

# *Optimising Kangaroo Management in South Australia*

## **Landscape Priorities Fund Project**

Final report

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# Contents

<b>Executive Summary .....</b>	<b>3</b>
<b>Introduction.....</b>	<b>6</b>
Background .....	6
The Kangaroo Partnership Project (KPP) .....	7
Proposed high-level outcomes .....	8
<b>Project outcomes and deliverables .....</b>	<b>9</b>
Outcome 1: A formal collaborative strategic partnership that is resourced to coordinate and plan strategic responses to an issue that threatens environmental and economic sustainability .....	11
Outcome 2: Development and testing of new approaches to kangaroo management and prevention of the adverse ecological, production and animal welfare impacts of over-abundance.....	18
Outcome 3: Increased engagement of land managers across multiple land uses and systems in effective and sustainable kangaroo management practices and research. ....	29
<b>Insights and recommendations .....</b>	<b>32</b>
Key learnings, successes, and challenges.....	32
Opportunities and innovative ideas .....	37
Recommendations for kangaroo management in South Australia and beyond.....	38
Recommendations: Next steps for the Kangaroo Partnership Project.....	41
<b>Conclusion .....</b>	<b>45</b>
<b>Appendices.....</b>	<b>46</b>
Appendix A: Communication and Engagement Plans	
Appendix B: Project Activity Report	
Appendix C: Workshop Report	
Appendix D: Kangaroo Management Factsheet Final Draft	
Appendix E: KPP Grant Program Documents	
Appendix F: Project 2 Final Report (Australian Wildlife Services)	
Appendix G: Project 3 Final Report and Project Extension Proposal (Nature Conservation Society of South Australia)	
Appendix H: Economic Analysis of the South Australian Kangaroo Industry Report and Factsheet	
Appendix I: July – December 2023 Coordinator Workplan Priorities	
Appendix J: Gawler Ranges Citizen Science Pilot Proposal Draft	

## Executive Summary

The *Kangaroo Partnership Project* was a two-year project funded through the Landscape Priorities Fund, led by the SA Arid Lands Landscape Board (SAALLB), and facilitated by an independent coordinator through a contracted coordination provider, Sevenses Creative PTY LTD.

The project aimed to address the ‘wicked’ issue of impact-causing kangaroo populations posing risks to animal welfare, conservation and land management, cultural values, and the livelihoods and mental health of local communities. The project stemmed from record kangaroo populations across South Australian regions in 2017, which were then followed by a massive die-off due to the years of drought that followed<sup>1</sup>.

The project successfully united stakeholders from across South Australia with a vested interest and expertise in the field, while also collaborating with counterparts from other states.

**Successful outcomes and deliverables** include:

- A formal partnership model that can effectively engage key stakeholders and provide a space to work together to achieve “win-win” outcomes for environmental, economic, social, and cultural values within the complex context of kangaroo management.
- The development and support of networks and partnerships that explore learning from other states and jurisdictions, collate and disseminate scientific data and evidence-based models of success, including:
  - Delivery of two stakeholder engagement workshops to inform project themes.
  - Working with the NSW Kangaroo Management Taskforce and Bush Heritage Australia staff to co-coordinate a kangaroo management workshop at NRM Regions Australia’s NRM Knowledge Conference 2022, including talks by experts in conservation management, animal welfare, social science, and more.
  - Working with the PIRSA Agricultural Kangaroo Taskforce (AKT) to co-deliver an economic analysis of the kangaroo harvesting industry in South Australia to inform industry development.
  - The formation of a NRM Regions Australia Kangaroo Management Community of Practice
- A first of its kind grant funding program for kangaroo management delivering trials, demonstrations and research aligned with the themes prioritised through the stakeholder workshop process, including supporting:
  - A collective of land managers to manage kangaroos at a landscape scale in the SAALLB region.
  - The delivery of a public awareness campaign – A Kangaroo Conversation – on social media to increase public understanding and social licence for kangaroo management (Nature Conservation Society of South Australia)
  - The delivery of a report exploring pathways to increase kangaroo value, providing land managers with management options that can meet environmental and economic outcomes (Australian Wildlife Services)

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<sup>1</sup> Wilson and Edwards 2019, **Professional kangaroo population control leads to better animal welfare, conservation outcomes and avoids waste**, *Australian Zoologist*, <https://doi.org/10.7882/AZ.2018.043>

- The engagement of champions for education and awareness raising around kangaroo management issues through 'A Kangaroo Conversation' and other media and outreach opportunities

**Recommended priorities** for kangaroo management in South Australia and beyond that emerged from the project are:

- 1. National coordination and leadership**
  - a. Greater political leadership and national coordination on kangaroo management
  - b. An established self-sustaining national community of practice for NRM organisations
- 2. Land manager support and community engagement**
  - a. Greater support for land managers in their management of kangaroos
  - b. First Nations-led conversations on kangaroo management, and support for contributions to the national conversation and decision-making
  - c. A national public conversation on kangaroos to increase awareness and establish a norm of ethical kangaroo management.
- 3. On-ground innovative projects and research**
  - a. First Nations-led projects on kangaroo management that deliver both positive environmental, cultural, and social outcomes.
  - b. Partnerships with animal welfare experts and organisations to explore animal welfare concerns around kangaroo management and explore shared solutions.
- 4. Industry development**
  - a. Increased ability for the harvesting industry to meet harvesting quotas
  - b. Increased consumer demand for kangaroo meat

**Key considerations** for future iterations of the *Kangaroo Partnership Project* or similar projects are:

- 1. Focus on kangaroo management priorities that are best addressed by the strengths of the KPP model** and network, specifically:
  - a. **Supporting land manager engagement** and supporting land managers to manage kangaroos on their properties and at a broad landscape scale.
  - b. **Facilitating learning and knowledge sharing opportunities** within and between NRM organisations on a state and national level and working with relevant government departments and relevant stakeholders to support alignment and collaboration.
  - c. **Coordinating and supporting opportunities for community education and increased awareness** and understanding of kangaroo management in South Australia
  - d. **Funding and providing support for on-ground and future facing projects** that explore and trial pathways to improve kangaroo management.
  - e. **Providing expertise and guidance to relevant external projects** that have clear implications for kangaroo management but do not have an explicit and direct land management focus, *e.g., industry development projects.*
- 2. Ensure appropriate resourcing** to support KPP coordination and engagement activities.
- 3. Extend the project length to a minimum of three years** to allow the time and resources for more engagement activities, more impactful on-ground projects designed to result in longer-term sustainable impacts, and First Nations input.

4. **Create memorandums of understanding to clarify the nature of collaboration and support from partners.**
5. **Expand the project beyond the rangelands to include all regional South Australian Landscape Boards to allow for coordinated and meaningful change on the state-wide level.**

## Introduction

This report provides a summary of the SA Arid Lands Landscape Board's project *Optimising Kangaroo Management in South Australia – a partnership approach to improving economic and landscape resilience*, hereafter referred to as the *Kangaroo Partnership Project*.

The *Kangaroo Partnership Project* was a two-year project funded through the Landscape Priorities Fund that aimed to assist in managing the significant threat to the environment posed by impact-causing populations of kangaroos, and ultimately improve the landscape and economic resilience of communities in regional South Australia.

The project was led by the SA Arid Lands Landscape Board (SAALLB) and facilitated by an independent coordinator from Sevenses Creative who played a pivotal independent role through partnership facilitation, stakeholder engagement, and acting as a key contact for members of the public and stakeholders interested in engaging with the project and trialling shared solutions.

This report summarises the project activities and how they have delivered on the three key project outcomes as identified in the project plan. It also reports on key insights from the project, including identified opportunities, challenges, and learnings from the three funded projects and the work of the independent coordinator. The report also presents priorities for improving the effectiveness of kangaroo management in South Australia and beyond, as well as guidance for future projects focused on this vital and complex issue.

## Background

In South Australia, populations of kangaroos – Western Grey Kangaroos (*Macropus fuliginosus*), Eastern Grey Kangaroos (*Macropus giganteus*), Euros/Common Wallaroo (*Macropus robustus*) and Tammar Wallabies (*Macropus eugenii*) – can reach numbers that cause negative environmental and economic impacts in certain areas. These populations present a 'wicked' issue, with risks to animal welfare, conservation and land management, cultural values, and the livelihoods and mental health of local communities if not managed appropriately.

Kangaroo species have a natural "boom-and-bust" population cycle that follows changes in resource availability. The "boom" occurs when resources are plentiful and breeding occurs very effectively, and the "bust" happens when resources become scarce, and females cease breeding and may starve. Since European settlement, kangaroo numbers have significantly increased in some areas, due to land management practices, increased access to artificial water sources, increased pasture availability, and the removal of predators (i.e., dingoes)<sup>2</sup>.

Impact-causing kangaroo populations can result in land degradation, biodiversity loss, and disruption of healthy ecosystem function. On pastoral land they contribute to total grazing pressure, impacting livestock industries and sustainable farming practices (e.g., paddocks left to regrow between periods of livestock use). These impacts are exacerbated during periods of drought when resources are already scarce.

Current understanding of the total economic costs of kangaroo impacts is limited in South Australia, with estimates generally based on simplified representations of livestock interactions and/or based on perceived rather than measured costs.

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<sup>2</sup> Morris and Letnic 2017, **Removal of an apex predator initiates a trophic cascade that extends from herbivores to vegetation and the soil nutrient pool**, *Proceedings of the Royal Society B: Biological Sciences*, <https://doi.org/10.1098/rspb.2017.0111>

Unsustainably high populations can also pose risks to public safety and wellbeing through increased risk of vehicle accidents and the mental health implications for communities. These mental health implications are particularly severe for land managers on the ground who may witness mass die-off during drought periods, including Traditional Owners for whom these kangaroos are particularly significant. Starvation deaths also pose substantial animal welfare and disease risks to the kangaroos themselves.

While the risks are clear, there remain significant concerns around animal welfare and social licence issues with regards to kangaroo management. Animal welfare groups indicate concerns about the empirical justifications for kangaroo management (e.g., survey and impact assessment methods), and ethical approaches to harvesting practices (e.g., joey euthanasia). In addition, public and media responses to kangaroo management, and the kangaroo harvesting industry, can be highly variable, leading to stakeholder perception that public perceptions around kangaroo management are a significant challenge to effective management<sup>3</sup>. Research suggests social license is not a broad community issue, but rather an issue for around 20% of Australians<sup>4</sup>, who are opposed to kangaroo management due to animal welfare or animal rights concerns. Many in the community are expected to be largely neutral towards kangaroo management, which may not prohibit management but also does not provide motivating context for significant policy change or political leadership on the issue.

### Goals and vision of the project

A collaborative approach to improve kangaroo management was recognised as the most effective strategy for generating and maintaining sustainable solutions for this multifaceted issue. By engaging South Australian stakeholders with a vested interest and expertise in the field, along with collaborating with interstate counterparts, we can enhance the capacity of the entire sector and achieve science-backed and demonstrated improvements in management outcomes. The ultimate goal is to strengthen this capacity proactively before the next drought occurs.

## The Kangaroo Partnership Project (KPP)

The need for the Kangaroo Partnership Project stemmed from record kangaroo populations across South Australian regions in 2017, which were then followed by a massive die off due to the years of drought that followed. The high kangaroo numbers contributed heavily to grazing pressure across the landscape with threats to native plant species at a time when properties had largely destocked, and the landscape was unable to cope with the large numbers.

In 2021, a joint statement on improving kangaroo management was released as part of a special issue of the Ecological Management and Restoration journal<sup>5</sup>. One of the suggestions from this joint statement was that:

*“Positive change ... requires an empathetic, science-based collaborative and coordinated approach to improve management of kangaroos in Australia, which in turn requires building a broad social mandate for reform.”*

Led by the SA Arid Lands Landscape Board (SAALLB) in partnership with landscape boards across five South Australian Landscape regions, the *Kangaroo Partnership Project* involved landholder, producer, kangaroo industry, conservation, First Nations, government, and animal welfare organisations.

