it has been shorn.



Grazing on grass, every year sheep will produce around **4.5kg** of new fleece; making wool a completely renewable fibre source.¹

¹ Australian Wool Production Forecast Report, April 2024

Storing carbon

Wool fibre is a biogenic carbon store – storing carbon from the atmosphere in the fibre for its entire life before eventually returning to the atmosphere as part of the natural carbon cycle, just like trees and soil.

Wool production sequesters carbon into the landscape via trees and soil.



In a recent pilot study², 11 wool-growing farms were estimated to be capturing and store more CO₂ than they generate - a net **1539 tCO₂-e** per year.

² Natural Capital Accounting Project Summary, wool.com, 2021

Building natural capital

With careful grazing management, sheep build natural capital by improving ground cover, soil health and biodiversity. Rotational grazing manures the soil, adding biota and increasing the presence of deep rooted perennials, which in turn improve mineral cycling and soil ecosystems.

Wool sheep often graze land unsuited to other forms of agriculture, providing opportunities to support the functioning of these landscapes.



89% of Australian woolgrowers are following multiple practices to boost soil health³.

³ AWI Wool Industry Profile, May 2020

Wool benefits

Lower impact garments

Wool garments are worn for longer and washed less often compared with synthetic fibre garments, therefore are expected to have less impact on the environment during the use phase of their lifecycle.



Wool garments have the lowest water and energy use per wear⁴.

⁴Global Wardrobe Study, The Woolmark Company x Nielsen, 2018

Biodegradable

As a natural fibre, wool biodegrades on land and in water and research shows that wool does not contribute to microplastic pollution⁵.



Untreated wool and machine-washable wool were found to biodegrade readily in terrestrial⁶ and marine⁷ environments.

⁵ AgResearch, Microfibre Pollution and the Marine Biodegradation of Wool, 2020

⁶ Collie, S. et. al, (2024), Biodegradation behavior of wool and other textile fibers in aerobic composting conditions, International Journal of Environmental Science and Technology, <https://link.springer.com/content/pdf/10.1007/s13762-024-05802-6.pdf>

⁷ Collie, S., Brorens, P., Hassan, M.M. et al. Marine Biodegradation Behavior of Wool and Other Textile Fibers. Water Air Soil Pollut 235, 283 [2024]. <https://doi.org/10.1007/s11270-024-07093-6>

Recycled and recyclable

Wool is the most recycled apparel fibre in the world, supported by a well-established and commercially viable recycling industry.



Wool garments are **300%** more likely to be donated compared to garments of other major fibre types⁸.

⁸ Russell, S., Swan, P., Trebowicz, M., Ireland, A. (2016). Review of Wool Recycling and Reuse. In: Fangueiro, R., Rana, S. (eds) Natural Fibres: Advances in Science and Technology Towards Industrial Applications. RILEM Bookseries, vol 12. Springer, Dordrecht. https://doi.org/10.1007/978-94-017-7515-1_33

Industry challenges

The wool industry has long thrived on wool's reputation as a premium, durable, and high-quality fibre. However, shifting consumer preferences towards low-impact products, coupled with new regulatory measures and auditing requirements, are creating both challenges and opportunities for wool growers and brands.

Here we outline several intersecting trends shaping the future of the wool industry.

For woolgrowers

Wool price volatility

Lower prices are leading woolgrowers to consider other uses for their land.

Climatic events and long-term climate change

Drought, flooding and other extreme weather events, hazards to flocks.

Loss of natural capital

Soil erosion, water scarcity, flora and fauna loss, rise in pests due to ecosystem imbalance.

Environmental measurement

Complexity and cost of environmental measurement.

Younger generations

Young people from the regions often relocate to cities and are unwilling to stay in the regions and take on farming as a career.

Availability of workforce

Shortage of skilled workers in rural and regional areas.

For brands and supply chain

Supply chain risks

Looking to mitigate reputational and regulatory risks and disruption in supply chains.

