

**INQUIRY INTO HEALTH AND WELLBEING OF
KANGAROOS AND OTHER MACROPODS IN NEW SOUTH
WALES**

Organisation: Kangaroo Industry Association of Australia Inc
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22 April 2021

Chair of the NSW Upper House Portfolio Committee 7 – Planning and Environment
Legislative Council
6 Macquarie Street
SYDNEY NSW 2000

Via: Parliament of NSW Committees website

Dear Committee,

Submission to the inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales

The Kangaroo Industries Association Australia (KIAA) welcomes the inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales (NSW) and appreciates the opportunity to make a submission. The KIAA is only in a position to comment on the health and wellbeing of the four large and abundant species that are permitted to be harvested for commercial purposes in NSW. Other macropod species, including threatened species, are not impacted by the activities of the commercial industry.

The KIAA is confident in the NSW Government's ability to responsibly manage these abundant species under the relevant State and Federal legislation and develop plans that adapt to changing circumstances and natural disasters. However, we also recognise the need to address concerns in the public domain and clearly distinguish between threatened and non-threatened species as well as commercial harvesting, non-commercial culling and the illegal slaughter of kangaroos. The trust of the Australian public in government protection of native wildlife and the integrity of the commercial industry is vital to preserving the reputation of the country and its industries internationally.

It is hoped that a fair exploration of scientific evidence and expertise will set the story straight on the need for population management of abundant species for conservation purposes and the sustainable and responsible role that the commercial industry can play. It also has the potential to identify practical ways in which governments, regulators, the kangaroo industry and landholders can control numbers with the best animal welfare outcomes.

The industry is very confident in its standards of excellence in animal welfare, sustainability and food safety. We follow the advice of government and scientists and comply with all regulations and codes. As well as being a part of our ethos, it is in our commercial interest to do so. Additionally, the macropod levy contributes to research to ensure international best practice.

In the absence of a commercial industry, conservation culling would still need to occur to manage the populations of certain species as seen in jurisdictions like the ACT. A strictly regulated and ethical commercial industry has the ability to make use of kangaroo carcasses that would otherwise need to be discarded. It ensures kangaroos are harvested humanely by licensed and qualified shooters, in sustainable numbers that are traced and recorded, and are used to create high-quality products that bring jobs and money into the economy.

There are three main issues that the industry wishes to bring to the attention of the Committee. The KIAA has long been calling for stricter oversight and standards for non-commercial culling as well as tighter policing of illegal activities. In addition, the use of exclusion fencing is of concern to all native species and requires further investigation.

Your sincerely,

Ray Borda
Chair
Kangaroo Industry Association of Australia

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1. Introduction

a) The KIAA only represents the commercial kangaroo industry

The KIAA is the peak representative body for 90 per cent of commercial kangaroo meat and skin processors across the country. It is important to distinguish between the commercial industry and non-commercial culling, which have to meet very different standards. The commercial industry sells kangaroo products in Australia and international markets. Therefore, it must prove its compliance with regulation around the numbers and species of kangaroos harvested, humane harvesting methods and hygiene procedures. Non-commercial culling is primarily conducted by landholders to protect their land from damage and overgrazing. This non-commercial practice is subject to fewer regulations and less scrutiny. The very different regulatory frameworks surrounding each have different outcomes for the health and wellbeing of kangaroos. The illegal slaughter of kangaroos occurs in some areas by unlicensed and untrained individuals – this, of course, happens outside any present control measures.

b) The commercial industry is valuable to the Australian economy, environment and culture

Formed in July 1970, the KIAA is committed to operating a sustainable, humane, accountable and valuable kangaroo industry that plays an essential role in preserving Australia's biodiversity. The KIAA advocates for evidence-based policy and strict regulation and enforcement, collaborating with government, scientists, farmers, conservation and animal welfare groups, and local communities to ensure best-practice and transparency. As such, it has become an international benchmark for a sustainable and humane wildlife harvest.

KIAA members manufacture and sell high-quality, traceable meat and leather products, responsibly sourced from an open range environment where kangaroos graze on the natural pastures and foliage of the Australian bush. The kangaroo industry adds more than \$200 million to the Australian economy and employs in excess of 3,000 people, the majority of whom live in remote and rural communities. This includes many First Nations Australians who have a long history of hunting and eating native fauna including kangaroo.

The commercial kangaroo industry also has positive environmental and social impacts. Its carbon footprint is lower than other meat and leather industries because kangaroos are harvested in the wild and not farmed or contained, kangaroos produce less methane than cattle and sheep and they have less of an impact on the land.¹ For these reasons, kangaroo leather is seen as an ethical and sustainable alternative to leather from farmed animals and synthetic materials. The commercial industry also provides traditional meat to First Nations Australians who live in urban environments and can no longer hunt and contributes to making kangaroo a part of our national cuisine.

c) The commercial industry plays an important role in conservation

If the view remains that abundant kangaroo populations need to be controlled for conservation purposes, consideration needs to be given to the most responsible management methods.

