

Submission
No 189

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

Organisation: Kangaroos Alive

Date Received: 6 May 2021

Submission
No 409

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

Organisation: Kangaroos Alive

Date Received: 6 May 2021



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



www.kangaroosalive.org
info@kangaroosalive.org



The Director
Portfolio Committee No.7 – Planning and Environment
Parliament House
Macquarie Street, Sydney, NSW 2000

By email: portfoliocommittee7@parliament.nsw.gov.au

Dear Sir/madam

Re: Submission to the Inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales

Please find attached our submission to New South Wales inquiry regarding kangaroo management our response is below.

KANGAROOS ALIVE (KA) is a nationally accredited not for profit organisation set up as a global movement for the ethical treatment of kangaroos. It is a not for profit organisation registered under the Corporations Act 2001

Filmmakers Mick McIntyre and Kate McIntyre Clere spent 7 years researching the treatment of kangaroos in Australia whilst producing their award-winning documentary *KANGAROO A Love-Hate Story*

They travelled extensively across NSW and QLD, driving several thousand kilometres in making the film, interviewing farmers, kangaroo shooters, scientists, community leaders and activists. This eye opening experience shocked them to their core.

After meeting kangaroo carers Diane Smith and Greg Keightley they joined forces to create KA. KA is working to turn Diane and Greg's conservation property in the Blue Mountains into a kangaroo sanctuary and research centre. KA have instigated several public awareness campaigns in Europe, America and Australia

Recent events have revealed that people in Europe and America are not willing to be part of a commercial industry that condones this institutionalised cruelty towards kangaroos.

Several big brands in Europe have stopped the use of kangaroo products, including fashion labels **GUCCI, PRADA, VERSACE** and supermarket chains **Carrefour, Cora, Makro, Match and Spar**. Members of the European Parliament (MEP) have launched a campaign to ban imports of kangaroo products into the EU Led by Anja Hazekamp Member of MEP for Dutch Party for Animals and President of the EU Intergroup on the welfare and conservation of Animals. She now has the support of over 100 MEP's (they need a simple majority of the 700 MEP's)
[LAUNCH OF EU CAMPAIGN VIDEO-https://www.youtube.com/watch?v=GrUU7-EKEOU](https://www.youtube.com/watch?v=GrUU7-EKEOU)

In 2021 KA launched WorldKangarooDay.org on October 24th
For more information see www.kangaroosalive.org



Executive Summary

This Inquiry represents a watershed moment for the state of NSW in how we treat and look after our national icon the kangaroo.

This inquiry gives us the opportunity to pause and reflect on the importance of having kangaroos in our landscape and to apply ethics on how we are treating them under the current management system.

The New South Wales Commercial Kangaroo Harvest Management Plan (NSW HMP) has not been through a public review process in over 25 years. We hope that in making this submission that the assumptions, information, policies can be reviewed to bring about a significant change in kangaroo management in NSW and across Australia. An inquiry into the treatment of kangaroos in NSW is needed in view of the vast numbers killed across the state, the pain and suffering inflicted on kangaroos, and the fundamental flaws and gaps in the legal framework that is supposedly designed to protect them.

This inquiry opportunity is not unprecedented. In 1978 Australia, under the leadership of then Prime Minister Malcolm Fraser, held an independent Inquiry into Whales and Whaling. Australia at that time was still a whaling nation that killed whales for commercial purposes.

In fact, many coastal towns were once whaling centers including in NSW, in Byron Bay and Eden. With mounting public interest, Prime Minister Malcolm Fraser appointed Sir Sidney Frost to head the inquiry. Established in March 1978, the Inquiry received submissions from scientists, government agencies, members of the public and whaling interests as well as conservation groups.

The Frost Report, as the Inquiry's findings became known, was presented to the Prime Minister in December 1978. The substantial report and accompanying papers can be summed up in the first line of the Inquiry's Recommendations: *"Australia should oppose the continuance of whaling"*.

From that time forward Australia's position, domestically and internationally, would be one of opposition to whaling. This inquiry allowed Australia to pause and reflect and ultimately change direction. We became a nation that cared and valued whales 'alive'.

Similarly, concerns regarding the commercial utilisation of Australian wildlife led to a Senate Select Inquiry on the matter in 1988¹. The inquiry noted that the kangaroo

¹ Senate Select Committee on Animal Welfare (1988). Kangaroos, Parliament of the Commonwealth of Australia.



industry institutionalised the suffering of kangaroos, yet determined that commercial killing was necessary due to the impact of kangaroos on farming income. It appears that the committee did not value the benefits of having kangaroos in the landscape.

Like whales, kangaroos are a charismatic megafauna and of great importance to Australia and the Australian ecosystem. We call on the members of the committee overseeing this inquiry into kangaroos and wallabies to draw inspiration from the 1978 whaling inquiry and know that the NSW government has a chance to make history in making change from exploitation to protection and celebration

KANGAROOS ALIVE does not support the killing of kangaroos and wallabies. We believe that humans need to learn to co-exist with kangaroos not kill them.