Traceable and certified materials

Growing demand for traceable and certified materials to verify product and supply chain claims.

Understanding sustainability credentials

Confusion around what low impact looks like in fashion and textiles.

Availability of certified textile supply

Sourcing volume and cost required to support sustainability objectives and product lines.

Cost of green transition

Ability and willingness for consumers to pay more, costs needing to be absorbed by brands.

The future of wool: five opportunities



3.1 REGENERATING NATURE



3.2 REDUCING EMISSIONS



3.3 TRANSPARENCY
AND TRACEABILITY



3.4 ADVANCING RECYCLING



3.5 COLLABORATIVE INVESTMENT

1. Regenerating nature

Woolgrowers are responsible for safeguarding their land and sheep, giving the fibre a connection to nature.

73% of Australian sheep producers undertake deliberate activities to maintain, measure or enhance biodiversity on their property .

Source: Sheep Sustainability Framework, National Producer Survey 2024



When managed properly, sheep can regenerate the land on which they graze by:

- Initiating the regeneration of pastures
- Controlling and managing weed infestation
- Depositing naturally occurring fertilisers
- Increasing soil health
- Producing a wool income, enabling farmers to also invest in sustainable farm management

By further enhancing grazing and land management practices that are already designed to preserve natural assets, wool-growing properties can increase their capacity to support rich ecosystems and carbon storage through:

- Native planting to increase vegetation and biodiversity.
- Better soil health through planting and grazing practices to optimise carbon storage, and water and nutrient levels.



2. Emissions reduction

Wool-growing properties represent an opportunity for investment in nature-based solutions with the potential to deliver cost effective climate mitigation between now and 2030.

In the largest wool producing country in the world, Australian woolgrowers are stewards of over 65 million hectares of land which can play a role in generating substantial emissions reductions and removals for the textile industry.

There are two key levers for the wool industry to focus on to mitigate GHG emissions in on-farm wool production:



Short term Carbon reductions & removals

Native tree plantings, regenerative practices and soil management strategies offer potential for increasing carbon sequestration on farms¹⁰. These solutions offer woolgrowers an opportunity to secure a new income stream from environmental markets.



Long term Methane mitigation

Improvements in flock productivity, breakthroughs in genetics research and emerging feed supplement technologies promise to mitigate methane emissions from sheep.

¹⁰ K. Phukubye a, M. Mutema b, N. Buthelezi a, P. Muchaonyerwa a, C. Cerri c, V. Chaplot. On the impact of grassland management on soil carbon stocks: a worldwide meta-analysis, Geoderma Regional, Volume 28, March 2022, e00479

3. Transparency and traceability

The wool industry has introduced new initiatives and invested in technology to advance the wool value chain in response to a shift in demand for more transparent, traceable products, including:



New Australian Wool Traceability Hub, with 90% of Australian wool bales expected to be traced by July 2025.



Established and trusted on-farm and supply chain certifications.



Widespread sustainability reporting including a world first Australian Sheep Sustainability Framework and reporting by manufacturers along the entire wool value chain.

4. Advancing circularity

Wool is the optimum fibre to advance a circular economy. It is inherently circular, being naturally renewable and biodegradable, as well as the most recycled fibre with a well-established recycling industry dating back more than 200 years.

Wool is readily recycleable for several reasons:

Attributes

As is the case for virgin wool, recycled wool is highly valued for its inherent attributes such as breathability, insulation, odour resistance and flame resistance.

Infrastructure

infrastructure already exists for turning wool into new clothing (closed loop) or other products (open loop), supporting higher volume recycling for wool compared with other fibre types.

Certification

wool is the only fibre to have a fibre content specification and assurance program, easing the sorting process for recyclers through the Woolmark certification program.

Market value

with the established markets that exist for recycled wool, and its higher value, recyclers have greater incentives to collect and recycle waste wool products, reducing risk of disposal via incineration or landfill.