The commercial harvest is a sensible option because:

- the meat and skins, that would otherwise need to be discarded, are turned into valuable products;
- the animals remain in their natural habitat;
- it is a sustainable use of an Australian natural resource;
- the industry is tightly regulated and monitored;
- jobs for thousands of Australians are provided; and
- the high-quality products add to our identity at home and abroad.

2. The impact of commercial harvesting on the health of macropods

When we talk about the health of macropods in this context, we are referring to the size, growth and resilience of populations over time. Fluctuations in population size are expected as a natural effect of wet and dry seasons, but the long-term trends need to show sustainable numbers. In relation to the commercial industry, we are specifically looking at the impact of commercial harvesting on the populations of the four harvested species in NSW and its role in maintaining numbers at a sustainable level for the capacity of the land. This is essential to conserving biodiversity and reduce the extent of seasonal fluctuations, which can lead to increased suffering for the animals.

When investigating the health of harvested species, we ask the Committee to consider:

- the distinction between threatened and non-threatened species;
- the long-term growth trend of populations under the NSW management plan; and
- the need for greater oversight of non-commercial culling and illegal killing for improved forecasting.

a) A distinction needs to be made between the health of threatened and non-threatened species

With around 50 macropod species across Australia, population size and growth vary greatly depending on access to food and water, the presence of predators, the preservation of habitat, weather events, disease and conservation measures.

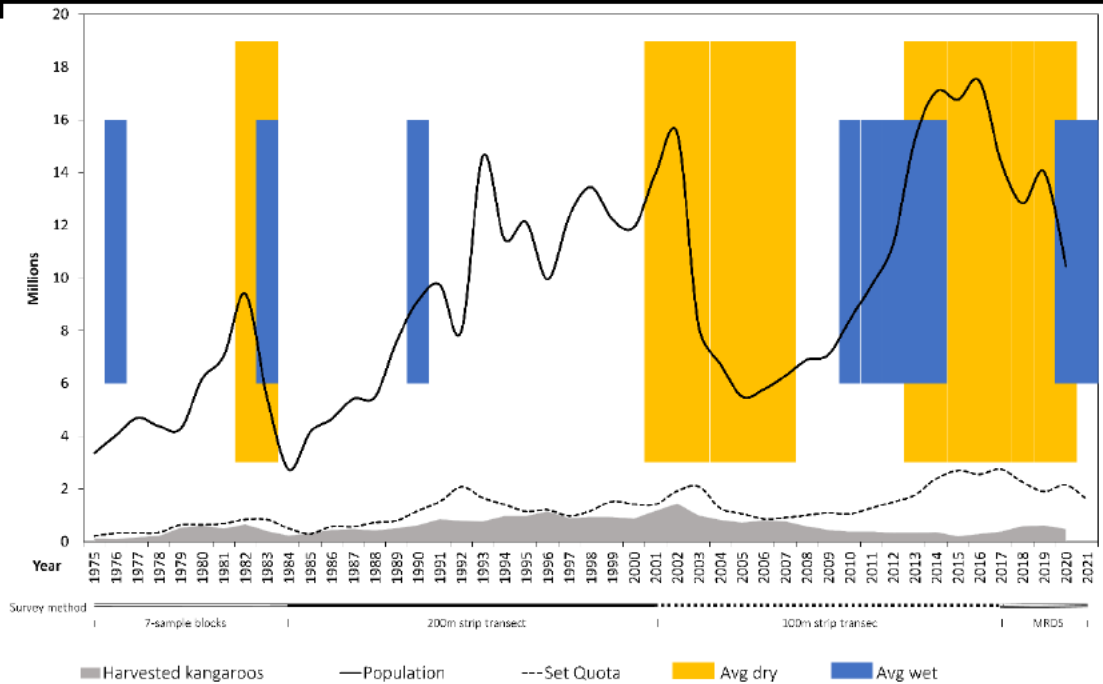
When considering the impact of the commercial kangaroo industry on the health of macropods in NSW, it is important to note that no species listed as threatened or endangered on State, Commonwealth or International listings are permitted to be harvested for commercial purposes. Therefore, the health of threatened species must be separated from the analysis of the Government's commercial kangaroo harvest management plan and commercial harvesting, which only apply to those abundant species which can be legally taken as part of the commercial program.

There are four large and abundant species of kangaroos and wallabies in NSW that are permitted to be commercially taken by licensed and qualified harvesters. These areⁱ:

Species	Status of population:		
	NSW legislation ⁱⁱⁱ	IUCN Red List ^{iv}	CITES ^v
1. Eastern grey (<i>Macropus giganteus</i>)	Common	Stable	Not listed
2. Western grey (<i>Macropus fuliginosus</i>)	Common	Increasing	Not listed
3. Red kangaroo (<i>Macropus rufus</i>)	Common	Stable	Not listed
4. Wallaroo (<i>Macropus robustus</i> ssp <i>robustus</i>)	Common	Stable	Not listed

b) Populations of harvested species have grown in the last 40 years under the NSW Government's plan

Historical harvest and population data must be considered when examining the long-term health and resilience of harvested species. The commercial kangaroo industry has been in operation in NSW for more than 40 years. Over this time, populations of harvested species have trended upwards.^{vi} Fluctuations in numbers have occurred due to wet and dry periods, not due to the commercial harvest, and have always recovered. The following graph was supplied by the Department of Planning, Industry and Environment based on publicly available population, quota and harvest data over the last four decades.