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<sup>3</sup> Gregg et al. (in prep), see video presentation on <https://www.youtube.com/watch?v=JXtPtyjSkc8>

<sup>4</sup> Sharp 2015, **Commercial kangaroo harvesting: the animal welfare implications for dependent young**, PhD Thesis, <https://doi.org/10.26190/unsworks/18642>

<sup>5</sup> Read et al. 2021, **Improving Kangaroo Management: A Joint Statement**, *Ecological Management & Restoration*, <https://doi.org/10.1111/emr.12467>

It aimed to find the common ground between environmental, economic, social, and cultural interests that provide a basis for collaboration and shared responsibility for kangaroo management.

The project aims were to:

- Optimise Kangaroo management in South Australia, a partnership approach for improving landscape and economic resilience.
- Achieve through a collaborative model that respects animal welfare, cultural, conservation, environmental, economic, and social values.
- Connect the community and partners to information and the 'state of play' in kangaroo management in South Australia.

The *Kangaroo Partnership Project* funding contract was confirmed in July 2021 and an independent coordinator brought on to coordinate the project in November 2021. The formal closure of this two-year project was June 2023 however an extension for an additional six months has been possible through project savings.

## Proposed high-level outcomes

### Long term outcomes

This two-year project was the first critical stage in achieving the longer-term outcomes for kangaroo management, namely:

- a) Improved capacity to limit the impacts of kangaroo overabundance on production and conservation values.
- b) Increased utilisation of harvest quotas
- c) Increased financial return to kangaroo harvesters, necessary to retain accredited operators.
- d) Growth in the market for kangaroo products, regionally, statewide, and nationally

### Expected outcomes of the project

The project aimed to improve SA's collective capability to manage kangaroos sustainably through collaboration, knowledge sharing, on-ground demonstrations, and promotion of effective landscape-scale strategies. This aimed to:

- a) Protect our natural capital, support post-drought landscape recovery and improve landscape resilience to future drought - by reducing severe competition for feed where livestock are appropriately managed, maintaining ground cover where stock have been removed, reducing erosion risk and sustaining productivity.
- b) Provide economic stimulus for regional communities, including pastoralists and regional harvesting and processing businesses and conservation organisations, through potential income for landholders from the harvesting of kangaroos, and the investigation of new niche markets for high quality products.
- c) Increase uptake, of 'whole-of-system' approaches to landscape management, that consider total grazing pressure (of livestock, pest, and native species).
- d) Improve animal welfare outcomes, through improved management of kangaroo numbers prior to drought.
- e) Promote more 'natural' kangaroo demographics and genetics by reducing the focus on harvesting of large males.
- f) Help to achieve the 'social license' required by the sector to expand markets; and
- g) Foster a strong and enduring partnership to continue to deliver kangaroo management outcomes beyond short term funding cycles.

## Project outcomes and deliverables

The Kangaroo Partnership Project aimed to meet the following three key tangible outcomes:

1. A formal collaborative strategic partnership that is resourced to coordinate and plan strategic responses to an issue that threatens environmental and economic sustainability.
2. Development and testing of new approaches to kangaroo management and prevention of the adverse ecological, production and animal welfare impacts of over-abundance.
3. Increased engagement of land managers across multiple land uses and systems in effective and sustainable kangaroo management practices and research.

In this section of the report, we discuss how these three outcomes were met, key enablers of these outcomes, and resulting learnings.

The final project activity report can be found in Appendix B. The activity report is structured around six key deliverables that were further refined by the coordinating committee following the stakeholder engagement workshops (Table 1).

**Table 1.** Summary of project deliverables. See more detail about how these were delivered in the project activity report (Appendix B).

Proposed deliverable	Refined deliverable	Status	Relevant outcome/s
<b>Partnership coordination</b> Establish a cross-regional collaborative Kangaroo Management Partnership and coordinator	Formal partnership model equipped to operate long term.	Delivered	<b>Outcome 1</b> <b>Outcome 3</b>
<b>Partnership strategy development</b>	Development of networks and partnerships that explore learning from other states and jurisdictions, collate and disseminate scientific data and evidence-based models of success.	Delivered	<b>Outcome 1</b>
<b>Information and strategy review</b>		Delivered	<b>Outcome 1</b>
<b>Industry engagement</b>		Delivered	<b>Outcome 3</b>
<b>On-ground trials</b> Design and deliver on-ground trials to identify key trigger points for intervention and demonstrate to land managers the value of investment in managing total grazing pressure. This will deliver outcomes for Sustainable Agriculture, Landscape Restoration, Drought Recovery and Climate Change Adaptation (through emissions reduction and improved drought recovery).	Delivery of on-ground trials and research.  Engage champions for education and awareness raising around kangaroo management issues.  Increased 'social licence' for land managers and industry to operate ethically.	Delivered, with less focus on on-ground projects due to changing priorities	<b>Outcome 2</b> <b>Outcome 3</b>
<b>Monitor movements and impacts after bushfires</b> Monitoring of movement from bushfire ravaged regions and the heightened impact on neighbouring regions/landscapes. Managing grazing pressure in recovery zones as recovery of vegetation occurs to support recruitment for endangered species threatened by grazing impacts of over abundant kangaroos.		Not delivered due to changing priorities	<b>Outcome 2</b>
<b>Long-term planning and adaptation</b> Research associated with boom/bust trends relating to kangaroo numbers and introducing long range planning and adaptation measures to minimize environmental and economic impacts alongside animal welfare concerns.		Partially delivered due to changing priorities.	<b>Outcome 2</b>

## **Outcome 1: A formal collaborative strategic partnership that is resourced to coordinate and plan strategic responses to an issue that threatens environmental and economic sustainability**

**Summary**     *Outcome met*

### **Delivery approach**

#### **Communication and Engagement Plans**

A Communication and Engagement Strategy and respective plans were created to guide the project's partnership with industry stakeholders (Appendix A). The focus on engagement and collaboration promoted problem-solving and shared responsibility for achieving project outcomes. The plans covered:

- Stakeholders: Identified all relevant parties to ensure project ownership and maximum results.
- Key Messages: Proactively communicated project objectives to increase stakeholder advocacy and prevent negative stories.
- Channels: Utilised multiple communication methods to reach diverse stakeholders based on their preferences.
- Resources: Optimised communication timing and budget for efficient resource use.
- Objectives: Ensured effective engagement and communication with all stakeholders involved in the partnership.

#### **Steering committee and partnership model design**

To reach outcome one a Kangaroo Partnership Project Steering Committee (KPPSC) was established consisting of expert representatives from the broad cross-sector of kangaroo management, including representatives from Department for Environment and Water, SA Landscape Boards, conservation organisations, pastoralists, First Nations, and animal welfare. While regular communication with First Nations was sought it was difficult to engage a single member on the committee resulting in the commitment to hosting a Yarning circle where multiple First Nations groups can be involved (see *Implications and Recommendations*). The purpose of the committee was to support project direction and administer strategic and technical advice as required, to a resourced Project Coordinator. The makeup of the Steering Committee was based around finding a balance between the other state level kangaroo committees' membership and amplifying local and community voices into this different approach for facilitating outcomes through this project.

A priority at the outset, was ensuring the coordinator role was not from a particular part of the sector, nor an employee of any of the Landscape Board partners, to ensure there were no biases or perceptions of predetermined outcomes. Given the division and varied value propositions across the range of vested interests, impartial leadership and expertise was critical to setting up an authentic partnership that could harness the trust of newcomers to the kangaroo conversation.

A broader network of approximately twenty external organisations with a vested interest in kangaroo management pledged their support to form a strategic partnership model tasked to unpack the multi-layered issues and strategise solutions for improvement together.

A partnership model was designed (Figure 1) allowing for continuous growth in stakeholder participation, to ensure all sectors were represented and the varying viewpoints were being captured and considered. Flexible movement between the scale of participation levels allowed for partners to receive and contribute to the project through various means such as funding, time, resources,

knowledge, and expertise as they had the capacity to do so, or simply receive information and have a greater understanding of the issues and options to address them.

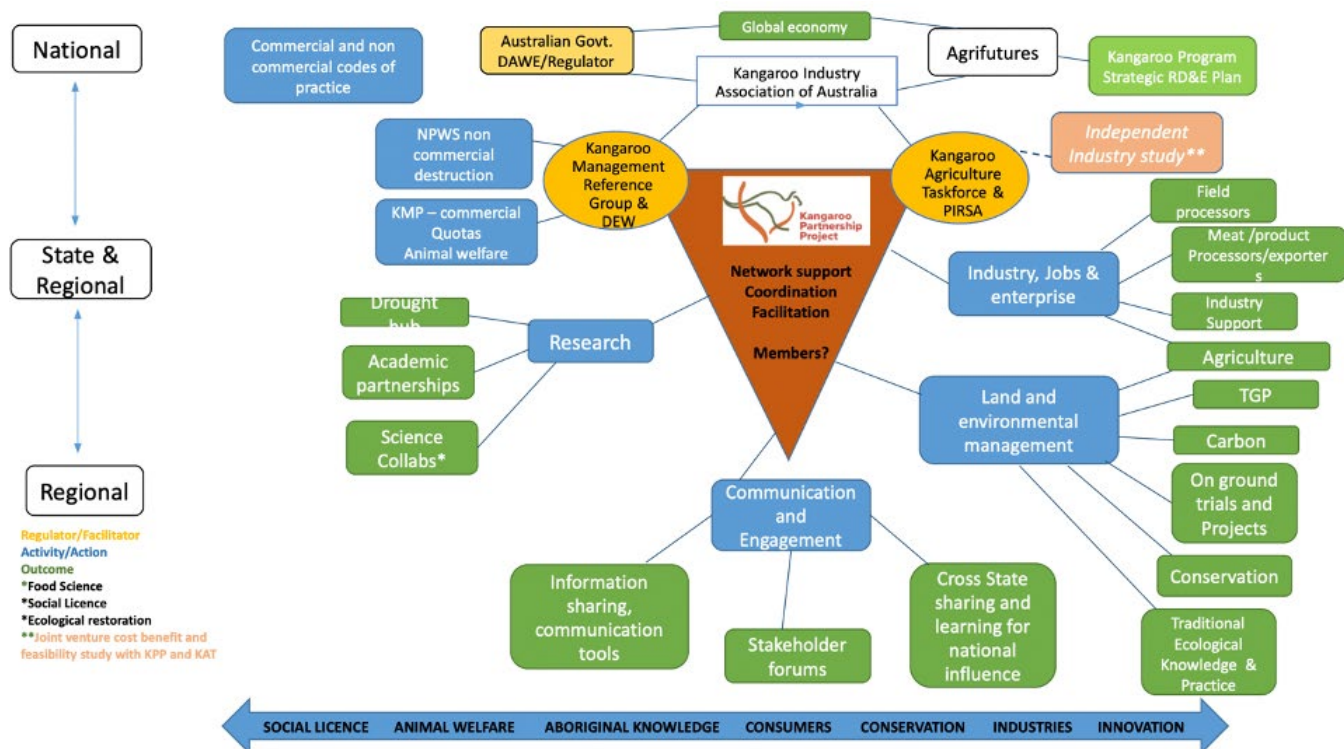


Figure 1. Partnership model and methods of project participation

## Workshop

The primary stage commitment of the Partnership Project was to engage a broad network of stakeholder groups to take part in a stakeholder workshop delivered over two sessions in April 2022. The identified stakeholder network consisted of pastoralists and land managers, scientists, cultural representatives, the kangaroo harvesting and processing industries, economic experts, animal welfare peak bodies, conservation land managers and government representatives.

Taking into consideration the large project area, and the challenges that the Covid-19 pandemic was presenting, collaboration and facilitation specialists Collabforge were engaged to assist the delivery of the stakeholder workshop in an online format.