Shooting kangaroos threatens kangaroo population, results in poor animal welfare and the consumption of kangaroo products risks human health and safety. The killing of kangaroos is one of the worst examples of indifference and intolerance towards wildlife in the world and reflects badly on Australia's international reputation.

Kangaroos have been part of Australia's history for millennia. Part of the Macropodidae family, they have lived in Australia for millions years and been hunted by Indigenous Australians for 60,000². Kangaroos and other macropods are ecosystem engineers³ because they can affect the environment of other species. Kangaroos selectively graze and modify the habitats of grassland birds and invertebrates^{4 5} They preyed upon by dingoes (*Canis dingo*), wedge-tailed eagles (*Aquila audax*) and red foxes⁶ (*Vulpes vulpes*) (Robertshaw and Harden 1989). Macropods are the gardeners of Australia, spreading the seed of native grasses and fertilising nutrient deficient soils and therefore contribute to the ecological health and function of landscapes. Consequently, the widespread removal of Australia's largest herbivore has major implications for Australia's ecological resilience.

² Wong, S. 2019. Australia has been home to hopping kangaroos for 20 million years. New Scientist Magazine issue [3217](#), published 16 February 2019

³ Jones, C. G., Lawton, J. H. and Shachak, M. (1997). Positive and negative effects of organisms as physical ecosystem engineers. Ecology 78, 1946-1957

⁴ Neave, H. M. and Tanton, M. T. 1989. The effects of grazing by kangaroos and rabbits on the vegetation and the habitat of other fauna in the Tidbinbilla Nature Reserve, Australian Capital Territory. Australian Wildlife Research 16, 337-351.

⁵ Neave, H. M. 1991. The ecological impacts of grazing by kangaroos. National Parks Journal 35, 16-18.

⁶ Robertshaw, J. D. and Harden, R. H. (1989). Predation in Macropodidae: a review. In 'Kangaroos, Wallabies and Rat-Kangaroos.' Eds. G.



This submission covers four main areas, kangaroo welfare, conservation, human health and hygiene and the importance of live kangaroos to Australian culture and economy. These relate to the inquiry terms of reference in the following ways:

Item b) the accuracy with which kangaroo, and other macropod, numbers are calculated when determining population size

Item c) threats to kangaroo, and other macropods and their habitat including climate change, drought, bushfires, land clearing, vehicle strikes and entanglement in fencing.

(e) current government policies and programs in regards to 'in pouch' and 'at foot joeys' given the high infant mortality rate of joeys and the unrecorded deaths of orphaned young where females are killed,

Item g) the impact of commercial and non-commercial killing of kangaroos and other macropods, including the difficulty of establishing numbers killed by landholders since the removal of the requirement for drop tags

Item (h) Current and alternative measures to provide an incentive for and accelerate public and private conservation of kangaroos and other macropods



Accuracy of determining kangaroo population size

This section relates to (b) in the TOR for the Inquiry which pertains to the accuracy with which kangaroo, and other macropod, numbers are calculated when determining population size

The NSW HMP intends to provide a management framework for the commercial harvest of kangaroos in NSW.

The government currently sets quotas as a proportion of the estimated (variable) populations for the four species of kangaroos that are permitted to be commercially killed. For red kangaroos, kill quotas are generally set at 17% of the estimated population and for eastern grey kangaroos, western grey kangaroos and wallaroos it is set at 15% of the estimated population.⁷ NSW export of kangaroo products including meat, skins and leather requires the approval of the Commonwealth Government under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). To satisfy requirements of the EPBC Act, the HMP aims to ensure that

- Kangaroo populations in NSW remain ecologically sustainable; and
- The methods of harvesting kangaroos for commercial use are humane

This section firstly focuses on whether the management of kangaroo populations in NSW is ecologically sustainable. Page 13 of the HMP notes that “in setting the quotas and analysing trends, OEH uses accepted population thresholds for each species”. There is no explanation of how the thresholds are determined, what science they are based upon and what the thresholds actually are for each species, Therefore the term ‘ecologically sustainable’ is vague because the NSW KMP fails to define what is the target density for each species in each zone. The NSW quota report should include each density threshold triggers for each commercially killed species in order to determine if objective 1 of management for ecologically sustainability is being met. In the absence of the above information we use the best available science on kangaroo density levels provided by Hacker et al. (2004) to evaluate whether Department of Planning, Industry and Environment (DPIE) is meeting their first objective.

⁷ Department of Planning, Industry and Environment 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan 2017–2021



Wildlife populations naturally respond to fluctuating environmental conditions and they depend on the “carrying capacity” of their habitat. Despite the myth that kangaroo numbers are abundant, there is no evidence as to what their numbers should be in the landscape i.e the carrying capacity of kangaroos is unknown.⁸ The closest that the science has been to determining the number of kangaroos that ecosystems in NSW can sustain is from Hacker et al. 2004. Kangaroo Management options in the Murray-Darling Basin.