There are a number of protection measures in the NSW Government's kangaroo management plan that make commercial harvesting responsive to changing risk profiles for the four species. As seen in the graph, harvest quotas are set at around 15 per cent of the total population of each species, which is a conservative number set to avoid the commercial harvest having a detrimental impact on populations.

The Government has been known to halt or restrict the harvest if an event occurs that threatens the populations of harvested species. For example, the harvest was suspended or quotas reduced in 2020 and 2021 for certain species in specific harvest zones following widespread drought conditions in 2018. The table below was created with data from the NSW Government's 2020 and 2021 Quota Reports.^{vii}

Zone	Species	Status 2020	Status 2021
Tibooburra	Eastern Grey	Open	Closed
	Western Grey	Reduced (10% quota)	Closed
	Red Kangaroo	Closed	Reduced (10% quota)
Broken Hill	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Lower Darling	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Cobar	Eastern Grey	Closed	Reduced (10% quota)
	Western Grey	Closed	Reduced (10% quota)
	Red Kangaroo	Closed	Open
Bourke	Eastern Grey	Closed	Reduced (10% quota)
	Western Grey	Closed	Reduced (10% quota)
	Red Kangaroo	Open	Reduced (10% quota)
Narrabri	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Coonabarabran	Eastern Grey	Open	Open

	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Griffith	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Griffith North	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Griffith South	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Closed	Open
Armidale	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
	Walleroo	Open	Open
Glen Innes	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
	Walleroo	Open	Open
Upper Hunter	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
	Walleroo	Open	Open
South East NSW	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Central Tablelands North	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open
Central Tablelands South	Eastern Grey	Open	Open
	Western Grey	Open	Open
	Red Kangaroo	Open	Open

c) Restrictions around non-commercial culling need to be reviewed

In 2018, the NSW Government announced a loosening of the restrictions around non-commercial kangaroo management.^{viii} While population estimates of harvested species in NSW indicate that non-commercial culling is not having a long-term detrimental impact on the populations of harvested species, the KIAA calls for improved monitoring and reporting of non-commercial activities. A transparent kangaroo management program that addresses public concern requires detailed tagging and reporting as is done by the commercial industry. This includes reinstating the requirement for landholders to use drop tags.

3. The impact of commercial harvesting on the wellbeing of macropods

When we talk about the wellbeing of macropods in this context, we are referring to minimising negative animal welfare outcomes caused by the natural and human-made environment. We need to consider the wellbeing of entire species as well as the wellbeing of individual animals. This means that some animals might need to be killed in a humane way to reduce the uncontrolled suffering of large numbers. In relation to the commercial industry, we are specifically looking at the role of commercial harvesting in minimising pain and suffering caused by overpopulation, the comparative animal welfare outcomes of commercial harvesting to other population management methods, and the humane harvesting methods used by the industry.

When investigating the wellbeing of harvested species, we ask the Committee to consider:

- the animal welfare and biodiversity benefits of kangaroo population management;
- the ability for commercial harvesting to ensure the best animal welfare outcomes of all population management methods;
- the science behind recommended humane harvesting practices;
- the measures in place to ensure harvesters uphold animal welfare standards; and
- the new standard operating procedure in the Code around the euthanasia of dependent young.

These aspects are key to the development of the NSW Government's kangaroo management plan.

a) Managing abundant populations increases the animal wellbeing and biodiversity

Many domestic and international studies have been conducted into the conservation benefits of population management methods of overabundant herbivores such as culling or commercially harvesting.

Overpopulation of large kangaroo and wallaby species can lead to:

- overgrazing and food shortages
- mass starvation events
- loss of biodiversity
- damage to pastoral land
- increased road accidents
- more instances of non-commercial and illegal culling

According to a 2019 study by ANU and Australian Wildlife Services researchers, the commercial industry has the ability to reduce the amount of suffering caused to kangaroos and wallabies by helping to maintain abundant species at sustainable levels and, therefore, reducing the number of deaths by starvation, thirst, accident, disease and non-commercial culling.

These increases in population lead to a number of outcomes. Some are human responses such as more amateur shooting and the construction of kangaroo exclusion fences. Others are increases in motor vehicle collision and outbreaks of density dependent diseases. We suggest that all outcomes are unwelcome and that they would be less frequent with a stronger kangaroo industry and a well-managed commercial harvest in which landholders were more closely engaged and benefitted.^{ix}

A 2020 UNSW study into the impact of grazing by abundant numbers of herbivores, predominantly kangaroos, in conservation reserves (areas free from livestock) found that the semi-arid land had a maximum capacity for supporting wildlife and that overgrazing by kangaroos was linked to a reduction in biodiversity. The researchers said human activities had led to kangaroo populations becoming overabundant and this had exacerbated the threat to native flora and fauna.^x