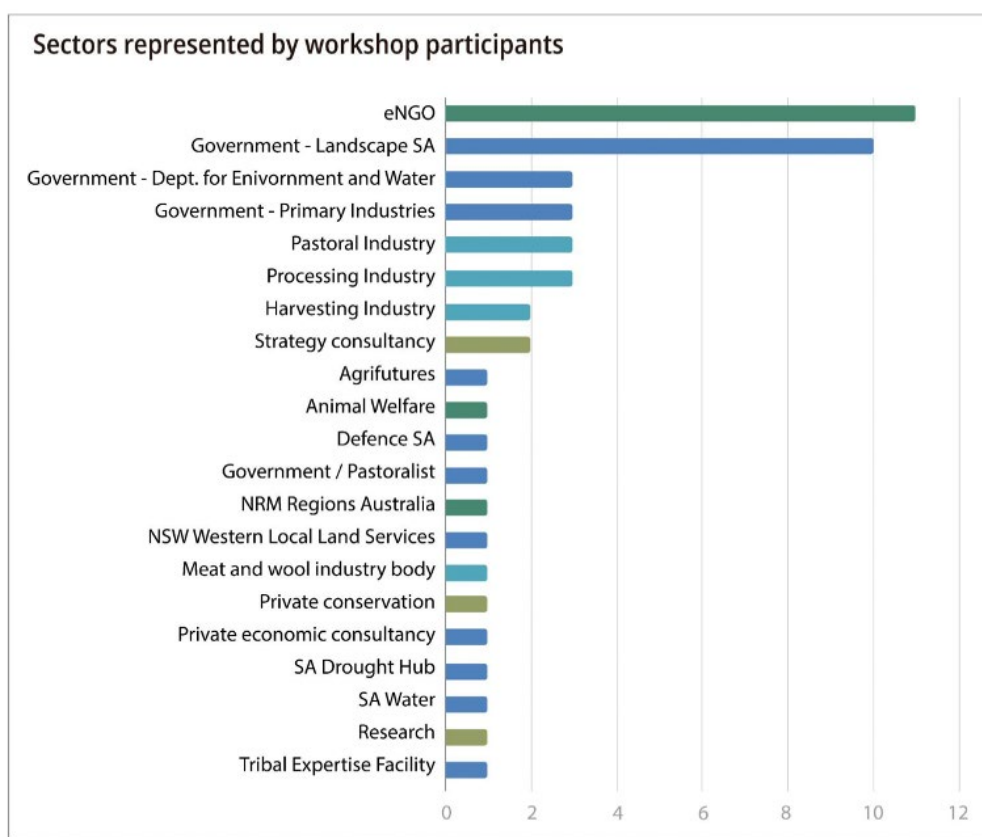
The aim of the workshops was to:

- Understand the diverse perspectives and interests for the Partnership.
- Foster understanding, connections, and collaboration between participants.
- Elicit specific intentions for participation in the Partnership.

Organisers aimed to incorporate the views of stakeholders to co-design the content of the workshop as much as possible, as well as consider feedback gathered from previous kangaroo management engagement events, and gaps identified from prior research and experience and identified challenges to management. An outcomes-based agenda was formulated that aligned with the scope of the project (refer Appendix C).

The overall vision was to formulate a strategic partnership equipped with the mission of improving the collective capability to manage kangaroos sustainably through collaboration, knowledge sharing, on-ground trials and demonstrations and promotion of effective landscape-scale strategies.

A total of 38 participants attended both workshops, with an additional 5 in the first workshop and 10 in the second workshop. The list of the sectors represented by project partners are listed in the figure below.



**Figure 2.** Sectors represented in the workshop series.

### Evaluation method

This outcome was evaluated based on the completion of signed Partnering Agreements which outlined KPP themes and focus area outcomes from the workshops. By the completion of the project, 23 partnering agreements were signed.

Stakeholder participation was also measured and evaluated by the uptake of communication methods such as feedback from meeting deputations, newsletter clicks and social media engagement as per the Communication and Engagement Plans.

### Results

- Creation of a Communication and Engagement Strategy and respective plans to guide the project's partnership with industry stakeholders.
- Kangaroo Partnership Project (KPP) Steering Committee meeting bi-monthly, including addition of an animal welfare representative (Tanya Stephens) to the KPP Steering Committee in March 2023.
- Collaboration with existing Kangaroo Management groups including:
  - PIRSA Agricultural Kangaroo Taskforce (AKT).
  - Department for Environment and Water (DEW) Kangaroo Management Reference Group (KMRG).

- NSW Kangaroo Management Taskforce (KMT).
- Stakeholder Engagement Workshops – 2-part series held on April 6<sup>th</sup> and April 29<sup>th</sup>, 2022. Attended by 50 stakeholders across 21 sectors/organisations.
- Identification of 5 key focus/priority areas discussed at the workshops (Figure 3).
- Ongoing Coordinator updates at partner meetings and communication through e-newsletters and direct contact from the coordinator to key partners as needed.
- 23 partners committed to the project through partnership agreements, many at a high engagement and commitment level (Table 2).

**Themes and Focus Areas**

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- 1. Animal welfare**
  - All kangaroos should be lawfully and humanely managed.
  - Support for compliance and accountability around kangaroos taken under Destruction Permits.
- 2. Economic development and livelihoods**
  - Increase the demand for and export of high value kangaroo products, generating incentives for harvesters and processors.
  - Support access to entry level industry participation to grow the workforce and improve the appeal of the industry.
- 3. Environmental conservation, landscape management and sustainability**
  - Kangaroo population numbers are managed to a sustainable level that achieves biodiversity, kangaroo conservation, maintains the health of the ecosystem, and relinquishes competition for resources.
- 4. Improving social licence (community understanding and acceptance)**
  - Seek opportunities to grow public consensus around kangaroos being managed for the welfare of the species and the sustainability of the environment, with professional field harvesting as the most ethical method of doing so.
  - Consumption and use of kangaroo products is more widely accepted and embraced.
- 5. Moving forward together, engagement and alignment**
  - Establish a self-sustaining SA Kangaroo Partnership consisting of whole-of-sector representation that addresses key issues and advocates for management improvements.
  - Support the formation of a national kangaroo management partnership to advocate and lead on issues at a Federal level.

*While not exhaustive, this list reflects broad priorities identified by workshop stakeholders.*

**Figure 3.** The 5 key focus and priority areas identified by workshop stakeholders. See workshop factsheet: <https://cdn.environment.sa.gov.au/landscape/images/Kangaroo-Partnership-Project-Fact-Sheet-v2.pdf>

**Table 2.** Summary of project partners who committed to the project through partnership agreements at varying levels.

<b>Level 1 partners</b> <i>Being involved</i>	<b>Level 2 partners</b> <i>Staying in the conversation</i>	<b>Level 3 partners</b> <i>Being kept in the loop</i>
<ul style="list-style-type: none"> <li>● Birdlife Australia Gluepot Reserve</li> <li>● Bush Heritage Australia</li> <li>● Ecological Horizons</li> <li>● Eyre Peninsula Landscape Board</li> <li>● Jumbuck Pastoral</li> <li>● Livestock SA</li> <li>● Macro Group Australia</li> <li>● Murraylands and Riverland Landscape Board</li> <li>● Kokatha Pastoral</li> <li>● SA Drought Resilience Adoption and Innovation Hub</li> <li>● SA Water</li> <li>● South Australian Professional Field Processors Organisation</li> <li>● South Gap Station</li> </ul>	<ul style="list-style-type: none"> <li>● Agricultural Kangaroo Taskforce (PIRSA)</li> <li>● Agrifutures</li> <li>● Australian Wildlife Services</li> <li>● Alinytjara Wilurara Landscape Board</li> <li>● Conservation Management</li> <li>● Nature Conservation Society of South Australia</li> <li>● Nature Foundation</li> <li>● Northern and Yorke Landscape Board</li> </ul>	<ul style="list-style-type: none"> <li>● Australian Wildlife Conservancy</li> <li>● Western Local Land Services</li> </ul>

## Discussion

### Key enablers of project outcomes

This approach was made successful by several factors including:

- The flexible method of stakeholder participation in the project allowed for maximum engagement, and the coordinated approach to facilitate the strategic growth of the partnership and act as a broker to information and ideas for solutions.
- Collaboration with existing Kangaroo Management groups and development of relationships with key experts in the field, and interstate which enabled new strategic partnerships such as the NRM community of practice.
- The outcomes-driven agenda of the workshop series (refer Appendix C - workshop report) designed with input from the Project Steering Committee and previous kangaroo management engagement events provided a clear strategic approach to develop common ground themes and goals for the project.
- The workshop guest speaker presentations from all facets of kangaroo management (cultural, harvesting industry, government, field processing industry, and conservation and ecology) providing the 'State of Play' from their respective sectors, set the scene for a non-biased and robust discussion that followed. In particular, the cultural and ecological representations provided credible data showing the need to manage population numbers for animal welfare and cultural significance which spoke to the common ground purpose of the project.
- The first workshop provided opportunities for participants to interact with peers from their sector, to help validate and cultivate shared understanding of their space. The second workshop created a list of projects and activities either underway, completed, or new ideas

that could help achieve the outcomes of the Partnership. This helped participants visualise what participation in the project could look like for them and aided their decision-making.

- The stakeholder input gained from the workshop provided the Kangaroo Partnership Steering Committee with the ground-truthing of existing feedback, modelling, research, and observations, to further guide project strategy and ensure well-informed decisions regarding the next stage of action. Most importantly, it scoped the appetite for project collaboration and participation, which aided the decision to release a grant program that would enable some of the project ideas to come into fruition.
- Formalised partnering agreements ensured a two-way commitment and the achievement of project outcomes and deliverables within the project timeframe.

### **Challenges and/or barriers to achieving project outcomes**

- Committee representation from the animal welfare sector occurred quite late in the project due to lack of available staff in South Australia with the capacity to participate.
- It was difficult engaging a constant representative to speak for culture. While there were multiple considerations as to how this could be improved, noting kangaroos serve a range of needs culturally as a totem and a food source, the views and values of First Nations partners on kangaroo management will be identified through a specific First Nations yarning circle.
- During the workshops, participants identified a significant challenge for the project was determining how to transform the project's goals into actionable steps. Additionally, a minority of stakeholders held a preconceived negative opinion, believing that all potential solutions had already been exhausted without any positive outcomes. However, the team effectively clarified that the governance and foundational stages of the project must take precedence to safeguard the integrity of its outcomes before moving on to the trials and demonstrations stage.
- Due to timing and the realignment of project priorities, driven by the direction of progress and stakeholder interest, it was determined that resources were best spent on updating the NSW Kangaroo Management Taskforce website to incorporate information on the Kangaroo Partnership Project and state-by-state context, rather than the planned dedicated website. However, this has not yet been finalised. In the meantime, to ensure public presence in the absence of this site, a dedicated webpage has been created on the SAALLB website: <https://www.landscape.sa.gov.au/saal/projects-and-partners/projects/kangaroo-partnership-project>
- The large project area coupled with COVID restrictions, hindered face-to-face engagement in some circumstances that may have benefited from one-on-one engagement to achieve project buy-in, such as rangeland pastoralists and Indigenous communities.
- Some partners appeared to have limited capacity and resourcing to stay involved in the partnership to the level that they initially committed to. This could be due to shifts in priorities and project focuses, particularly for the grant program, or the lack of coordinator capacity to proactively reach out to partners as often as initially intended.

### **Learnings and opportunities for future projects**

- From the outset stakeholders demonstrated a strong willingness to contribute their perspectives associated with the multi-faceted nature of the project's themes and goals. A partnership approach was therefore validated as the most suitable and promising means of addressing the challenges and opportunities surrounding the project.

- To sustain the momentum of the project's deliverables, there is the opportunity to continue developing the outcomes of the funded projects. This can be achieved through ongoing coordinator support and exploration of potential funding opportunities for more grants or trials.
- Due to the nature of the project addressing a 'wicked issue' and the wide and varied perspectives and values, conducting workshops in an online format provided an opportunity for effective risk management where the conversation had potential to be monopolised or overshadowed. The ability to have private conversations or move people into virtual 'break-out rooms' helped achieve a collaborative engagement exercise where everyone had a chance to listen and contribute. This approach was seen as a silver lining amidst the challenges posed by the COVID-19 pandemic and the management of the many voices in the discussion and could be considered for future engagement workshops.
- Reaching a common ground with all stakeholders from the various viewpoints of kangaroo management was an expected challenge, but all stakeholders were able to agree on the need to improve management for the welfare of the animals and environmental conservation, landscape management and sustainability (refer p.24, Appendix C). With future drought conditions inevitable we have the opportunity now to further develop this partnership effort with the NRM community of practice, with aims to lead to a National Kangaroo Management Strategy that can guide Federal Government reform.

## Outcome 2: Development and testing of new approaches to kangaroo management and prevention of the adverse ecological, production and animal welfare impacts of over-abundance.