The recycling potential of wool can be readily increased through a circular approach to fibre processing, garment design and waste collection. By increasing rates of wool recycling, our industry can further reduce the lifetime environmental footprint of wool products.

5. Collaborative investment



Woolgrowers can't be green if they're in the red. The need for collaborative investment and financing to support woolgrowers in delivering nature stewardship is critical.

Significant pools of capital are being directed toward nature stewardship activities globally. Investing in nature-based solutions in the wool industry – including R&D, methane mitigation, increasing soil carbon and reforestation – offers a combination of financial, environmental, and social benefits, making it a compelling choice for global investment community.

Taking action together



5.1 ACCELERATE NATURE
POSITIVE PRODUCTION



5.2 DELIVER THE CIRCULAR
FIBRE OF CHOICE



5.3 SUPPORT THRIVING
FLOCKS AND COMMUNITIES

Woolmark+ initiatives

This roadmap highlights some key initiatives that woolgrowers, the wool supply chain and brands can explore for enhancing biodiversity, reducing emissions and realising financial and operational benefits.

The initiatives identified on this page are currently undergoing investigation and we're seeking feedback from all stakeholders into their development. Other initiatives featured on the next page are already underway, highlighting the journey to nature positive has been long underway for the wool industry.

Insetting Program

OBJECTIVES: EMISSIONS REDUCTION

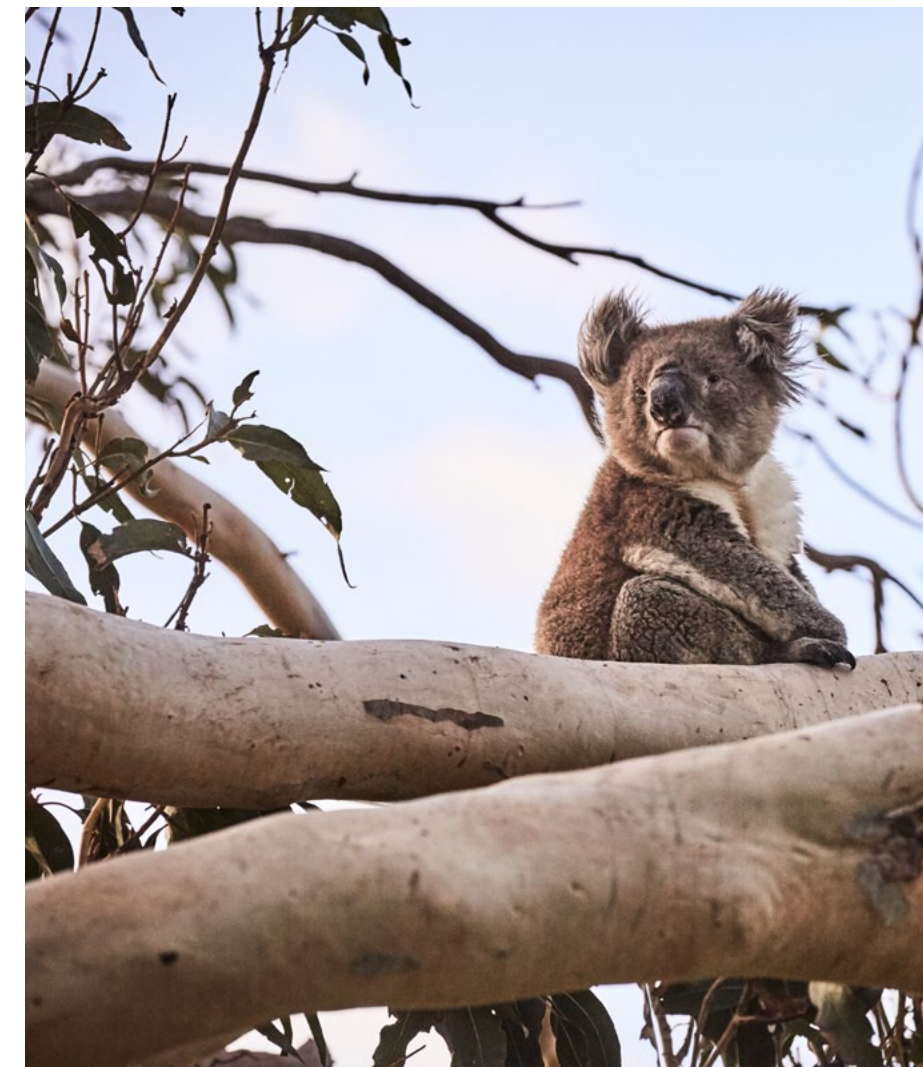
Insetting is an opportunity to enable emissions reductions in the wool supply chain at scale. This program aims to create the foundation of an Australia-wide wool insetting market, connecting global fashion brands looking to meet Scope 3 emissions targets with Australian woolgrowers to reduce emissions on-farm through nature-based solutions.