Grazing by kangaroos and/or rabbits was linked to reduced complexity of understorey vegetation, grass cover, species richness of grasses, forbs and shrubs, the depletion of soil carbon and phosphorous, and increased soil bulk density. The marked impacts of grazing by wild herbivores, particularly kangaroos, on vegetation and soils that we report are symptomatic of overgrazing. Our study provides evidence that grazing by kangaroos may jeopardize conservation efforts across a large region of semi-arid Australia. We contend that managing the total grazing pressure exerted by wild herbivores is crucial to prevent overgrazing in dryland conservation reserves where herbivore populations are not regulated by predators.^{xi}



A 2014 study by the ANU Fenner School of Environment and Society into the relationship between the density of eastern grey kangaroo and grass structure found that grazing intensities impacted the abundance of reptile species.

Our data indicate that to maximize reptile abundance, species richness, species diversity, and occurrence of several individual species of reptile, managers will need to subject different areas of the landscape to moderate and low grazing intensities and limit the occurrence and extent of high grazing.^{xii}

b) Commercial harvesting has the best animal welfare outcomes of all management methods

In 2019, NSW Department of Primary Industries researchers completed a study into the comparative animal welfare impacts of the commercial industry to other kangaroo management methods such as fertility control, capture and translocation, capture and euthanasia and non-commercial shooting using the 'five domain' humaneness assessment model. They found that regulated and compliant commercial harvesting had the best animal welfare outcomes.

The animal welfare impacts of 'commercial harvesting'—when compliant with the relevant code of practice—are generally lower for targeted animals than for other management methods.^{xiii}

Non-lethal methods that involved capturing and relocating the animal were deemed to have the worst animal welfare impacts. Poisoning with urea, which is illegal, was also considered extremely harmful. In comparison to farmed animals, a wild harvest was considered better for the animals' wellbeing but that wild animals faced the threat of starvation and disease.

A comparison of the different animal welfare impacts experienced by kangaroos living in the wild and farm animals in intensive and extensive production systems in Australia revealed that kangaroos have more freedom and, therefore, less behavioural restriction than farmed animals, especially those produced in intensive systems. However, a range of different impacts, for example, resulting from food and water restriction during droughts, adverse weather conditions, and untreated disease and injury, can have a severe impact on their quality of life.^{xiv}

According to the study, non-commercial culling was considered more detrimental to the animal welfare of kangaroos than commercial harvesting. Non-commercial culling is the provision for landholders to apply for a Licence to Harm Kangaroos on their property to reduce the damage to the land. Although there is a National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-Commercial Purposes^{xv}, it has not been updated since 2008 and, compared to the commercial industry, there is little oversight and shooters are not registered or required to undergo an accuracy test or tag kangaroos.

'Non-commercial shooting'—when compliant with the relevant code of practice—has similar animal welfare impacts to commercial harvesting. However, if it is not conducted according to the code of practice, it can have extremely poor welfare outcomes.^{xvi}

The decision to separate the commercial and non-commercial codes was made during the 2008 review due to the different competency requirements. Commercial shooters have a higher skill level and are, therefore, expected to make head shots. Non-commercial shooters are less skilled and, therefore, given the larger target of the chest.

The main differences between the commercial and non-commercial codes are:

- Rimfire rifles
 - Commercial – can be used for smaller wallabies in open areas between 20 and 80 metres, depending on the firearm and ammunition combination outlined on page 21 in the Code^{xvii}
 - Non-commercial – can be used on smaller kangaroo and wallaby species in an open area up to 80 metres

- Shotguns
 - Commercial – use is prohibited
 - Non-commercial – can be used on small wallabies at close range in or near forest/scrub (at <30 metres) or for euthanasia of injured/sick kangaroo or wallabies, or pouch young and YAF at close range (at <20 metres)
- Point of aim
 - Commercial – head shot for target animals and commercial processors only accept head shots
 - Non-commercial – when using a rifle – must be head shot, when using a shotgun can be either head or chest shot
- Accuracy testing
 - Commercial – required
 - Non-commercial – not required

In 1985, RSPCA Australia presented a report to the Australian National Parks and Wildlife Service into the cruelty to kangaroos, specifically the eastern and western grey kangaroos, red kangaroos and the common wallaroo during commercial, non-commercial and illegal hunting. As outlined in the parliamentary inquiry report into kangaroos of the same year, RSPCA Australia concluded that:

...the incidence of animal cruelty was least in commercial killing and greatest in illegal killing with the non-commercial killing falling between the two... Under the present non-commercial system, there is considerably more cruelty than in the commercial operation. While some landholders shoot kangaroos with small calibre rifles or shotguns, and most without the marksmanship of professional shooters, there will be no diminution in the incidence of cruelty.^{xviii}

c) The humane harvesting methods used by the industry are based on the latest animal welfare research

The commercial industry follows the humane harvesting procedures outlined in the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes*^{xix} (the Code), which was updated in 2020 by Australia's leading kangaroo and animal welfare scientists in consultation with the RSPCA, the Australian Veterinary Association, government, industry, landholders and the general public.