According to Hacker et al. 2004 harvesting that *“results in an average long-term density of less than 10 kangaroos/sq km should be rejected since in all such cases the minimum density is likely to fall below the critical level”*.⁹ Hacker et al. (2004) also note that the “critical minimum density is not clearly defined, populations below 2/sq km would generally be considered at risk of extinction”.

The table below is from Department of Planning, Industry and Environment (DPIE) 2021 Quota Report New South Wales. We draw your attention to column 3 red kangaroo densities and column 5 grey kangaroo densities. In 2020, in 7 commercial zones the estimated population density fell to extremely low densities with the estimated average density being 5.27 red kangaroos and 5.62 grey kangaroos per square kilometre. Using these figures, we question the ecological sustainability of the NSW KMP.

⁸ McLeod, S. R. 1997. Is the concept of carrying capacity useful in variable environments? *Oikos* 79(3):529-542.

⁹ Hacker et al. 2004. Kangaroo management options In the Murray-Darling Basin



Table 4 Red and grey kangaroo population estimates and standard errors for 2020 for the Western Plains

Management zone	Red kangaroo population estimate	Red kangaroo density (km ²)	Grey kangaroo population estimate	Grey kangaroo density (km ²)
Tibooburra	200,465 (± 29,803)	3.65	6,859 (± 3,420)	0.12
Broken Hill	1,197,474 (± 150,143)	13.15	281,410 (± 70,990)	3.09
Lower Darling	583,802 (± 70,355)	10.31	314,639 (± 50,785)	5.56
Cobar	102,480 (± 24,791)	2.54	44,208 (± 16,644)	1.09
Bourke	117,975 (± 20,167)	2.14	41,501 (± 14,670)	0.75
Narrabri	190,468 (± 38,728)	2.90	745,775 (± 189,122)	11.34
Coonabarabran	152,052 (± 39,195)	2.46	891,090 (± 189,447)	14.44
Griffith North	126,160 (± 39,185)	1.92	421,161 (± 95,870)	6.4
Griffith South	253,492 (± 71,510)	3.95	371,796 (± 87,057)	5.8
Total	2,924,368 (± 241,382)	5.27	3,118,439 (± 403,442)	5.62

The estimated numbers and densities of red and grey kangaroos in each management zone

The mismanagement of kangaroo population is apparent in other commercial zones. In Griffith North where the density was 1.9 there should have been a cessation of killing but the 2021 quota remained at 17% see table below.¹⁰ As noted by Hacker et al. (2004) page 37 when a kangaroo population density falls to 2/sq km it is generally considered that that population is at risk of localised extinction. Therefore, the DPIE is not meeting objective 1 in the management plan and their 'management' of red kangaroos is insufficient to prevent their localised extinction.

¹⁰ DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan



Kangaroo management zone no. 17: Griffith North

Table 32 Red kangaroo temporal variation – Griffith North

Average density (kangaroos/km ²)		2.16	Standard deviation		0.34
Area in km ²		65,758			
Year	Population	Density	% Change	Quota	% Population
2019	159,645	2.4	0.0	0	0
2020	126,160	1.9	-21.0	27,123	17.0
2021				21,447	17.0

The table¹¹ below shows the population trends for western grey kangaroos. In 2017 and 2018 their population is at very low densities where they are at risk of localised extinction¹².

Table 13 Population estimates and trends in abundance for western grey kangaroo on the Western Plains, 1997–2018

Year	Population estimate (millions)	Density (km ⁻²)	Trend in abundance (% change from previous year)
2018	0.84 ± 0.58	1.52	-8.7
2017	0.92 ± 0.15	1.68	-42.5

This next section challenges the NSW DPIE ‘estimates’ of kangaroo populations that are used as a basis to set the commercial killing quotas. The evidence presented will show that the NSW government figures show growth in red and grey kangaroo populations that are biologically impossible.

Between 2017 to end of 2019 the majority of New South Wales and southern Queensland suffered from extreme drought conditions¹³. There was a marked deficit in winter rainfall resulting in severe shortfalls in effective rainfall combined with far above normal maximum temperatures across northern New South Wales and southern Queensland¹⁴. Regions to the northeast of Broken Hill had only 17.8 mm between January to September 2018 and other sites in and around Broken Hill had

¹¹ DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan

¹² Hacker et al. 2004. Kangaroo management options In the Murray-Darling Basin

¹³ Wittwer, G. et al. 2020 Estimating the Regional Economic Impacts of the 2017 to 2019 Drought on NSW and the Rest of Australia; Victoria University, Centre of Policy Studies/IMPACT Centre

¹⁴ BOM Special Climate Statement 66 an abnormally dry period in eastern Australia 1 November 2018



less than 30 mm, whilst locations with less than 50 mm included Cobar, Wilcannia, Menindee and Pooncarie.¹⁵