Woolmark+ Nature Positive Impact Program

OBJECTIVES: ACTIVATE FINANCING FOR NATURE POSITIVE TRANSITION

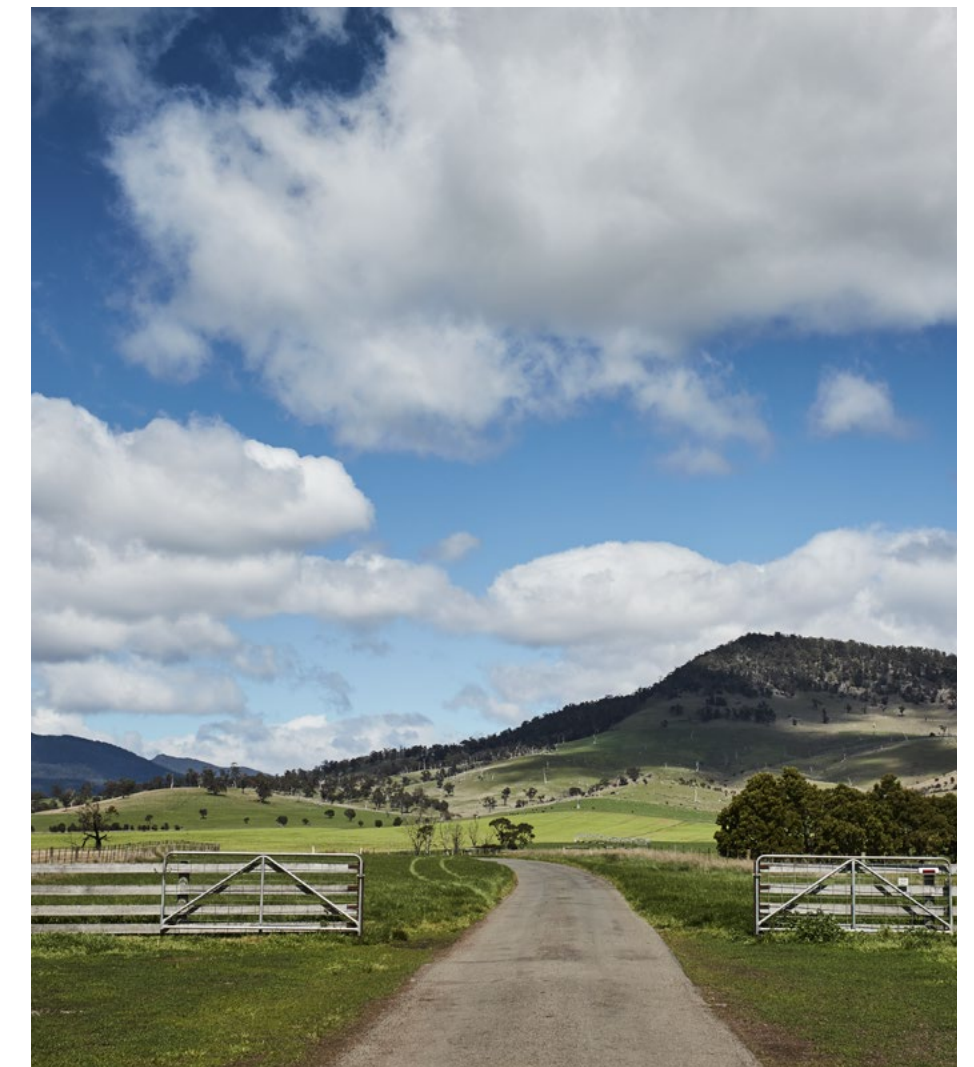
The transition to nature positive requires support and investment. The Woolmark+ Nature Positive Impact Program will connect investors with independent programs at leading institutions, presenting a portfolio of investment opportunities spanning across research, development, education and conservation, to accelerate a nature positive future.