**Summary**     [Outcome met.](#)

### Delivery approach

This outcome was primarily delivered through the KPP-funded grant program. The grant guidelines and criteria were developed through the KPP committee and informed by the themes and focus areas discussed through two network workshops held in February 2022 (see Figure 3 above).

Funding was offered for projects relating to trials and demonstrations, research and development, education and awareness raising, and innovative ideas associated with improving outcomes in kangaroo management. Up to \$90,000 was available, with individual projects being eligible for up to \$15,000. Up to \$30,000 was considered if the projects could demonstrate substantial collaboration across relevant stakeholder groups and scalable impact.

The assessment panel was a subcommittee of the KPP steering committee, including representatives from Department for Environment and Water, SAALLB and a conservation organisation (Bush Heritage Australia). All the projects were independently assessed by each member of the assessment panel, including both quantitative and qualitative measures against the developed criteria. The coordinator then led a discussion with the assessment panel to go through each project, including the average assessment score and key comments and determine proposed offers to take to the broader steering committee for approval. The subcommittee initially presented six projects to the committee for full or partial funding. Following discussion with the broader committee, it was decided that two of these projects would not be funded due to not having clear practical implications and impact for kangaroo management on the ground. It was agreed to use the remaining funds to increase the budget for the other approved projects and retain some for future funding should opportunities arise.

Following assessment of grant applications, final offers were made to four applicants, with some offered lower amounts than requested and some being asked for extended proposed budgets based on assessed project potential and KPP priorities. One applicant rejected the lower offer without a counterproposal citing that the revised amount was not sufficient to deliver the project, even at a lower pilot project scale. Following final assessment by the committee, funding was awarded to three projects:

- Project 1: South Australian Rangelands Kangaroo Collective Pilot (South Gap Station and Collaborators)
- Project 2: Increasing kangaroo value through quality, product diversity, reliability, and branding (Australian Wildlife Services)
- Project 3: Kangaroo management raising awareness (Nature Conservation Society of South Australia)

The public summary of funded projects can be found on the KPP web page ([https://cdn.environment.sa.gov.au/landscape/images/2022\\_23-Kangaroo-Partnership-Project-Grant-Program-Successful-Applicants.pdf](https://cdn.environment.sa.gov.au/landscape/images/2022_23-Kangaroo-Partnership-Project-Grant-Program-Successful-Applicants.pdf)). See Appendix E for grant program documents, including the grant guidelines and criteria.

Other potential new approaches to kangaroo management were explored through an economic analysis of the South Australian kangaroo industry, delivered by BDO EconSearch. This project was a collaborative effort, co-funded by the KPP and the Department of Primary Industries and Regions' PIRSA Agricultural Kangaroo Taskforce (PIRSA AKT).

**Table 3.** Summary of grant applications and assessment panel decision. \*Please note that the KPP steering committee asked the Nature Conservation Society of South Australia for a revised proposal with higher budget to consider for funding given the project focus on social licence was a high priority issue for the committee and broader KPP network. In addition, Australian Wildlife Services and the Nature Conservation Society of South Australia have been offered extension funding for specific deliverables outlined in *Implications and Recommendations*.

Project	Requested funding	Initial offer	Justification for assessment outcome	Final offer	Outcome
South Australian Arid Rangelands Kangaroo Collective Pilot <i>South Gap Station and partner stations</i>	\$30,000	\$20,000	<ul style="list-style-type: none"> <li>Clear outcomes relevant to all priority theme/s: animal welfare, economic development and livelihoods, environmental conservation, landscape management and sustainability, improving social licence, moving forward together</li> </ul>	\$20,000 + \$1,000 extension funding, TBC August 2023	Funded
Increasing kangaroo value through quality, product diversity, reliability and branding <i>Australian Wildlife Services</i>	\$29,925	\$10,000	<ul style="list-style-type: none"> <li>Clear outcomes relevant to priority theme/s: economic development and livelihoods, environmental conservation, landscape management and sustainability, moving forward together</li> </ul>	\$17,858 + \$5,000 extension funding, TBC August 2023	Funded
Kangaroo management raising awareness <i>Nature Conservation Society of South Australia</i>	\$13,600	\$13,600	<ul style="list-style-type: none"> <li>Clear outcomes relevant to priority theme: social licence</li> <li>Potential for links to multiple KPP partners</li> </ul>	\$25,233* + \$15,000 extension funding, August 2023	Funded
Research and test viability of commercial Indigenous branded kangaroo products	\$ 29,400	\$15,000	<ul style="list-style-type: none"> <li>Outcomes relevant to priority theme/s: economic development and livelihoods, environmental conservation, landscape management and sustainability, social licence</li> <li>Actionability of the proposal unclear and more information about the governance/administration for the project required</li> <li>Level of collaboration and scalability not enough to justify &gt;\$15,000 funding bracket given the above</li> <li>Lowered offer presented with the condition</li> </ul>	-	Offer rejected by grantee – not funded

			to submit an action plan and more information about governance/administration		
Effects of kangaroo grazing on ecosystem functioning	\$14,124	-	<ul style="list-style-type: none"> <li>Less relevant to immediate on-ground local impact</li> </ul>	-	Not funded
On ground trials of thermal technology (commercial kangaroo harvesting)	\$14,215	-	<ul style="list-style-type: none"> <li>Data collection method unclear</li> <li>Budget was primarily for purchasing new equipment.</li> <li>Given the applicant was recognised as a key stakeholder, the committee considered proposing integrating this project with the <i>Kangaroo Collective Pilot</i>, however recognised this would require coordination beyond the capacity of the KPP coordinator and the other project lead</li> </ul>	-	Not funded
Counting kangaroos: Investigating drone technology for population estimates	\$25,000	-	<ul style="list-style-type: none"> <li>Considered with the funding condition of doing a cost-benefit analysis.</li> <li>Less relevant to immediate local impact, particularly since most drones are too expensive for land manager use</li> </ul>	-	Not funded
Conceptual framework for impact-based macropod management	\$15,375	-	<ul style="list-style-type: none"> <li>Considered to be usual department responsibility</li> </ul>	-	Not funded
Water Point Exclusion Project for Kangaroo Management	\$11,772	-	<ul style="list-style-type: none"> <li>Business as usual</li> <li>Fencing not seen by the committee as a long-term landscape-scale solution across the SA rangelands</li> </ul>	-	Not funded
Kangaroo Management fencing	\$34,000	-	<ul style="list-style-type: none"> <li>Business as usual</li> <li>Fencing not seen by the committee as a long-term landscape-scale solution across the SA rangelands</li> </ul>	-	Not funded

## Evaluation method

This outcome was evaluated based on the success of funded projects in delivering their own proposed outcomes. These outcomes were all determined with reference to the KPP themes and focus areas. The proposed and final outcomes of each project are outlined in the table below.

The final reports for the Australian Wildlife Services and Nature Conservation Society of South Australia's projects can be found in the Appendices. The SA Arid Rangelands Kangaroo Collective Pilot submitted a final report through SmartyGrants, including insights captured in the tables below. Over the next six months this final report will be used in a formal evaluation to inform future work and projects.

## Results

- Coordination of KPP grant program, including providing ongoing support for the three funded projects:
  - Supporting land managers within the Gawler Ranges region to increase effectiveness and long-term sustainability of landscape-scale kangaroo management.
  - Australian Wildlife Service's report outlining opportunities and priorities for increasing kangaroo value as a resource for land managers.
  - Nature Conservation Society of South Australia's (NCSSA) 'A Kangaroo Conversation' successful social media education campaign and learnings for future communications and social media tactics.
- Completed Economic Analysis of the South Australian Kangaroo Industry in partnership and co-funded by the PIRSA AKT and the KPP, providing an economic perspective on possible future scenarios and opportunities for the kangaroo harvesting industry.

The three projects funded by Kangaroo Partnership grants came to an end at the end of May 2023. The project teams presented final updates to the KPP committee during the strategy workshop on 8th June 2023 and submitted their final reports by the end of June 2023. Updates were also shared publicly in an article in the Across the Outback (<https://www.landscape.sa.gov.au/saal/news/working-towards-effective-kangaroo-management>, 21 June 2023). Brief summaries of the projects are included below and the full final reports for two of the projects are in Appendix F, G & H. Identified challenges, opportunities and learnings are discussed in the final chapter of this report.

### SA Arid Rangelands Kangaroo Collective Pilot (South Gap Station and partners)

The Kangaroo Management Pilot Project supported land managers to link together to collaboratively manage kangaroos at a landscape scale in the Gawler Ranges region. Through this project land managers have trialled the effectiveness of allocating harvesting tags across their properties according to expected landscape needs, with varying results across the properties. One challenge for this approach has been the lack of demand for kangaroo products. Because of this, a portion of the funds is now being used to subsidise kangaroo meat harvested on the involved properties, to increase local consumer demand through 'Eat Local' days. In addition to local corporate catering opportunities, local social organisations, including Bungala Food Service (Meals on Wheels to Port Augusta, Whyalla, Oodnadatta, Coober Pedy, and Quorn), will be provided with this local, healthy, and affordable source of protein. Agreements with organisations are currently being finalised, with the hope that larger organisations may be able to provide ongoing subsidies to benefit social good organisations beyond the project timeline.

## Increasing kangaroo value through quality, product diversity, reliability, and branding (Australian Wildlife Services)

This project worked on pathways to increase kangaroo value through improved quality, product diversity, and consistency. They found that high-value kangaroo products depend on better quality and more accurate product description branding and product diversity. Reliability of supply is a key issue to sustaining higher prices. They have also explored opportunities for credits from soil carbon sequestration plus potential carbon distance from a low emission meat, and potential credits for stewardship and improved biodiversity.

## Kangaroo management awareness raising (Nature Conservation Society of South Australia)

This project aimed to increase community awareness of kangaroo management. The campaign - A Kangaroo Conversation - was launched on Facebook, Instagram and TikTok in March and now has an impressive, engaged audience. The campaign can be found on the following platforms:

- Instagram: @akangarooconversation
- Facebook: Kangaroo Conversation
- TikTok: @akangarooconversation
- Twitter: @rooconvo



# A KANGAROO CONVERSATION



Figure 4. A post from A Kangaroo Conversation Instagram.

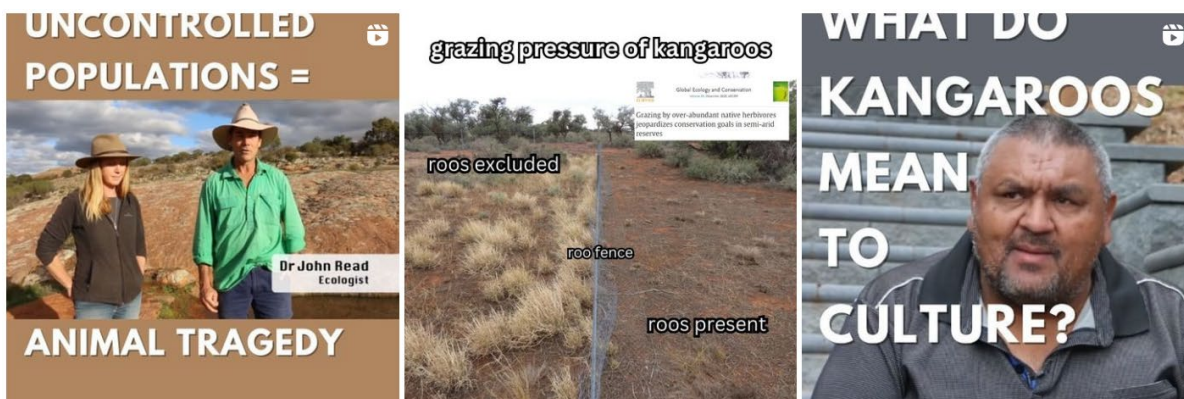


Figure 5. Preview of three A Kangaroo Conversation posts on Instagram, including videos utilising previous media content and new recorded media.

## Economic Analysis of the SA Kangaroo Industry (Co-funded by PIRSA AKT and KPP)

The PIRSA Agricultural Kangaroo Taskforce (PIRSA AKT) initiated an economic analysis of the South Australian kangaroo industry in partnership with the KPP with the intention of gaining an economic perspective on possible future scenarios and opportunities for the kangaroo harvesting industry.