The science is clear that drought have a negative impact on kangaroo fecundity and survival. When rainfall is 100 mm below average in the east and approximately 60 mm below average in the west of NSW kangaroo populations decline.¹⁶ If drought persists for longer than six months, wallaroos cease breeding until the drought breaks¹⁷. Kangaroos grow and breed slowly and have high juvenile mortality. For example, a grey kangaroo doe can produce up to 8 independent joeys in her lifetime, with just two likely to survive to independence.¹⁸ In a mild drought 83% of young red kangaroos die and in a severe drought 100% juvenile mortality.¹⁹ Caughley et al. (1984) found a reduction in red kangaroos by 41% and 45% for the two species of grey kangaroos during drought²⁰. When considering the high juvenile mortality in drought, kangaroo populations fall by 60%²¹. Despite the severe drought the annual quota remained at (10%-17%) for red kangaroos and (12-15%) for grey kangaroos, meaning that kangaroos are being killed beyond their reproductive capacity.

The following two tables are sourced from DPIE 2021 Quota Report Table 22 Red kangaroo temporal variation – Cobar.²² Despite 2019 being the driest year on record, red kangaroo estimated populations supposedly increased by 284% from 36,058 to 102,480. Drought and human hunting results in localised extinctions of red kangaroo as evidenced with the 0.9 density in 2019. The quota was suspended in 2019, more likely because there were virtually no kangaroos around to shoot, rather than due to appropriate management intervention.

2015	357,287	8.9	19.7	50,738	17.0
2016	437,129	10.8	22.3	60,739	17.0
2017	229,495	5.7	-47.5	74,312	17.0
2018	44,733	1.1	-80.5	39,014	17.0
2019	36,058	0.9	-19.4	0	0
2020	102,480	2.5	184.0	0	0
2021				17,422	17.0

¹⁵ BOM Special Climate Statement 66 an abnormally dry period in eastern Australia 1 November 2018

¹⁶ Caughley, J. Peter Bayliss and Jack Giles 1984. Trends in Kangaroo Numbers in Western New South Wales and their relation to Rainfall. Aust. Wildl. Res., 1984, 11, 41 5-22

¹⁷ Tyndale-Biscoe, H. 2005 Life of Marsupials. CSIRO Publishing

¹⁸ Mjdewesh, R 2011 Kangaroos at Risk, <https://www.kangaroosatrisk.net/>

¹⁹ WDL Ride 1970 A guide to the native mammals of Australia. Oxford University Press

²⁰ Caughley, J. Peter Bayliss and Jack Giles 1984. Trends in Kangaroo Numbers in Western New South Wales and their relation to Rainfall. Aust. Wildl. Res., 1984, 11, 41 5-22

²¹ Mjdewesh, R 2011 Kangaroos at Risk, <https://www.kangaroosatrisk.net/>

²² DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan



Table 23²³ shows Grey kangaroos in Cobar increasing by 604% between 2019 to 2020 (not 504% as quoted in table 23). Alarming the density was 1.1 and still a 10% quota was set in 2021.

2016	405,079	10.0	-17.7	73,831	15.0
2017	184,069	4.5	-54.6	60,762	15.0
2018	81,391	2.0	-55.8	22,239	12.1
2019	7,317	0.2	-91.0	0	0.0
2020	44,208	1.1	504	0	0
2021				4,421	10.0

Eastern grey kangaroo population can realistically increase by 10% annually. While, red kangaroo population growth rate is around 13.5%, and Wallaroo population growth rate around 12%".²⁴ This accounts for the high juvenile mortality and changing weather conditions that affect resource availability.

If red kangaroos increased by 10 per cent 2019-20, the population would in a simplistic theoretical calculation grown by 3,605 or if 30 per cent figure is used then their population would have increased by around 10,817. This is far below the 66,422 increase the DPIE numbers suggest. It is biologically impossible for kangaroo populations to increase rapidly.

This raises the question of whether the population estimates are correct or inflated? Perhaps because commercial killing had been suspended for a year, DPIE faced pressure from landholders and needed to show that the population had increased to justify the 2021 quota in the Cobar zone.

Are the inflated figures a mathematical anomaly for one management zone in Cobar? It appears not as in Bourke the management or numbers also appear suspicious.

Table 24²⁵ shows Red kangaroo temporal variation for the Bourke zone

2015	504,671	9.2	14.8	74,725	17.0
2016	730,140	13.3	44.7	85,794	17.0
2017	461,968	8.4	-36.7	124,124	17.0
2018	244,687	4.5	-47.0	78,535	17.0
2019	497,085	9.0	103.2	41,597	17.0
2020	117,975	2.1	-76.0	84,504	17.0
2021				11,797	10.0

²³ DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan

²⁴ Mjadwesch, R. 2011. NOMINATION TO LIST THE LARGE MACROPODS AS THREATENED SPECIES IN NSW <https://www.kangaroosatrisk.net/2-biology--population-ecology.html>

²⁵ DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan



How did red kangaroo populations increase from 244,687 in 2018 to 497,085 in 2019 a drought with a 17% quota? Then fall to 117,975 in 2020. Furthermore, how did a 2.1 density fail to trigger a cessation of the quota in 2021 as it is far below the 6.4 red kangaroos per square kilometre trigger density.