According to the latest scientific research into kangaroo sentience and behaviour, it is believed the most humane method for killing kangaroos in the wild is a single shot to the head to destroy the vital parts of the brain. Clear diagrams are included on page 27 of the Code to ensure accurate placement. This method is believed to result in instantaneously unconsciousness followed by death. Harvesters are required to look for signs of life after every shot and must attend to wounded animals immediately.

If an animal is wounded, scientists agree that euthanasia of the animal using an approved method would minimise its pain and suffering. Again, a single shot is the preferred method for ensuring instantaneous unconsciousness and death.

The NSW Government carries out regular inspections in the field and on plant to ensure every kangaroo harvested for the commercial industry is done so in line with the Code. In 2015, the World Organisation for Animal Health independently assessed Australia's commercial kangaroo industry and awarded it the highest level of competency (Level 5) for animal welfare.^{xx}

d) Qualified and skilled shooters are able to ensure the highest animal welfare outcomes

Commercial kangaroo harvesters are qualified and skilled shooters that can administer the humane harvesting methods outlined in the Code with incredible accuracy. Harvesters must pass a shooting

accuracy test such as the Kangaroo Harvester Accreditation course through the NSW Firearms Safety and Training Council every five years before being issued a permit by the NSW Government.^{xxi}

This competency covers the skills and knowledge required to harvest animals humanely and defines the standard required to: identify the species to be harvested prepare and handle ammunition and weapons safely ensure the harvesting area is clear and notifications have been made where necessary harvest the animal using a shot to a body site appropriate to the target species that causes instant death and is prescribed in the relevant code of practice.^{xxii}

All commercial kangaroos must be harvested with a head shot in accordance with the procedure outlined on page 23 of the Code. Kangaroos wounded on the body by a gunshot cannot be used for commercial purposes, including for the skins, and are not accepted by commercial processors. If a commercial processor detects a non-head shot, they must complete a Gunshot Wound Incidence Report under Meat Notice 2020-1^{xxiii}. They will then follow the quality assurance procedures of that particular processor for detecting an incident, inspecting a carcase, documenting and reporting the incident and disposing of the affecting carcase as outlined in SOP 033 *Animal Welfare Reporting*^{xxiv} and WI 188 *Animal Welfare Reporting*^{xxv}. All investigations are done under the direct supervision of the Department of Agriculture On Plant Veterinarian (DA OPV) who has the responsibility to notify the NSW authority in the case of a breach. The DA OPV records any incidences of non-head shots on the Government database.

e) The industry follows the procedures in the Code for the humane treatment of dependent young

All commercial harvesters are required to strictly adhere to the standard operating procedures for the euthanasia of dependent pouch and at-foot young as outlined in the Code.

Harvesting females:

A male-only policy was introduced by the commercial industry in 2012/13 in response to public concern about deaths of dependent young. Previously, males made up about 70 per cent of all harvested kangaroos and, under the policy, this increased to about 95 per cent.^{xxvi} While this reduced the number of dependent young needing to be euthanased, a recent study found that prolonged sex-selective harvesting could have other negative animal welfare effects.

The sex bias from commercial use skews the sex ratio of harvested populations in favour of females. The consequences are faster population recovery following disturbance (e.g. harvest mortality or drought) and higher average densities than populations that have a greater proportion of males.^{xxvii}

An increase in kangaroo density would result in poorer animal welfare outcomes for the larger population such as more mass starvation events and non-commercial culling as outlined earlier. The research resulted in a change in the Code to remove a requirement for harvesters to “avoid” shooting females and a reversal of the policy by the industry. However, the preference for harvesting larger kangaroos leads to a natural skew towards males.

Dependent young:

It is widely accepted that the most humane course of action for dependent young who have lost their mother is euthanasia to prevent prolonged suffering and death. This applies to unformed pouch young the size of a jellybean to those in the in-out phase as well as at-foot young that are still suckling regularly.

Harvesters need to be able to identify the developmental stage to determine the most appropriate course of action. Two prescriptive standard operating procedures were added to the 2020 Code, which include photos of the different developmental stages, to ensure the best-practice application of euthanasia methods, leading to more human harvesting practices^{xxviii}.

Additionally, the commercial industry supports further research into other euthanasia methods such as the use of captive bolt devices.

5. Threats to macropod habitats

The growing urbanisation of NSW, the expanding of pastoral land, logging and the impact of natural disasters affect the natural habitats of macropod species. This degradation has impacted species differently. In the case of some threatened species, we have seen numbers drop. In the case of abundant non-threatened species, we have seen numbers and densities increase in certain areas due to the access to fertile pastoral land and manmade watering holes, and the reduction in natural predators. In relation to the commercial industry, we are specifically looking at the areas within NSW where harvesting is permitted, the commercial industry's overall impact on the environment and the impact of exclusion fencing.