The report presents two different analyses: a cost benefit analysis and economic impact analysis. The economic analyses indicate that the kangaroo harvesting industry holds potential for economic benefit, including increased GSP and employment in South Australia.

Through interviews with stakeholders, the report identified additional costs, benefits, and challenges not captured in the economic analyses (see Table 4). The report provides a key source of information to explore and understand the current economic state of the industry and its potential.

**Table 4.** Costs and benefits not captured in the cost benefit analysis, from project factsheet. See Appendix H for full report.

Unquantified costs	Unquantified benefits
<ul style="list-style-type: none"> <li>• Expanding meat processing facilities.</li> <li>• Research and development.</li> <li>• Promotion and advertising.</li> <li>• Market development to generate additional demand for kangaroo products.</li> <li>• Training and business development to provide professional support to field processors.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential increases in income to pastoral/grazing enterprises from carbon and biodiversity credits resulting from effective kangaroo management.</li> <li>• Avoiding mental health impacts for land managers dealing with massive die-offs of kangaroos during drought.</li> <li>• Reduced water consumption by kangaroos and associated reduced water supply costs.</li> <li>• Reduced kangaroo destruction costs.</li> </ul>

## Discussion

### Key enablers of project outcomes

- Significant funding to effectively resource the three projects.
- As needed support for the funded projects from the KPP Coordinator.

*"[The grant] has provided the opportunity to work with the KPP Coordinator Emily Gregg and benefit from her knowledge as an ecologist, social scientist and thoughtful communicator from within a very different area and demographic to myself. Emily engaged positively with me throughout and always endeavoured to make herself available for collaboration and was an essential sounding board. Without Emily's input I feel the grant would not have realised some of the truly positive outcomes it has especially in the extension element of purchasing and placing kangaroo meat within the local community." - Kate Greenfield (Project 1)*

- The well-connected KPP committee and KPP network provided opportunities for further support and collaboration e.g., contacts to engage in interviews (Project 3), guidance from expert ecologists (Projects 1 & 3).
- Involvement of Department for Environment and Water staff in the initial Project 1 workshop provided the involved land managers with access to necessary expertise and understanding of kangaroo management policy and processes, including kangaroo survey monitoring methods and interpretation of population estimates and resulting harvesting quotas in their region.

- SAALLB staff, Chris Fulton and Andrea Tschirner, provided key on-ground assistance with the Project 1 workshop, including meeting facilitation and community engagement.

### Challenges to achieving project outcomes

- Lack of on-ground projects submitted to the grant program that met guidelines requirements resulted in few projects with only one truly on-ground project, e.g.
  - Three submitted projects involving on-ground management activities (e.g., waterpoint fencing, harvesting) were considered by the committee to not sufficiently meet the requirements of providing something sufficiently innovative or different to 'business as usual'.
  - Two submitted projects involving on-ground research trials and experiments (e.g., soil impacts, monitoring using drones) were considered by the committee to not provide sufficiently meaningful inputs to practical and feasible management at the state-wide scale.
- It is possible that the short timeline (~8 months) of the funded projects resulted in the lack of on-ground projects submitted to the grant program.
- While the three funded projects were able to be delivered during the proposed timeline, this did limit the potential of the projects, particularly to establish sustainable long-term solutions to kangaroo management.
- The SA Arid Rangelands Kangaroo Collective Pilot experienced the following challenges:
  - The lack of public demand for kangaroo products
  - Occasionally poor communication and understanding between land managers and harvesters on their properties, and low land manager understanding of the numbers of kangaroos on their properties and the number harvested in recent years.
  - A high level of time and resources required to acquire harvesting tags, particularly as a collective group with written permission from all involved.
  - Meeting the full harvest quota is challenging, and even if the full harvest quota is achieved harvesting is not likely to bring kangaroo numbers under control to a sustainable level.
- The Kangaroo management awareness raising project experienced challenges, including:
  - Securing engagement from stakeholders for campaign social media interviews and video content was difficult due to concern about public perceptions and potential consequences.
  - Initial online push-back to Project 2 campaign, e.g., *refusal of overabundance, meat safety concerns, concern around controlling native species, refuting independence of campaign.*
- Australian Wildlife Services identified challenges to increasing kangaroo value, including:
  - There are many options to increase kangaroo value, which may increase difficulty in deciding how to progress.
  - Even seemingly easy existing methods to increase kangaroo value are not currently being implemented. It is unclear whether this because stakeholders are not aware or uninterested.
  - Very little research and development is going into increasing kangaroo value, particularly in comparison to other red meat industries.
  - While harvesting is currently considered by many to be the best way to manage kangaroos, it is difficult for individual wildlife managers to progress the approach

sustainably, as harvest and increasing value is heavily reliant on business and industry, especially for implementation.

- The economic impact analysis was necessarily undertaken using multiple assumptions that are not currently met within the industry. These assumptions include that:
  - All field processors work full time.
  - The industry can attract more field processors.
  - There is sufficient demand for kangaroo products to absorb the increased supply of carcasses.

### **Learnings and opportunities for future projects**

- Given the short timeline, the three projects have acted as successful pilot projects, demonstrating the need for such projects and the potential value of further work. Because of this, Project 3 has been extended with remaining funds until the end of 2023.
- During the grant application period, the coordinator received over 30 enquiries from across the state, of which the majority were pastoralists and harvesters looking for funding to support kangaroo management, including initial harvester set-up costs, equipment, fencing etc. While many of these enquiries were focused on “business-as-usual” and therefore did not tend to qualify for the grant program, the level of interest indicates a demand and need for support in this area, particularly for pastoralists in areas with very few harvesters available.
- Securing engagement for social media campaigns may become easier once a campaign is properly established, and interviewees can be encouraged to engage by providing clear information about the process, potential risks, and mitigations.
- To address online pushback, campaign teams are recommended to block offensive behaviour, respond with credibility, and evaluate engagement with offensive users.
- A priority for increasing kangaroo value should be on which entities have the capacity and will to implement innovative ideas for increasing the value of kangaroos *e.g., processors, harvesters, producers, researchers*.
- While promising, the economic predictions in BDO EconSearch’s Economic Analysis report were based on assumptions not currently met within the industry. The report therefore highlights the challenges that must be overcome to realise the economic potential of the kangaroo industry in South Australia. These challenges are systemic and complex and cannot be overcome by a single entity, but require substantial collaborative effort, goodwill, and shared responsibility across entities and sectors.

**Table 5.** Summary of grant program project themes and outcomes. See *Insights and Recommendations* for project learnings and opportunities.

FUNDED PROJECT 1: SA Arid Rangelands Kangaroo Collective Pilot, South Gap Station and partners		
Theme	Proposed outcomes	Final outcomes
<p><b>Animal welfare</b> Improvements for both native and non-native species through addressing the over abundant kangaroo component of the total grazing pressure at landscape scale</p>	<ul style="list-style-type: none"> <li>Reduction in numbers of over abundant species of kangaroos at landscape scale by increased field processing takes and destruction permits employed as necessary</li> </ul>	<ul style="list-style-type: none"> <li>Harvest tags were purchased for individual properties and allocated against individual properties by NPW to ensure that involved properties were the ones where the kangaroos were harvested. This was an immediate and mid-term strategy, where impacts could be realised on-ground within days of tags being issued and the ongoing effect of removing breeding individuals lessens the population over time.</li> <li>Some properties indicated that the purchasing of the tags for their property resulted in an increased kangaroo harvest. Data is required to confirm this.</li> <li>Some properties indicated purchase of kangaroo meat product was a more effective use of funds and could strengthen market demand for kangaroo meat, and therefore reduction in kangaroo numbers due to harvesting demand. This strategy did not realise immediate on ground improvements in animal welfare but does work to medium- and long-term improvements overall.</li> <li>Given that the group had a balance of both approaches it is possible they will see short-, medium- and long-term positive animal welfare goals</li> </ul>
<p><b>Economic development and livelihoods enhanced</b></p>	<ul style="list-style-type: none"> <li>Collaborate as a group to find the most practical and viable way of harvesting kangaroos across various land systems at landscape scale, to increase field processor take for time/resource expenditure and look for practical cost-effective controls where it is not viable for a field processor to operate.</li> <li>Allow for a more resilient landscape during prolonged dry spells due to better management of the kangaroo grazing pressure allowing more resilient and profitable pastoral businesses</li> </ul>	<ul style="list-style-type: none"> <li>Kangaroo Harvesters had tags paid for reducing the cost burden, particularly for those that received greater numbers of tags because of remoteness and the cost of travel to these areas.</li> <li>Land manager livelihoods enhanced by the opportunity to collaborate with other land managers to work to address issues surrounding over abundant kangaroos within the landscapes they feel connection with</li> <li>Land managers livelihoods were enhanced by the increased kangaroo harvester presence within the project area. This led them to believe kangaroo harvest numbers will adjust upward for the 2023 harvest year and work to bring down total numbers present in the landscape in the short and medium term.</li> <li>Kangaroo Meat Processors benefited from the targeted increase in market share through the 'Eat Local' initiative</li> </ul>

<b>Improving social license and acceptance</b>	<ul style="list-style-type: none"> <li>Utilise science and data within the group to improve group understanding and acceptance of the scale and impacts of kangaroo over abundance and empowering the group to put forward workable on ground solutions that can be showcased and resonate with other land managers</li> </ul>	<ul style="list-style-type: none"> <li>The use of scientific data within the group to improve group understanding and acceptance of the scale and impacts of kangaroo overabundance worked. Land managers were staggered by the number of kangaroos estimated to be on their properties and more broadly across the landscape.</li> <li>The 'Eat Local' subsidies enabled conversations around kangaroo overabundance in our region with several diverse groups of people, who indicated surprise but understanding and interest in being part of the solution</li> </ul>
<b>Moving forward together, engagement and alignment</b>	<ul style="list-style-type: none"> <li>Showcase proactive engagement and alignment across multiple stakeholder sectors to bring about workable on ground solutions for the land managers and owners, field processors and meat processors.</li> <li>Collaborate with other successful KPP grant awardees to the mutual benefit and alignment of all involved</li> </ul>	<ul style="list-style-type: none"> <li>Successful increase in engagement and alignment between land managers, Kangaroo Harvesters, and Kangaroo Meat Processors</li> <li>Creation of a group of land managers that want to see overabundant kangaroos managed and recognise the complex issues surrounding kangaroo management that will require ongoing work.</li> <li>Alignment with industry needs for carbon neutrality, low carbon outcomes, sourcing locally, and sourcing nutritious food at competitive price points.</li> <li>Opportunities to showcase to a wider audience planned by end of 2023</li> </ul>

**FUNDED PROJECT 2: Increasing kangaroo value through quality, product diversity, reliability and branding, Australian Wildlife Services**

Theme	Proposed outcomes	Final outcomes
<b>Economic development and livelihoods</b>	<ul style="list-style-type: none"> <li>Describe options and mechanisms for delivery, to the market, of a wider range of kangaroo products that have more detailed description of their attributes with quality consistency.</li> <li>Describe procedures for increasing reliability of supply, a reduction in costs incurred by pastoralists in management and the opportunity to integrate kangaroos into rangeland production systems, both to benefit themselves and increase income for rural communities.</li> <li>Describe procedures for tracking species, ages, and origin to enable consistency.</li> </ul>	<ul style="list-style-type: none"> <li>Identification of ways to: <ul style="list-style-type: none"> <li>Increase the demand for high value kangaroo products.</li> <li>Generate incentives for harvesters and processors.</li> <li>Improve the appeal of the industry.</li> <li>Manage kangaroo populations</li> </ul> </li> </ul>

<b>Moving forward together, engagement and alignment</b>	<ul style="list-style-type: none"> <li>• Draw on previous work by kangaroo processors, the Kangaroo Industry of Australia Association, AgriFutures, Food Agility Cooperative Research Centre (CRC), CSIRO, Meat and Livestock Australia (MLA), Meat Standards Australia and the Goat Industry Council to guide development of the kangaroo industry through improved management.</li> </ul>	<ul style="list-style-type: none"> <li>• Development and strengthening of AWS collaborations with several stakeholders including industry entities, individual harvesters, Indigenous and non-indigenous chefs, pastoralists, and a conservation organisation.</li> <li>• Identification of research collaboration opportunities</li> </ul>
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**FUNDED PROJECT 3: Kangaroo management awareness raising, Nature Conservation Society of South Australia**

Theme	Proposed outcomes	Final outcomes
<b>Social licence</b>	<ul style="list-style-type: none"> <li>• Seek opportunities to grow public consensus around kangaroos being managed for the welfare of the species and the sustainability of the environment, with professional field harvesting as the most ethical method of doing so</li> <li>• Consumption and use of kangaroo products is more widely accepted and embraced</li> </ul>	<ul style="list-style-type: none"> <li>• Development of the <b>A Kangaroo Conversation</b> campaign</li> <li>• Four social media platforms developed across Facebook, Instagram, TikTok and Twitter to drive the key campaign messages.</li> <li>• Website launched to support the credibility of the project.</li> <li>• Over 100 pieces of content created and released with an average of three pieces of content posted per week. Content first focussed on conveying the notion of kangaroo overabundance, then exploring the impacts this had on the environment, with the later content introducing the notion of lethal kangaroo management as a necessary technique for sustainable management.</li> <li>• Content successfully reached over 160,000 people organically and an additional 260,000 people through targeted advertisements.</li> <li>• 2,800 active followers on Facebook, and well received on other platforms.</li> <li>• A qualitative assessment of comments and feedback on comments and responses to social media, found many positive testimonials from individuals who felt the content was informative or representative of their views. Common themes were that people were appreciative of the topic being explored on social media, that the issue was important to their lives, and that they were supportive of the dialogue being elevated. Further detail on testimonials can be found in the final report (Appendix G)</li> </ul>

## Outcome 3: Increased engagement of land managers across multiple land uses and systems in effective and sustainable kangaroo management practices and research.