Table 20²⁶ shows the Red kangaroo temporal variation in the Lower Darling zone. How is it possible that red kangaroo population could increase from 2.2 times from 307,619 to 691,119 in a drought? A density of 5.1 in 2017 and 5.4 2018 should have triggered according to the management plan a suspension in the quota for 2018 and 2019 yet it remained at an unsustainable level of 17%.

2016	619,113	11.0	59.9	65,836	17.0
2017	289,385	5.1	-53.3	105,249	17.0
2018	307,619	5.4	6.3	49,195	17.0
2019	691,119	12.2	124.7	52,295	17.0
2020	583,802	10.3	-16	117,490	17.0
2021				99,246	17.0

Population methodology

Critically flawed kangaroo survey methodologies such as correction factors systematically inflate population estimates from which commercial shooting quotas are then over-allocated. The method used to determine population estimates is flawed and inaccurate. It is impossible to take a sample from one area and apply it to the rest, as neither kangaroos nor kangaroo species are equally distributed.

The state government relies on aerial surveys that only spot a very small percentage fraction of kangaroos in the landscape and then rely on correction factors²⁷ which have been modified over the last 30 years²⁸ to provide stable estimates of kangaroo populations. In addition, the extrapolation does not take into account natural disasters such as bushfires, floods and illegal shooting by farmers

Conclusion and recommendations

The figures in the before mentioned tables are an indictment on how kangaroos are managed in NSW. The fact that the KMP does not outline the minimum density thresholds for each species in each zone, with the exception of red kangaroos in

²⁶ DPIE 2021 Quota Report New South Wales Commercial Kangaroo Harvest Management Plan

²⁷ Pople, A. R. (2008). "Frequency and precision of aerial surveys for kangaroo management." *Wildlife Research* **35**: 340-348.

²⁸ Ben-Ami, D. (2009). *A Shot in the Dark - a report on kangaroo harvesting*. Sydney, Australia, Animal Liberation NSW.



zone 2 Broken Hill (see Appendix 1) is a major concern.

Due to this we conclude that the management is not based on science, but rather on politics and appeasing landholders who wish to eradicate kangaroos. There is no explanation of how the thresholds are determined, what science they are based upon and what the thresholds actually are for each species.

On the other hand, the inflated numbers in drought puts in question the validity of the population estimates. Does it merely act give the appearance that DPIE are managing kangaroo populations appropriately to satisfy the EPBC Act? The perception of kangaroo population is pivotal to this debate as to whether the commercial kangaroo industry should continue.

Despite it being biologically impossible, government departments like DPIE and farmers present that kangaroo population numbers are 'exploding'. Which is then picked up by mainstream media to help legitimise the agenda of the commercial industry.

If the population count methodology and NSW HMP plan were for the survival of the species rather than the continuance of the commercial kangaroo industry would we see this constant error in inflation from the scientists and department?

Unlike kangaroo management, Australian scientists engaged in the 'management of whales' in the southern oceans have provided robust intelligence into the population science on an international stage - KANGAROOS ALIVE recommends this same robust intelligence needs to be used in NSW and across Australia for terrestrial wildlife management



Kangaroo and macropod welfare in NSW

This section relates to item(b) in the TOR regarding threats to kangaroo, and other macropods and their habitat.

Kangaroos and other macropods face a number of threats that impact their welfare. Threats arise from commercial and non-commercial shooting, extreme events such as prolonged drought, fires and flooding, habitat destruction, being killed or injured on roads or becoming entangled in barbed wire fencing where they die a long and protracted death. While each individual threat compromises the well being of kangaroos the accumulation of these factors have a serious impact on the health and welfare of kangaroos.

Land clearing in NSW and its effects on macropods

The science is clear that hunting and habitat destruction fuels wildlife extinctions and is a significant welfare issue²⁹. In Australia, 29 terrestrial endemic mammals became extinct since European settlement in 1788. This represents almost half of all mammal extinctions in the last two hundred years³⁰. Between 2014 and 2017, land clearing in NSW was the subject of a major legislative review³¹. In 2016-17 land clearing spiked to over 20,000 ha, representing a near doubling of clearing from the previous period, occurring in part in anticipation of the introduction of the *Biodiversity Conservation Act 2016*³². A 2017 report by the Australian government found that more than half of the NSW has already experienced serious loss of ecological communities, with losses at between 26 and 50 % of their original extent³³. The historic pattern of vegetation loss in NSW coincides with areas where biodiversity is most threatened, making land clearing an important and contentious issue within the state³⁴.

Habitat modification and land clearing for agricultural in NSW has been responsible for ~50 % of total land clearing (excluding the effect of bushfires) over the past 25 years³⁵. Land clearing can cause direct injuries to macropods due to the use of machinery as well as causing stress and injuries by fence entanglement and motor

²⁹ Finn, H.C. and Stephens, N.S. (2017) The invisible harm: land clearing is an issue of animal welfare. *Wildlife Research*, 44 (5). pp. 377-391.