When considering the threats to macropod habitats, we ask the Committee to consider:

- the NSW harvest zones compared to recent bushfire-hit areas;
- the comparatively low environmental impact of the commercial kangaroo industry; and
- the animal welfare impacts of exclusion fencing on native animals more broadly.

a) Harvest zones were not significantly impacted by the catastrophic bushfires of 2019–20

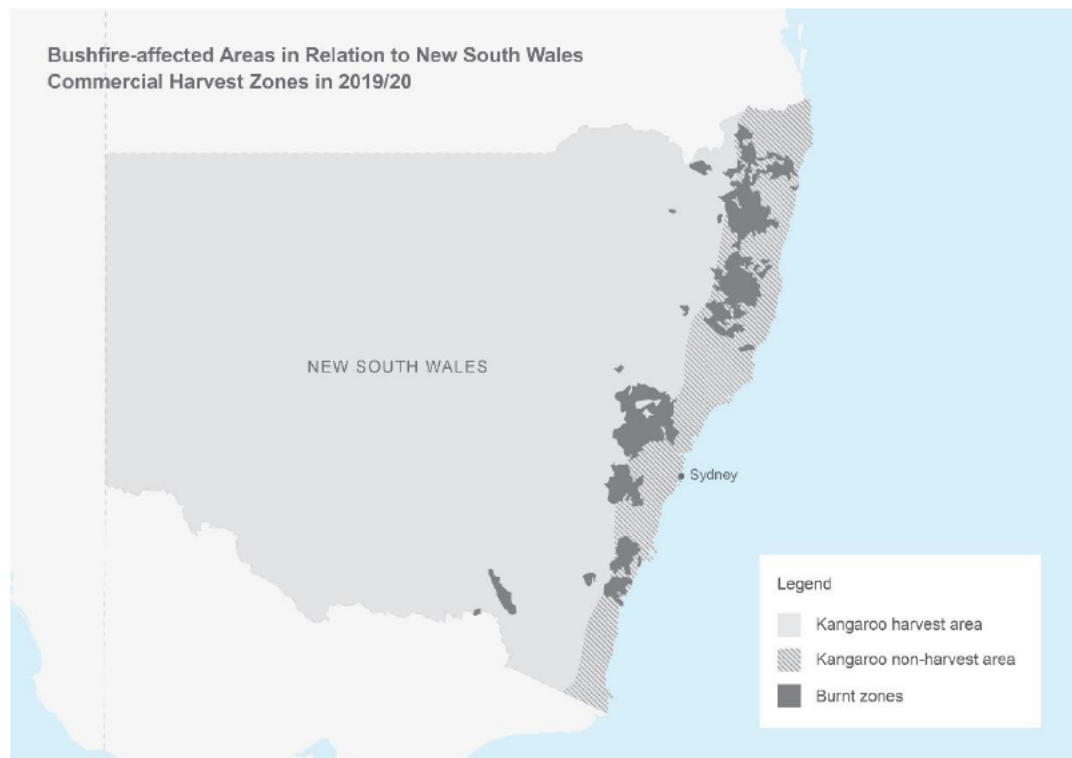
As outlined in the 2021 Quota Report, there are 15 management or harvest zones in NSW spanning 27,200km². Two zones were expanded in 2021 to “reduce reliance by landholders on non-commercial damage mitigation licences”.^{xxxix} The image below shows the division of the zones as well as the excluded protected areas.^{xxx}



Commercial harvesting of kangaroos is prohibited on protected land such as national parks and other reserves. It can only take place on privately owned land with the permission of the landholder. Mandatory tagging tracks the harvest back to the property.

In late 2019 to early 2020, NSW was hit by catastrophic bushfires. Macropods were caught up in the fires and many driven away from bushfire-hit areas. However, according to the Kangaroo Management Taskforce (KMT), the recent population drop of harvested species was due to severe drought in central and western NSW and little damage to kangaroo numbers was caused by the bushfires in the east. KMT independent chair Geoff Wise said "This decline is almost all due to the drought".^{xxxix}

This conclusion is supported by the historical population figures following severe droughts and the fact that most of the recent bushfire activity did not occur in harvest zones (see map).^{xxxix}



b) The commercial kangaroo industry has a comparatively positive impact on the environment

The NSW Government considers climate change in the development of its kangaroo management plan. As an industry, the KIAA is committed to playing its part by:

- reducing its carbon footprint
- reducing water usage and waste
- reducing biowaste
- increasing efficiencies
- eliminating hazardous chemicals in textile and leather processing
- adhering to government harvest quotas
- producing local and native products

The kangaroo industry already has a comparatively low carbon footprint, because kangaroos are better for the environment and the Australian landscape than introduced animals and the industry doesn't need to use any energy to capture and contain animals.

Compared to cattle and sheep.