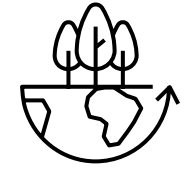
Nature Positive Farming Specification

OBJECTIVES: IMPROVED ENVIRONMENTAL PERFORMANCE MEASUREMENT

This program will develop science-based, practical metrics for assessing and reporting on environmental outcomes on wool farms for woolgrowers, on-farm certification schemes and brands. This initiative aims to ensure that environmental performance claims are supported by evidence, providing greater clarity and certainty for woolgrowers, brands and consumers.



Woolmark+ initiatives



Accelerate nature positive production



Methane Emissions Reduction in Livestock

Collection of nine research and development projects working towards identifying and assessing strategies to reduce and offset emissions from grazing sheep using feed additives.



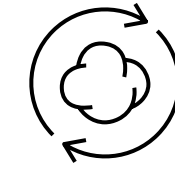
Carbon storage on wool farms

Research and training to support Australian woolgrowers understand and take up profitable and sustainable pathways to reduce carbon emissions and increase carbon storage in soil and vegetation.



Enhanced sheep productivity and profitability

10-year Merino Lifetime Productivity (MLP) research project captures data from different environments, genetics and Merino types to improve sheep productivity and profitability, through increased feed efficiency, resilience, survival and lower methane.



Deliver the circular fibre of choice



Woolmark Quality Assurance Program

Continuing to uphold wool quality standards and promote long-lived products.



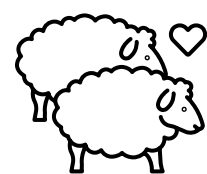
Woolmark Recycled Content Specification

Extending the Woolmark Certification program to include a specification to quality test and certify products with recycled wool content.



Removing chemicals of concern in the supply chain

Working with the Woolmark licensee network to understand where chemicals of concern are still in use in wool manufacturing and phase these out.

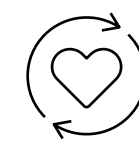


Support thriving flocks and communities



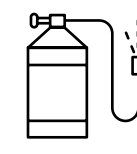
Transparency in wool production

Provide opportunities on www.woolmark.com for Australian woolgrowers and Woolmark licensees to showcase their sustainability commitments, helping brands and retailers access more transparent information on sustainable wool production.



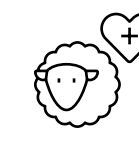
Enhancing ewe and lamb wellbeing

Combination of research and education projects to help woolgrowers implement best practice management for lambing.



New environmentally friendly pest and disease management solutions

Research into new bio-rational pesticides to manage pests to reduce residue and environmental impact and deliver extended periods of protection.



Supporting woolgrowers to manage flystrike

Education program to support woolgrowers to manage flystrike and reduce reliance on mulesing, along with a framework to support woolgrowers seeking to transition away from mulesing and proactively engage brands and industry stakeholders to align support and approach.

Join us on the journey to nature positive

Get in touch
woolmarkplus@wool.com