³⁰ Woinarski, J., Burbidge, A., Harrison, P. (2014) Ongoing unraveling of a continental fauna: Decline and extinction of Australian mammals since European settlement. *PNAS* vol. 112 no.

³¹ NSW Government, 2019. Biodiversity Legislation Reform Background. <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/overview-of-biodiversity-reform/legislation/review>.

³² E.C. Heagney D.S. Falster , M. Kova. 2021 Land clearing in south-eastern Australia: Drivers, policy effects and implications for the future. *Land Use Policy* 102

³³ Cresswell ID & Murphy HT (2017). *Australia state of the environment 2016: biodiversity*, independent report to the Australian Government Minister for the Environment and Energy, Australian Government Department of the Environment and Energy, Canberra.

³⁴ Bombell, A and Montoya, D 2014 Native Vegetation Clearing in NSW: A regulatory history Briefing Paper No 05/2014

³⁵ NSW Office of Environment and Heritage, 2016. NSW Report on Native Vegetation 2013–14. <http://www.environment.nsw.gov.au/resources/nativeveg/nsw-report-native-vegetation-2013-14.pdf>



vehicle strike.³⁶ It can also cause stress in the longer-term due to loss of cover from predators such as wedge tailed eagles, foxes and dingoes.

Furthermore, a primary driver for shooting kangaroos is due to perceived impacts on agriculture. Consequently, kangaroos are impacted in multiple ways due to agriculture. Across Australia, a significant land mass (44 per cent) is allocated for livestock grazing, whereas a mere 11.6 per cent of the continent is designated in the national reserve system (NRS), which includes national parks, nature reserves, private conservation reserves, indigenous protected areas, and other reserve types.^{37 38}

All macropod species have different habitat preferences. Selection of habitat is therefore dependent upon a variety of factors, including resources such as shelter, forage and water as well as the presence of predators and the perceived risks associated with each habitat³⁹. For example, eastern grey kangaroos favour foraging in open-woodland habitat⁴⁰ such as eucalypt woodland and sclerophyll forest.⁴¹ Therefore the clearing of this type of vegetation may impact grey kangaroo health and wellbeing. Eastern grey kangaroos use forested habitat as a refuge and forage closer to cover when predation risk is high.⁴² When kangaroos graze in open areas they are most vulnerable to being shot for commercial and non-commercial purposes.

Drought and vehicle strikes

Kangaroos can be impacted by a confluence of factors such as the interplay between drought and vehicle collisions. For example, a study by Lee et al. (2004) found that during drought kangaroos are more susceptible to being killed by vehicle collisions. The factors that increase road kills include kangaroo population density along the road, night-time traffic volume, low rainfall and higher vegetation cover and greenness along the road relative to surrounding areas.⁴³

³⁶ Finn, H.C. and Stephens, N.S. (2017) The invisible harm: land clearing is an issue of animal welfare. *Wildlife Research*, 44 (5). pp. 377-391.

³⁷ ABARES (2018) Beef Farms Industry Overview. <http://www.agriculture.gov.au/abares/research-topics/surveys/beef>

³⁸ Watson, J et al. (2010) The Capacity of Australia's Protected-Area System to Represent Threatened Species. *Conservation Biology*, Volume 25, No. 2, 324–332

³⁹ Ramp, D. and Coulson, G. 2002 Density dependence in foraging habitat preference of eastern grey kangaroos. *OIKOS* 98: 393–402.

⁴⁰ Ramp, D. and Coulson, G. 2002 Density dependence in foraging habitat preference of eastern grey kangaroos. *OIKOS* 98: 393–402.

⁴¹ WDL Ride 1970 A guide to the native mammals of Australia. Oxford University Press

⁴² Banks, 2001

⁴³ Lee E, Klöcker U, Croft DB and Ramp D, 2004. Kangaroo-vehicle collisions in Australia's sheep rangelands, during and following drought periods. *Australian Mammalogy* 26: 215-226.



Kangaroo threat perception

Kangaroos learn from previous interactions with humans, habituating to benign human disturbances and rapidly identifying humans as a threat when previous interactions were harmful.⁴⁴ The frequency of past harmful disturbances such as human harassment and/or shooting significantly affected kangaroo risk perception of when to flee to avoid harm (injury or death). A recent study by Austin and Ramp (2019) found that kangaroos that had experienced higher frequencies (more than once per week) of harmful disturbances flee almost immediately after human stimulus was detected. This has implications for kangaroo wellbeing (fitness) such as nutritional deficiencies due to lost foraging opportunities, resources and increased energy expenditure for kangaroos and wallabies when they flee. The Austin and Ramp (2019) study indicates that kangaroos modify their behaviour in response to harmful interactions with humans such as shooting. This is also seen in predator avoidance with other prey species where harms such as those posed by humans or large predators creates a 'landscape of fear' that alters the time and location of grazing by prey species.⁴⁵

As evidenced above, kangaroo mobs that are frequently exposed to shooting are more prone to flight. When this occurs kangaroos experience a number of poor welfare outcomes occur. Specifically Kangaroos can:

- flee towards roads where they may be hit by passing cars,
- can become entangled in fencing,
- mobs can become fragmented, and
- mothers can be separated from their young.