- kangaroos have one-third the carbon footprint – cattle produce around 1.67 tonnes of carbon dioxide per animal per year, sheep produce around 0.14 tonnes per animal per annum and kangaroos only produce around 0.003 tonnes per animal per year.^{xxxiii}
- kangaroos need less water – cattle require 80 litres of water a day, sheep require 11 litres of water a day and kangaroos require 1.5 litres of water a day.^{xxxiv}
- kangaroos place one-third of the pressure on grazing lands.^{xxxv}

We quantified the GHG savings Australia could make if livestock were reduced on the rangelands where kangaroo harvesting occurs and kangaroo numbers increased to 175 million to produce same amount of meat. Removing 7 million cattle and 36 million sheep by 2020 would lower Australia's GHG emissions by 16 megatonnes, or 3% of Australia's annual emissions.^{xxxvi}

c) Exclusion fencing raises animal welfare concerns

Exclusion fencing (including TPG fencing, cluster fencing and conventional stock fencing) is the use of a fence or other barrier placed around a resource such as a crop or pasture to prevent kangaroos and other wildlife from accessing it.

In a 2014 survey conducted by Department of Primary Industries researchers, 51% of participants thought exclusion fencing was an acceptable method of managing kangaroos. Forty-nine per cent of participants viewed it as either 'slightly humane' or 'very humane'. Just over half of the participants (52%) considered exclusion fencing as an effective form of managing the grazing impacts of kangaroo.^{xxxvii}

The same researchers in 2020 found the potential negative animal welfare impacts of exclusion fencing to be:^{xxxviii}

- preventing access to familiar sources of water
- preventing access to familiar sources of food and shelter
- disruption of social groups
- alteration of natural movement patterns
- injuries and death from entanglement
- injuries and stress from trying to go over the fence or push through it
- prevention of movement during bushfires and flooding

The KIAA supports the researchers' call for urgent research to understand these impacts and to develop strategies to prevent or minimise harm.

6. Regulatory and compliance mechanisms

The commercial industry is subject to a large number of codes and regulations, which differ to those for the non-commercial industry. The conservation, animal welfare and food safety standards are some of the strictest in the world.

When considering the regulatory and compliance mechanisms for the commercial industry, we ask the Committee to consider:

- the mandatory licensing and tagging systems that allow for the commercial industry to be closely monitored and which don't apply to non-commercial culling; and
- the auditing processes and penalties that ensure compliance.

a) Mandatory licensing and tagging systems make kangaroo harvesting traceable and transparent

The KIAA complies with all animal welfare standards set by State and Federal governments, but we are always striving to improve. Over the years, we have pushed for greater scrutiny and rigour in how the industry is regulated and monitored as well as funded independent research projects into animal welfare and sustainability of the industry^{xxix} (full list of reports^{xl}).

- In 2019, the KIAA successfully lobbied the Minister for Environment to fund an audit by the RSPCA into the animal welfare of commercial kangaroo harvesting.^{xli}
- The KIAA and Federal Government jointly funded a study to monitor welfare outcomes for kangaroos under actual field condition.^{xlii}
- The KIAA pays a levy on all kangaroos commercially processed to fund independent research administered by AgriFutures.^{xliii}

Licensing:

Under the Act, it is an offence to harm, buy or sell kangaroos for commercial purposes without a licence. Harvesters, landholders and kangaroo dealers require a licence in order for commercial harvesting to take place. All licence holders undergo a relevant accreditation process to receive their licence and there are conditions for holding onto it.

Commercial harvesters must pass a shooting accuracy test (AMPG306 Use Firearms to Harvest Wild Game) by a Registered Training Organisation every five years to be issued and retain a commercial licence.^{xliv}

To retain the licence, harvesters must comply with the *National code of practice for the humane shooting of kangaroos and wallabies for commercial purposes* (the Code). Under the Code, commercial harvesters have a 'duty-of-care' to the animals to ensure they are taken in a manner that minimises pain, suffering and distress. The Code also outlines in detail the appropriate equipment, range, weather conditions and procedure to maximise accuracy. In NSW, the Code is distributed as part of an information package to licensees. This includes advice on how to use the licensing system, how to ensure they comply with licence conditions and forms for harvesters who are offline.

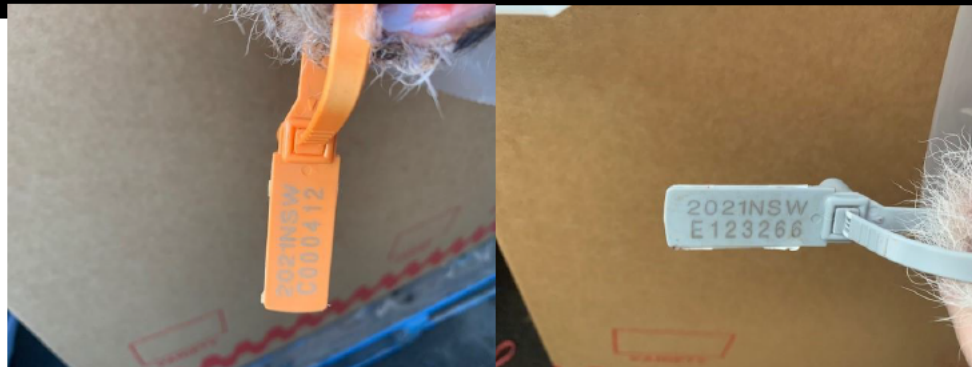
In addition to complying with harvester licensing requirements, harvesters must also gain permission from landholders to harvest on their properties via a consent form that is approved by the Kangaroo Management Program. After harvesting takes place, carcasses can only be sold to licensed kangaroo dealers.