**Summary**    Outcome met.

### Delivery approach

This outcome was delivered through the KPP coordinator's role in implementing the Communications and Stakeholder Engagement Strategy, including supporting opportunities for other collaborations and networks. Collaborations and networks were prioritised by the coordinator for support where they were expected to provide opportunities for future projects and/or greater engagement in the long-term from both land managers and staff within relevant organisations that could contribute to capacity-building for kangaroo management in South Australia and on a national scale.

The KPP-funded projects (see above) also contributed to this outcome, particularly Project 1 which was led by land managers and included the proposed outcome to improve group understanding and acceptance of the scale and impacts of kangaroo overabundance and empower the group to put forward workable on ground solutions that can be showcased and resonate with other land managers.

### Evaluation method

This outcome was evaluated by the extent to which the relevant communication and engagement activities were implemented by the coordinator (see Appendix A), as well as the reach of the engagement activities (e.g., newsletter opens, number of participants in workshops, number of presentations).

This outcome was also evaluated based on the success of funded projects in delivering their own proposed outcomes (see above).

### Results

- Implementation of the Communications and Stakeholder Engagement Strategy
- Stakeholder Workshop featuring guest speakers of land managers across conservation, Indigenous land management, industry and government.
- Project page created on SAALLB website as a placeholder for planned joint website with NSW KMT. Plans underway for a joint website between the Kangaroo Partnership Project and the New South Wales Kangaroo Management Taskforce
- Release of project e-newsletters (Roo Roundup)
- Outreach through presentations at local landscape groups, and media coverage
- Coordination and facilitation of a kangaroo management workshop at the NRMRA Knowledge Conference 2022 in partnership with NSW Kangaroo Management Taskforce and Bush Heritage Australia with ~26 attendees, with presentations focused on KPP themes:
  - Trish Fleming (social licence, Murdoch University, WA)
  - Trudy Sharp (animal welfare, NSW)
  - Neil Finch (Aboriginal Engagement, Qld government)



The poster for the 'Workshop: Talking Roos' features a photograph of kangaroos in a natural setting. The text on the poster includes the title 'Workshop: Talking Roos', the question 'How can we do better with Kangaroo management?', and the event details: 'Will Be Held On: Monday, 31st October 2022, 1:00pm - 4:00pm, Margaret River Football Club, 33 Wallcliffe Rd, Margaret River, WA 6285'. It also includes a 'Register today!' call to action and logos for NRM Regions Australia, Kangaroo Partnership Project, Kangaroo, NSW, RMIT University, and Icon Science.

- Steve McLeod (NSW KMT)
- Fiona Garland (NSW KMT)
- Graeme Finlayson (BHA, conservation)
- Emily Gregg (social licence, KPC & RMIT University)
- Jodie Gregg-Smith (KPP overview)
- Substantial interest shown for further discussions and the development of a Community of Practice (15 out of 16 participants who completed our workshop feedback survey expressed interest)
- Creation and facilitation of an NRMRA Kangaroo Management Community of Practice, as a space for cross-jurisdictional knowledge sharing and collaboration between NRM staff across Australia
- Successful completion of a project led by land managers (Project 1, see above)
- Successful implementation of NCSSA's 'A Kangaroo Conversation' social media education campaign aiming to increase public understanding of kangaroo management (Project 3, see above)

## **Discussion**

### ***Key enablers of project outcomes***

- Coordinator role resourced to coordinate engagement and communications activities.
- Support from Landscape Board staff, particularly SAALB communications staff, including access to Campaign Monitor for e-newsletter distribution.
- Support and initiative from SAALB community landscape officers and other staff in engaging with local land managers, assisting in coordination of workshops, and regularly inviting the KPP coordinator to regional group meetings to provide KPP updates.
- Graphic designer available through Sevenses Creative to assist with graphics and presentations (e.g., conference workshop flyer)
- Funding available to resource travel to allow the coordinator to engage in-person with engagement workshops and presentations and engage with local land managers and stakeholders.

### ***Challenges and/or barriers to achieving project outcomes.***

- The new coordinator was only employed on a part-time basis from July 2023 and not locally based, with only 3 on-ground visits possible (September 2022, March 2023, June 2023)
- Limited capacity from Landscape Board staff, particularly outside SAALB, to provide meaningful capacity and support to the project beyond sharing brief project updates.
- The large project area coupled with COVID restrictions, hindered face-to-face engagement in some circumstances.

### ***Learnings and opportunities for future projects***

- Most people who proactively engaged with the coordinator were land managers.
- This high engagement by land managers across the project timeline highlighted the high level of interest this group has in gaining greater understanding around kangaroo management, including how to access field harvesting services.

- This high engagement also indicates the opportunities that can emerge when land managers have a space to be heard and have influence on decision-making around kangaroo management.
- The Eat Local aspect of Project 1 demonstrated the innovative opportunities for addressing land management needs and increasing local demand for kangaroo products that can be land manager led.
- Additional local support through new roles or increased capacity for existing Landscape Board staff (e.g., Community Landscape Officers) could support increased capacity-building and the ability to support more on-ground projects and community and stakeholder engagement.

## Insights and recommendations

This section reports key insights from the project, including identified challenges and opportunities, and recommendations for next steps. These insights were identified through the three funded projects and the work of the independent coordinator, as well as through discussion at the KPP steering committee project review and strategy workshop in June 2023.

### Key learnings, successes, and challenges

The successes of the project in terms of meeting the project outcomes and deliverables are outlined in detail in the above sections. However, there are other key successes of the project that are crucial to consider in the development of future projects to continue to support and expand the progress that the KPP has made over the past two years.

#### The Kangaroo Partnership Model

Impact-causing kangaroo populations present an historical, cyclic, and complex issue at a national and state scale. A fundamental challenge to effective kangaroo management is the effective engagement of all key stakeholders to create space for meaningful discussion and progress towards collective “win-win” outcomes.

During the 2018 drought, the mass die-offs in regional South Australia demonstrated the alarming nature of the crisis and the clear impacts on the wellbeing of communities, as well as animal welfare, agriculture, and conservation outcomes and values. In 2021, a collective of concerned scientists, advocates and experts collated a special edition of *Ecological Management and Restoration* concluding with a clear call to action through a joint statement on the need to improve kangaroo management in Australia<sup>6</sup>. It was clear that a new approach to bring all stakeholders to the table to have open and difficult conversations about their experiences and concerns and create a shared understanding of kangaroo impacts was needed, to navigate the pathways to more effective and sustainable management. This was particularly crucial in the wake of the 2018 drought, as stakeholders were already attuned, engaged, and motivated to work towards preventing or preparing for future crises. At this stage land managers – those typically most affected by impact-causing kangaroo populations – did not have a clear entry point to contribute their perspectives, or access to information and there was no solutions focused entity with sufficient resources to progress strategies to enact or recommend change.

The partnership model was designed to create a mechanism to bring people into this intractable issue, to become active drivers of the local solutions, and to learn, contribute, share, and participate in the potential of a different approach. It was a novel concept that aimed to create opportunities for those who wanted to join the dialogue, with the potential for national learnings, opportunities, and implications to be realised in the longer term. The partnership was intended to create an entry point to contribute to a conversation that to date had been managed or overseen by regulators, legislation, and an industry association. This project has supported stakeholders to explore and see differently, with the landholders, consumers, cultural authorities, and conservation sector central to and drivers of, the solutions.

As discussed in the Outcome 1 reporting, a partnership framework was developed for the KPP (see Figure 1) to allow for continuous growth in stakeholder participation, to ensure all sectors were represented and the varying viewpoints were being captured and considered. Flexible movement

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<sup>6</sup> *Ecological Management and Restoration* special issue: Optimum management of overabundant macropods, <https://onlinelibrary.wiley.com/toc/14428903/2021/22/S1>

between a scale of participation levels (see Table 2) allowed for partners to receive and contribute to the project through various means such as funding, time, resources, knowledge, and expertise as they had the capacity to do so, or simply receive information and have a greater understanding of the issues and options available to address them.

A major success of the project is the development and testing of this partnership approach and the presence of the independent coordinator role to support it. Together these allowed for collaboration between various stakeholders who all shared an interest in improving kangaroo management in South Australia but brought very different perspectives and approaches to this complex issue.

The high value of consistent coordination support for partners was highlighted through this process. At times, the coordinator's capacity to meet with partners individually was only possible when proactively approached. This became particularly challenging once the coordinator role shifted to part-time and the grant projects began, some of which required regular support from the coordinator. This lack of engagement may have resulted in lost opportunities or the disengagement of certain partners and highlights the benefit of engaging a full-time coordinator and additional local support where possible.

A risk of a long-term partnership approach is that otherwise committed partner organisations may experience shifting priorities or capacity that may alter their ability to contribute to the project. Similarly, shifts in priorities from the partnership and coordinator, including which projects are funded through grant programs, may alter the extent to which partners are interested in being involved. Changes in priorities and capacity, both from the perspective of partners and the partnership as whole, is an expected part of the process and reality of working on a complex issue with many different partners. However, this risk could be effectively mitigated through the employment of a local coordinator at a full-time capacity, the addition of in-house part-time or casual staff (e.g., 0.2 FTE) for key Landscape Board partners, and transparent and adaptable memorandums of understanding between partnership groups.

### **Partnerships and collaborations**

A major success of the project was the collaboration with the New South Wales Kangaroo Management Taskforce, particularly Fiona Garland. Fiona Garland's experience and support was invaluable, and this collaboration provided the opportunity for a workshop, along with Bush Heritage Australia, at the NRMRA Knowledge Conference 2023 in Margaret River, which led to the formation of an NRMRA Kangaroo Management Community of Practice. The NSW KMT also provided many resources to the coordinator directly and through their website, which was an invaluable resource for many within the KPP network, particularly the NCSSA in their public engagement campaign.

Another collaboration success was the delivery of the Economic Analysis of the kangaroo harvesting industry in partnership with the PIRSA AKT. The use of an independent consultancy – BDO EconSearch – to deliver this report was invaluable. While the economic analyses demonstrated the potential economic value of the industry, interviews with various stakeholders, including individuals both within and outside the harvesting and processing industries, highlighted the potential on-ground costs, benefits and challenges not captured by the analyses. While the report highlighted a lot of challenges to the industry on the ground, the explicit identification and discussion of these challenges represents a necessary step forward to exploring and prioritising pathways to improve the industry for both environmental and economic outcomes. This process is also crucial for acquiring the necessary social licence for the industry moving forward.