There is pain and distress inflicted on the kangaroos who are not shot. Those kangaroos who have witnessed family members and friends being killed experience and emotional harm that has not been quantified. Furthermore consideration must be given to the impact of killing on mob social structures and protections, as well as the long-term impacts of killing older kangaroos who are essential knowledge holders for the mob.

McLeod and Sharp (2014) authored a report funded by the Rural Industries Research and Development Corporation to investigate the fate of joeys after their mothers were killed and ways to improve young kangaroo welfare. They concluded that maternal separation causes a negative welfare impact for young kangaroos. The short-term response of western grey young-at-foot to both an abrupt and permanent separation from maternal care was correlated with:

⁴⁴ Austin, C and Ramp, D. 2019. Flight responses of eastern gray kangaroos to benign or harmful human behaviour. *Ecology and Evolution*. 2019: 00:1–11.

⁴⁵ Laundré et al. 2010 The Landscape of Fear: Ecological Implications of Being Afraid. *The Open Ecology Journal*. 3: 1-7



- an increased frequency of vocalisations. Vocalisation” in joeys only occurs when joeys are stressed they cough or cry for their mother, increasing vulnerability to predators,
- a marked increase in aggressive acts directed toward the separated young-at-foot, and
- a reduction in the proportion of time spent grooming and playing.⁴⁶

Threats to other species from the commercial kangaroo industry

Other wildlife species are also affected by the kangaroo industry. The remains of kangaroo carcasses (1,600,000 individuals on average per year) including heads and tails are left in the field where kangaroos are shot. This creates extra resources in the environment for introduced species such as foxes and cats, which are responsible for the extinction of multiple non-kangaroo species in Australia⁴⁷. Furthermore, meat baits laced with 1080 poison intended to kill canids such as dingoes and foxes is often made from kangaroo meat, which has an impact on both target and not target species.

Human health concerns

As the health of wildlife is intrinsically linked to human endeavours, there is a strong ethical and economic incentive to improve the lives of wildlife, protect the environment, prevent disease outbreaks, and reduce the risk of cross-species transmission. Zoonotic diseases that pass between humans and animals are the leading cause of new diseases in humans.

Kangaroos are shot in the wild and are eviscerated in the open where access to potable water and proper sanitation is limited. As wild-caught animals, kangaroos also carry parasites and diseases that threaten human health. These include harmful nematodes such as *Globocephaloides trifidospicularis*, which consumes intestinal mucosa and blood of kangaroos causing mortality⁴⁸. Surprisingly, kangaroo meat is not routinely tested for zoonotic pathogens such as *Toxoplasma gondii* which has been recognised as a serious long-term human health risk and therefore is a high potential risk to retailers selling kangaroo meat products. For example, an outbreak of kangaroo borne toxoplasmosis in humans was recorded.⁴⁹

COVID-19 is an emerging infectious disease (EID) at the animal-human-environment interface. This is a wake-up call for greater consideration of One Health, the interconnected health of animals, humans and the environment. COVID-19 has shone a light on wildlife trade as an anthropogenic driver of EID. Wildlife trade

⁴⁶ McLeod and Sharp (2014) Improving the welfare and humaneness of commercially harvested kangaroos. RIRDC

⁴⁷ Croft, D. B. (2000). "Sustainable use of wildlife in western New South Wales: Possibilities and problems." *Rangeland Journal* **22**(1): 88-104.

⁴⁸ Fletcher, D. 2006. Population Dynamics of Eastern Grey Kangaroos in Temperate Grasslands. Thesis

⁴⁹ Robson, J.M.B. et al. (1995) A probable foodborne outbreak of toxoplasmosis. *Communicable Dis. Intelligence* **19**, 517–522



encompasses trade in live animals (for example for consumption and in the pet trade) as well as dead animal parts and derivatives for use as food. Despite the significant risk, there is little systematic monitoring of the movement of animals in wildlife trade or their pathogens. The kangaroo industry is no different.

Zoonotic diseases (originating in animals) and are largely the result of anthropogenic drivers (such as biodiversity loss, climate change, habitat destruction, land use change, intensive farming, diminished ecosystem function and increasing human population density). These anthropogenic drivers can cause stress and altered immune function in animals that may increase zoonotic EID risk.