Tagging:

All kangaroos harvested for commercial purposes must be tagged and recorded as outlined in the *SOP 13 Product Identification and Traceability*.^{xlv} Tags are only issued to harvesters who hold a relevant commercial licence, so they ensure shooters have the skill to meet the requirements of the Code. The tags and relevant reporting also allow the NSW Government to monitor harvesting levels and locations.

Kangaroos are identified by two tags:

- the NSW Government tag – identifying the licensed harvester, the harvest zone, the property on which the kangaroo was harvested, the issuer and the valid calendar year; and



- the company tag – identifying the licensed harvester, the date, place and time of the harvest, the field chiller, the unique carcass number and the harvester's signed declaration.

The declaration is carried on the back of every tag and must be signed by the harvester

Shooter name and chiller site is pre-printed and is linked to the unique number directly on its left. The number to the right of the name is the registration number for the appropriate food authority

In order to print tags for harvesters this unique number is called up on the tag machine (GP4000) and is linked to the harvester's name. This is also the case with the chiller number.

Tag Number : 127382

This is a unique number so that every carcass can be recognised individually regardless of species or type of animal.

Barcode is used to reconcile the carcasses loaded in at plant. Notice the number at the bottom of the barcode directly reflect the shooter no. and chiller no.

Carcass weight is not a requirement but most shooters will include it. Harvest Location is the particular property the carcass was shot, can also use number if appropriate. Harvest Date and Harvest Time are the exact date and time the carcass is harvested.

Harvest location must be either a PIC number, or the full property name where the carcass was harvested. Any other codes or abbreviations are unacceptable.

NO ABNORMAL BEHAVIOUR WAS OBSERVED DURING KILLING
NO ABNORMAL CHARACTERISTICS WERE OBSERVED DURING THE EXAMINATION OF THE BULY AND JOY RESERVE VICINIA
THERE IS NO SUSPICION OF ENVIRONMENTAL CONTAMINATION
IF KILLED DURING DAYLIGHT, THE CARCASS WAS TRANSPORTED TO A FIELD DEPOT OR WILD GAME MEAT PROCESSING ESTABLISHMENT WITHIN 2 HOURS OF HARVEST, IF KILLED DURING NIGHT AND BLINDING IT WAS TRANSPORTED TO A FIELD DEPOT OR WILD GAME MEAT PROCESSING ESTABLISHMENT NO LATER THAN 2 HOURS AFTER HARVEST WITH A MAXIMUM OF 12 HOURS BETWEEN KILLING AND PLACING INTO A FIELD DEPOT.

SIGNED

Shooter #: 1243 MORGAN R - Blackall 103071
Chiller #: 62 Blackall
State: QLD
Carcass Weight: 22 kg
Harvest Location: PT AUGUSTA
Harvest Date: 15/2/18
Harvest Time: 3:16 am/pm

The tags follow the carcasses to the dealer and follow the skins to the leather processors, who only accept skins with the relevant state tags. The skins are accompanied by an inventory form that records the harvester, the species, the quantity and the harvest location.

Document title: CARCASS INVENTORY
Document number: FORM QA 24

DATE: _____ DS / AS Run# _____ Species: _____

SAMPLE NO. (WILD BOAR ONLY)	SHOOTER NO.	LOCATION	HARVESTER	CARCASSES PROCESSED		TOTAL
				PIC NUMBERS	PROPERTY NAMES	

b) Government auditing and penalties keep harvesters accountable

Harvesters report monthly to the NSW Government, which also conducts field audits of harvesters and plant audits so it can monitor harvest numbers and animal welfare standards. Tag data, including quantity and weights, are monitored to make sure harvesters are complying with their licence conditions.

Penalties can range from cautions to warning letters, penalty infringement notices, fines, prosecutions and suspension or loss of licence. The NSW Government refuses the sale of harvest tags to non-compliant harvesters and communicates with licensees to support them to comply.

7. Recommendations

The KIAA makes the following recommendations to improve the health and wellbeing of macropods in NSW:

- **An urgent review into the animal welfare impacts of exclusion fencing on all native animals.**
A comprehensive study needs to be done into the full impact of the fencing on all species including their migratory patterns. Population surveys should include fenced areas and migration corridors should be established where appropriate.
- **A single code of practice for the commercial harvest and non-commercial culling.**
The code should set nationwide requirements around shooter competency, licensing and mandatory tagging and reporting that already exist for the commercial industry.
- **Reintroduction of drop tags for culling under a damage mitigation permit and greater policing.**
This should be part of a full review of the 2018 changes to non-commercial culling. This could include an exploration of whether there should be an onus on landholders to use the commercial industry first to control kangaroo numbers to ensure the highest animal welfare outcomes and greater transparency.
- **Authority for rangers to enter a private property to inspect carcasses.**
Similar to fish inspectors, rangers should be able to inspect carcasses and take appropriate action for animals found without tags. There needs to be more rigour into checking for illegal activity and setting up a framework that puts more conditions around non-commercial culling.

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