The participation of the Department for Environment and Water (DEW) staff added a valuable contribution to understanding the complexity from a policy and commercial harvesting perspective. Kangaroo management is a complex issue, and having a clear understanding of current legislation and

processes around the relationship between kangaroo management and regulation of the harvesting industry is critical to exploring pathways to more effective management at a state-wide level.

Many other partners and collaborators contributed to various extents throughout the project, many of which have indicated interest in future related kangaroo projects. Some of these entities may be able to provide greater capacity and/or funding in the future for projects, such as the SA Drought Hub, which has shown particular interest in projects involving direct land manager engagement and management of the issue as it applies to drought resilience.

**Table 6.** Summary of some common challenges to effective kangaroo management identified through the project, including both from funded projects and through discussions with the KPP coordinator, committee and broader KPP network.

Theme	Challenges
<b>Animal welfare</b>	<ul style="list-style-type: none"> <li>● <b>Concerns around humaneness</b> – while harvesting has been assessed as the best management strategy for welfare outcomes, concerns remain about regulating best practice within the industry and whether this is even possible, <i>e.g.</i>, <i>euthanasia and/or orphaning of pouch young and dependent young-at-foot</i>.</li> <li>● <b>Concerns around justification</b>, i.e., indication from some animal welfare groups that more <b>quantitative evidence for kangaroo grazing impact</b> is needed to justify management of kangaroos as a native species.</li> <li>● <b>Concerns around effectiveness</b> i.e., the industry quota is not based on land management outcomes.</li> <li>● Given these concerns, some animal welfare organisations (e.g., RSPCA) may recognise that kangaroo control is necessary but not support the commercial kangaroo industry</li> </ul>
<b>Economic development and livelihoods</b>	<ul style="list-style-type: none"> <li>● <b>Lack of public demand</b> for kangaroo products</li> <li>● <b>Low meat processing capacity</b> for kangaroo products</li> <li>● <b>Inconsistent supply</b> – harvest is easily impacted by weather, and availability of harvesters is limited by current market and price and processing availability.</li> <li>● <b>Lack of market diversification</b> in harvesting industry leading to low product choice</li> <li>● <b>Comparatively low value of industry</b> – while there are many options available to increase value (see Project 2) the amount of options may increase difficulty in deciding how to progress. Even seemingly simple existing methods to increase kangaroo value are not currently being implemented, and the exact reasons why are currently unclear.</li> <li>● <b>Very little research and development</b> going into kangaroos, particularly in comparison to other red-meat industries</li> <li>● <b>Time and resources required</b> to acquire harvesting tags.</li> <li>● <b>Low land manager understanding</b> of the numbers of kangaroos on their properties and the number harvested in recent years</li> </ul>
<b>Environmental conservation, landscape management and sustainability</b>	<ul style="list-style-type: none"> <li>● <b>Harvest quotas</b> may be insufficient to bring numbers down to recommended levels consistently and when needed.</li> <li>● <b>High resource requirement for Landscape Boards to follow amendment process</b> to control kangaroos on public land through management plans.</li> </ul>

<p><b>Improving social licence</b></p>	<ul style="list-style-type: none"> <li>● <b>Public pushback</b> due to unawareness of issue or value differences, including risk to industry through unpredictable and variable public response.</li> <li>● Lack of understanding and clarity around impact-causing kangaroo populations</li> <li>● Meat safety concerns</li> <li>● Concern around controlling native species.</li> <li>● Lack of consensus around the most <b>accurate and effective language to use</b> around kangaroo management, including lack of clear definitions e.g., Overabundance vs impact-causing, unsustainable for harvesting industry vs unsustainable for land management</li> <li>● <b>Concerns the harvesting industry is not based on managing populations sustainably.</b></li> <li>● <b>Opposition from animal rights groups</b> against lethal control and/or industrial use of animals</li> <li>● <b>Securing engagement from stakeholders</b> can be challenging due to perceived and actual risk of public perceptions of kangaroo management</li> </ul>
<p><b>Moving forward together, engagement and alignment</b></p>	<ul style="list-style-type: none"> <li>● Lack of a coordinated and coherent national strategy, including consistency around population surveying and modelling</li> <li>● Need for greater coordination between stakeholders, including within the kangaroo industry.</li> <li>● Differing objectives of land management and conservation agencies and the harvesting industry (i.e., means to an end vs the end)</li> <li>● Kangaroos are <b>Totemic species</b> for some First Nations communities, which may prevent management in certain areas.</li> <li>● <b>Poor communication</b> between land managers and harvesters on their properties</li> <li>● The <b>role and responsibility of different entities in managing kangaroos</b> e.g., the Landscape Boards versus the Department for Environment and Water around managing impact-causing native species is unclear in practice (i.e., protocol vs. process)</li> </ul>

## Opportunities and innovative ideas

This project has highlighted key diverse pathways to improving kangaroo management in South Australia, address the inhibitors to success in kangaroo management, and identify opportunities to achieve “win-win” outcomes across stakeholder groups with different but nonetheless aligned objectives.

The partnership approach allowed for quick uptake of relevant opportunities that were presented over the two years. Some key opportunities that were acted on during this project including elevating the national conversation through the collaborative workshop with NSW Kangaroo Management Task Force and Bush Heritage Australia at the NRM Regions Australia – National NRM Knowledge Conference 2023, and establishing and coordinating an NRM Regions Australia Kangaroo Management Community of Practice as a result of a high level of interest at the conference workshop.

All three of the funded projects identified many opportunities for future projects, including expansions to ideas developed through their projects, as well as new innovative ideas to explore and test in the future. All grantees expressed their passion and excitement for continuing to work in this space and contributing to more effective kangaroo management strategies for environmental, agricultural and social outcomes. The Economic Analysis of the SA Kangaroo Harvesting Industry jointly funded by the project and PIRSA AKT also identified many opportunities for development of the harvesting industry in South Australia. All the identified opportunities are included in the following sections.

There are numerous other opportunities relevant to kangaroo management that were not able to be explored over the course of this project due to resourcing and time constraints. These include further work exploring the importance and potential of:

- Aboriginal-led projects and engagement with First Nations (e.g., [Roo hunters deliver kangaroo meat to mob in Wilcannia | The Point | NITV](#)), including:
  - Indigenous right to access to land and sustainable use of country.
  - Indigenous access to kangaroo meat and easy identification of animal (i.e., use of tail as clear identifier)
- Working with or supporting relevant groups (e.g., PIRSA AKT) to make improvements to the professional harvesting industry through community and land manager input.
- Exploring emission reduction and nature repair pathways through the management of kangaroos resulting in the reduction of grazing impact, retention of remnant vegetation and wildlife habitat, restoring conservation values and the protection of threatened species with carbon neutral co-benefits e.g., *nature stewardships, private land conservation*.
- Public engagement through creative arts approaches
- Citizen science projects (see Appendix J for draft project proposal, which was scoped by the coordinator but not pursued due to changing priorities and capacity)
- Creating direct financial incentives for harvesters and land managers through the development of a niche traceable kangaroo product with highly monitored population and verified welfare and sustainability outcomes.
- Exploring options for a self-regulating harvesting industry where premiums are higher when land management need is greatest.

- Public engagement events focused on increasing social licence and market for locally sourced kangaroo meat, e.g., *Kangaroo meat stall at WOMAD, kangaroo meat pies at AFL 'Gather Round' or 'Indigenous Round' in partnership with local bakeries.*
- Projects focused on harvester responsibility and accountability from an animal welfare perspective e.g., *body cam trials*

In addition, we would like to highlight the recent summer project led by CSIRO investigating the potential of Australia's kangaroo meat industry as an option for meeting increased global protein demand. The project occurred as part of CSIRO's Future Protein Mission which aims to contribute to growing Australia's protein industry to \$10b by 2030. One focus of this program is sustainable animal protein production, including the aim to protect and grow traditional and valuable agribusiness. Through their initial research, CSIRO has highlighted two areas in which they could add value as an independent and trusted advisor: reviewing population management practices (e.g., population modelling) and increasing kangaroo value through innovative products and processes.

## Recommendations for kangaroo management in South Australia and beyond

In the table below we present the top ten recommended priorities for improving kangaroo management in South Australia and beyond. These points are all key to moving towards more effective kangaroo management. The priorities fall under four main themes:

1. National coordination and leadership
2. Land manager support and community engagement
3. On-ground innovative projects and research
4. Industry development

These priorities will not all be best addressed by the Kangaroo Partnership Project or SA Landscape Boards. While a new iteration of the Kangaroo Partnership Project could drive and support many of the priorities that are directly relevant to the SA Landscape Boards (see those shaded in orange and discussed below), some of them would more appropriately be led by other entities.

We suggest that the priorities regarding industry development would be best led by peak agriculture industry bodies associated with or beneficiaries of effective kangaroo management and/or harvesting, with potential support from government entities like the PIRSA AKT, and research groups (e.g., Australian Wildlife Services, CSIRO). BDO EconSearch's Economic Analysis of the Harvesting Industry report, which was co-funded by the KPP and PIRSA AKT, provides key insights here and identifies priorities and opportunities for further development of the industry. While we consider that the Kangaroo Partnership Project is not the right entity to lead industry development projects, we wish to emphasise the importance of industry development in ensuring that the harvesting industry can become a more effective management tool for land managers working to mitigate the negative impacts of kangaroo populations.

**Table 7.** Top 10 recommended priorities for kangaroo management in South Australia and beyond, drawn from the learnings from the Kangaroo Partnership Project 2021–2023. Please note that the potential leads and partners are suggestions only and do not indicate any commitment from the named organisations.

Priority	Potential leads/drivers	Potential partners
<b>National coordination and leadership</b>		
<b>1. Greater political leadership and national coordination</b> on kangaroo management, including a <b>national strategy on kangaroo management</b> from a land management perspective, with clear outcomes for environmental conservation, sustainable agriculture, and cultural values	<ul style="list-style-type: none"> <li>State and Federal government and leadership</li> </ul>	<ul style="list-style-type: none"> <li>DEW Kangaroo Management Reference Group</li> <li>SA Landscape Boards</li> </ul>
<b>2. An established self-sustaining national community of practice</b> for NRM organisations to share learnings and explore shared solutions (i.e., NRMRA Kangaroo Management Community of Practice)	<ul style="list-style-type: none"> <li>SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>NRM Regions Australia</li> <li>NRM groups across Australia</li> </ul>
<b>Land manager support and community engagement</b>		
<b>3. Support for land managers</b> to manage kangaroos proactively for biodiversity conservation and stewardship, including transitions to new sustainable agricultural practices and emission reduction (CN30) <i>e.g., drought and climate resilience, nature repair market approaches, carbon neutral co-benefits</i>	<ul style="list-style-type: none"> <li>SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>DEW Kangaroo Management Reference Group</li> <li>SA Drought Hub</li> </ul>
<b>4. First Nations-led conversations</b> on kangaroo management, and support for contributions to the national conversation and decision-making	<ul style="list-style-type: none"> <li>SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>Local Aboriginal Elders and community</li> <li>DEW Kangaroo Management Reference Group</li> </ul>
<b>5. A national public conversation</b> on kangaroos to increase awareness around this complex land management issue and establish a norm of ethical kangaroo management as regional South Australia prepares for the next drought	<ul style="list-style-type: none"> <li>SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>Nature Conservation Society of SA</li> </ul>
<b>On-ground innovative projects and research</b>		
<b>6. First Nations-led projects</b> on kangaroo management that deliver both positive environmental, cultural, and social outcomes, including enterprising opportunities for First Nations on the management, harvest, and use of kangaroo product for cultural and commercial purposes	<ul style="list-style-type: none"> <li>SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>Kokatha Pastoral</li> </ul>

<p><b>7. Partnerships with animal welfare experts and organisations</b> to explore animal welfare concerns around kangaroo management, including the harvesting industry, and explore shared solutions</p>	<ul style="list-style-type: none"> <li>• DEW NPWS / Kangaroo Management Reference Group</li> <li>• PIRSA Agricultural Kangaroo Taskforce</li> </ul>	<ul style="list-style-type: none"> <li>• RSPCA Australia</li> <li>• SA Landscape Boards</li> </ul>
<p><b>8. Partnerships with independent research organisations and experts</b> to fund and lead research, including:</p> <ol style="list-style-type: none"> <li>(1) Environmental monitoring and evaluation research quantifying kangaroo grazing impacts and implications for land management, including biodiversity and sustainable agriculture.</li> <li>(2) Exploration and on-ground trials of management options, including innovative solutions <i>e.g.</i>, <i>population movement modelling, nature repair market and capital approaches, diverse farming practices.</i></li> <li>(3) Social research exploring public perceptions, public engagement and land stewardship approaches, strategic messaging, governance challenges, and policy implications and insights</li> </ol>	<ul style="list-style-type: none"> <li>• SA Drought Hub</li> <li>• DEW Kangaroo Management Reference Group</li> <li>• SA Landscape Boards</li> </ul>	<ul style="list-style-type: none"> <li>• SA Landscape Boards</li> <li>• Universities</li> <li>• Independent research consultancies</li> <li>• CSIRO</li> <li>• Bush Heritage Australia</li> <li>• Australian Wildlife Services</li> <li>• Nature Conservation Society of South Australia</li> </ul>
<p><b>Industry development</b></p>		
<p><b>9. Increased ability for the harvesting industry to meet harvesting quotas</b> through the recommendations outlined by the BDO EconSearch report, AWS report, and CSIRO research, <i>e.g.</i>, <i>increased kangaroo value, market diversification, harvester recruitment, alternative harvesting techniques for peri-urban settings</i></p>	<ul style="list-style-type: none"> <li>• PIRSA Agricultural Kangaroo Taskforce</li> <li>• DEW Kangaroo Management Program</li> </ul>	<ul style="list-style-type: none"> <li>• Regional Development Australia</li> <li>• Australian Wildlife Services</li> <li>• CSIRO</li> </ul>
<p><b>10. Increased consumer demand</b> for kangaroo meat</p>	<ul style="list-style-type: none"> <li>• PIRSA Agricultural Kangaroo Taskforce</li> </ul>	<ul style="list-style-type: none"> <li>• Regional Development Australia</li> <li>• Australian Wildlife Services</li> <li>• CSIRO</li> <li>• Patrons, campaigners</li> </ul>

## Recommendations: Next steps for the Kangaroo Partnership Project

Here we present the current planned 6-month extension to the Kangaroo Partnership Project, and recommendations for the next iteration of the project.

### Current 6-month extension to project

On the 8th–9th June 2023, the KPP committee met for a two-day strategy workshop to discuss the progress of funded projects and reassess priorities for the next six months. While the KPP formally came to an end in late July, residual funds were available due to the coordinator role being undertaken at a part-time capacity since July 2022. Because of this, the committee had already determined that the KPP coordinator role would continue to be resourced at a part-time capacity until the end of 2023.

This extension to the coordinator role provided the opportunity for the committee to brainstorm and prioritise projects and deliverables for the next six months (see Appendix I). These priorities include:

- Support ongoing KPP funded projects (see details below)
- Develop a policy submission for the legislative reviews underway/proposed whereby the South Australian National Parks and Wildlife Act, Biodiversity Bill, and providing a framework for input from other KPP partners.
- Continue KPP engagement and communication activities (e.g., Roo Roundup Newsletter, website development, grant project presentation webinar, KPP network workshop)
- Support self-sustaining networks that have emerged from the KPP (e.g., NRMRA Kangaroo Management Community of Practice)
- Following final reporting, develop a project prospectus and presentation to take to government ministers and other potential funders for the next iteration of the KPP.

The presence of residual funds allocated to grant projects also allowed the committee to consider extensions to current funded projects, as well as other emerging opportunities. The committee currently plans to contribute extension funding to:

- The Nature Conservation Society of South Australia's (NCSSA) Kangaroo Management Awareness Raising Project, specifically to:
  - Refine communication strategies
  - Strengthen collaborations
  - Expand community outreach
  - Develop educational resources
  - Advocate for policy reform
- Sponsoring an 'Eat Local' kangaroo stall led by the Quorn Community Landcare group at the Quorn Bushfood Festival in October 2023, inspired by the Kangaroo Collective Project
- Australian Wildlife Services to extend their project, specifically to:
  - Facilitate a full-day workshop in Port Augusta to present report findings to the Arid Lands Kangaroo Collective group, other interested land managers and Landscape Board staff.
  - Discuss the on-ground implications of the findings with the land managers as part of the workshop.

- Produce a 2–3–page summary of the report for use by KPP and KPP network, taking into consideration the land manager discussion, with an emphasis on including a brief list of prioritised pathways and next steps that can be used in future project proposals.
- Supporting one or multiple Yarning Circles with First Nations people focused on cultural perspectives and priorities for kangaroos, including considering:
  - The cultural values and importance of the kangaroo
  - Commercial opportunities, protections, and protocols
  - Messaging and narratives to generate social and cultural license and improve acceptance of management and consumption of kangaroo as an accessible and lean protein.

See below for detail on expected funding expenditure (Table 8). Efforts will also be made to take first steps for longer term opportunities and projects that are beyond current KPP scope, such as supporting the development of land manager kangaroo collective groups in new districts and regions and other tasks relevant to the priorities outlined above.

**Table 8.** Summary of expected expenditure on project extensions and other opportunities.

Project	Organisation	Funding offer
Awareness campaign project extension	Nature Conservation Society of South Australia	\$15,000.00
Workshop and findings factsheet	Australian Wildlife Services	\$5,000.00 (TBC)
Yarning circle	SAALLB	\$5,000.00 (TBC)
Kangaroo stall at Quorn Bushfood Festival	Quorn Community Landcare Group	\$3,000.00 (TBC)
Workshop and/or engagement with LivestockSA	Arid Lands Kangaroo Collective	\$1,000.00 (TBC)
KMT/KPP website updates	KMT website designer	\$1,000.00 (TBC)

## The future of the Kangaroo Partnership Project

The KPP has demonstrated the success of a partnership model in making progress on the complex ‘wicked’ problem of kangaroo management in South Australia. In this section we outline recommendations based on strengthening this approach and building on the relationships and processes that have been explored over the two-year project.

The two-year timeline outlined in the initial project application was designed to establish a framework from which future work could occur. This framework proved successful, as outlined above, in providing a platform to engage with all relevant stakeholders, and prioritising opportunities for “win-win” outcomes across stakeholder groups, with attention paid to environmental, economic, social and cultural outcomes.

While the key outcomes and deliverables were met by this project, this timeline and level of resourcing proved challenging with regards to delivering sustainable long-term outcomes and frequent engagement with the KPP network, and the broader community, particularly First Nations representatives. In addition, many challenges to kangaroo management were identified that we suggest are beyond the purview or expertise of the SA Landscape Boards, and therefore the Kangaroo Partnership Project, particularly challenges around the harvesting and processing industry identified through the BDO EconSearch Economic Analysis report.

Below we outline key considerations for the next iteration of the Kangaroo Partnership Project. These considerations aim to build on the achievements of the project and continue a collaborative approach to understanding and facilitating shared responsibility for this complex issue, while honing in on key land management priorities that the SA Landscape Boards and KPP network is well placed to deliver. These recommendations have been collated by the KPP coordinator, informed by discussions of future project priorities during the June 2023 strategy workshop with the KPP steering committee.

1. **Focus on kangaroo management priorities that are best addressed by the strengths of the KPP model** and network, specifically:
  - a. **Supporting land manager engagement** and supporting land managers to manage kangaroos on their properties and at a broad landscape scale (see Kangaroo Management Priority 3 above)
  - b. **Facilitating learning and knowledge sharing opportunities** within and between NRM organisations on a state and national level (*e.g.*, *NRMRA Kangaroo Management Community of Practice*), and working with relevant government departments and relevant stakeholders to support alignment and collaboration (see Kangaroo Management Priorities 2, 4 & 7)
  - c. **Coordinating and supporting opportunities for community education and increased awareness** and understanding of kangaroo management in South Australia (see Kangaroo Management Priority 5)
  - d. **Funding and providing support for on-ground and future facing projects** that explore and trial pathways to improve kangaroo management with an environmental land management lens, *e.g.*, *nature repair and biodiversity stewardship approaches, carbon neutral co-benefits* (see Kangaroo Management Priorities 6 & 8)
  - e. **Providing expertise and guidance to relevant external projects** that have clear implications for kangaroo management but do not have an explicit and direct land management focus, *e.g.*, *industry development projects* (see Kangaroo Management Priorities 1, 8, 9 & 10)
2. **Ensure appropriate resourcing** to support KPP coordination and engagement activities, specifically we recommend providing salary for:
  - a. 1x full-time locally based KPP coordinator
  - b. 2-3x 0.2 FTE Project Community Engagement roles, each based within a different partner Landscape Board staff, to support on-ground projects and facilitate local stakeholder and public engagement
    - i. Ensure the roles are based within Landscape Boards across the state to ensure support for land managers within different landscape types and social contexts (see #5 below)
3. **Extend the project length to a minimum of three years** to allow the time and resources for:
  - a. More public and stakeholder engagement activities, specifically including more frequent meetings and workshops with key partners to allow ongoing input into project progress and priorities and allow for adaptation as required.
  - b. More impactful on-ground projects designed to result in longer-term sustainable impacts, including Indigenous-led projects.
  - c. First Nations input into project progress and priorities.

4. **Create memorandums of understanding to clarify the nature of collaboration and support from partners**, particularly with the SA Landscape Boards, the DEW Kangaroo Management Reference Group and the PIRSA Agricultural Kangaroo Taskforce.
  - a. Confirm each groups' objectives, roles and relationships, and the shared responsibility to manage impact-causing native species.
  - b. Establish clear connections and processes between these groups and the KPP to ensure meaningful and practical impact for relevant policies and processes.
  - c. Ensure there is appropriate resourcing available to support and encourage collaboration where mutually beneficial and appropriate.
  - d. Explore potential for additional resourcing and capacity within department staff to allow for timely discussion and strategic responses to emerging issues where there are risks to environmental, cultural, and economic sustainability (e.g., drought)
5. Expand the project beyond the rangelands to include **all South Australian Landscape Boards** to allow for coordinated and meaningful change on the state-wide level, specifically ensuring:
  - a. Inclusion of regions with peri-urban landscapes *e.g., Hills and Fleurieu Landscape Board are already engaged with kangaroo management and part of the NRMRA Kangaroo Management Community of Practice*
  - b. Development of processes and management strategies that are sensitive to the different approaches required in different landscape types (i.e., rangelands vs. peri-urban)
  - c. Equitable access to land manager support throughout the regions
  - d. Dissemination of community education and awareness activities throughout the state

## Conclusion

This two-year project was the first critical stage in achieving long-term outcomes for kangaroo management in South Australia and at a national scale. The project has demonstrated successful stakeholder engagement across sectors, supported on-ground land manager decision-making and management, and worked to improve public understanding around this complex issue. Of particular significance is the demonstration of a successful partnership approach, which provided the space to explore innovative, 'whole-of-system' approaches to landscape management.

The partnership approach created a unique opportunity to connect the existing regulatory structures and groups (e.g., PIRSA AKT, DEW KMRG) to parties on the ground and further explore where information and knowledge gaps exist. By providing a space for thinking differently and supporting innovation and demonstration of new approaches to kangaroo management at the local level on the ground, the project has invited people into the conversation who have not been previously engaged to this extent. This is a particularly crucial development for local land managers who through this project demonstrated their clear interest in their role and associated opportunities to improve land manager capacity to manage the impact of kangaroo populations on production and conservation values.

The *Kangaroo Partnership Project* has also led and enhanced the national dialogue around kangaroo management in the hope that an interdisciplinary approach, facilitated by the NRM sector, can strengthen on-ground learning and delivery, and influence a national strategic and integrated approach.

Over the next six months, the project will continue to deliver through the provision of extension funding and support to new emerging opportunities that align with KPP themes and priorities, including supporting pathways to increase kangaroo value, support land managers, engage First Nations representatives, and improve community understanding of kangaroo management.

Future iterations of the project should build on the demonstrated partnership model to support longer-term on-ground trials that are scalable to the state scale, leverage other funding streams (Future Drought Fund Innovation Fund), and apply the learnings of other states.

The *Kangaroo Partnership Project* has highlighted the value and importance of a strategic, resourced collaborative approach to this 'wicked' problem and the need for a continued state and national focus.

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