The Australian guidelines for the processing of kangaroo meat in the field are relaxed compared to game meat guidelines in Europe, Namibia and South Africa where large game meat is either chilled or eviscerated within 4 hours by a licensed butcher⁵⁰. In Australia, carcasses are eviscerated in the field by hunters, without supervision, and then transported in unrefrigerated trucks through the night for up to two hours after sunlight in high summer desert temperatures⁵¹. The carcasses are stored in refurbished shipping containers that in some cases not fit for purpose for up to 14 days. In 2018 Salmonella was found in kangaroo meat in the Netherlands and removed from supermarket shelves. Russia banned contaminated kangaroo meat imports in 2009, 2012 and again in 2014⁵². Moreover, an internal NSW food safety review has found multiple chillers to be non-hygienic and contaminated⁵³. A paper published in 2008 found salmonella and E.Coli in retail kangaroo meat⁵⁴. In 2009 a paper identified toxoplasmosis as a risk in Western Grey Kangaroos⁵⁵.

⁵⁰ Van der Merwe, M., P. J. Jooste, and L. C. Hoffman. 2011. Application of European standards for health and quality control of game meat on game ranches in South Africa. *South African Veterinary Journal* **82**:170-175. Van Schalkwyk, D. L. and L. C. Hoffman. 2010. Guidelines for the Harvesting of Game for Meat Export 2010. Ministry of Environment and Tourism Ministry of Agriculture, Water and Forestry, Namibia.

⁵¹ Anon, 2007. Australian standard for the hygienic production of wild game meat for human consumption. Collingwood, CSIRO.

⁵² Stewart, M *Food Safety Issues Affecting Kangaroo Meat Industry* Australian Food Safety News, 5 Dec 2012. <https://www.foodsafety.com.au/2012/12/food-safety-issues-affecting-kangaroo-meat-industry/>

Federal Service for Veterinary and Phytosanitary Surveillance news *The Rosselkhoznadzor Detained a Kangaroo Meat Consignment of a Questionable Quality* 25 July 2013. http://www.fsvps.ru/fsvps/news/7137.html?_language=en

Tapp, V *Russia bans kangaroo meat due to unacceptable levels of E.coli* ABC Rural News, 19 Aug 2014. <http://www.abc.net.au/news/2014-08-18/kangaroo-meat-ban/5677656>

⁵³ <http://www.smh.com.au/nsw/nsw-kangaroo-meat-fails-basic-hygiene-tests-20150306-13uyft.html>, 7th Mar 2015.

⁵⁴ Holds, G., et al. (2008). "Microbial profiles of carcasses and minced meat from kangaroos processed in South Australia." *International Journal of Food Microbiology* **123**(1-2): 88-92.

⁵⁵ Parameswarana, N., et al. (2009). "Seroprevalence of *Toxoplasma gondii* in wild kangaroos using an ELISA." *Parasitol International* **58**: 161-165.



Conclusion and recommendations

It is unknown what the cumulative impacts of a severe drought, extreme heat, the most devastating bushfires ever seen across the world and now widespread flooding have on kangaroo populations. Bushfires can injure kangaroos with burnt feet leading to infected foot wounds or damaged lungs. Furthermore, kangaroos can die of starvation weeks after the initial fire⁵⁶. These studies of kangaroo populations were not carried out by the NSW Govt following fires and floods yet the quotas in some commercial areas remained and in some areas the quota increased. Furthermore, the rules governing the shooting of kangaroos in 2019 following the black summer fires were relaxed at this time allowing for more non-commercial or unregulated kills.

We also want greater public awareness of the significant risks that the kangaroo bushmeat industry may present to human health which is of paramount importance given the impact of the Covid-19 pandemic on human health and the world economy.

⁵⁶ Fletcher, D. 2006. Population Dynamics of Eastern Grey Kangaroos in Temperate Grasslands. Thesis



Welfare implications of commercial and non-commercial killing of kangaroos

This section relates to item (g) the impact of commercial and non-commercial killing of kangaroos and other macropods, including the difficulty of establishing numbers killed by landholders since the removal of the requirement for drop tags

“Destroying species is like tearing pages out of an unread book, written in a language human hardly know how to read”. (Rolston, 1975)

Kangaroo shooting in NSW is supposed to comply with legislation such as the Prevention of Cruelty to Animals Act (POCTA Act) as well as two codes of practice:

- The National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes, 2020 (“the Commercial Code”);¹⁴ and
- The National code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-Commercial Purposes, 2008 (“the Non-commercial Code”).^{15 16}

Kangaroos Alive opposes the killing of kangaroos on a number of grounds:

- Significant welfare harms to adult and young kangaroos and cruelty
- The high ethical costs
- The high ecological cost of the industry
- The damage to Australia’s reputation internationally.

It is important to note that kangaroos are a native and protected species. The Prevention of Cruelty to Animals Act (POCTA Act) applies to kangaroos and kangaroo shooters. Therefore, shooters would be committing an act of cruelty to a kangaroo if they committed an ‘act or omission as a consequence of which the animal is unreasonably, unnecessarily or unjustifiably... beaten, ...killed, wounded, ...mutilated, maimed, abused, tormented, tortured, terrified or ...inflicted with pain’ (ss4(2) and 5).

Under the Biodiversity Conservation Act 2016 (NSW) (“BC Act”), it is an offence to harm a protected animal (s2.1(1)(c)). Under Schedule 5 to the BC Act, protected animals include ‘mammals of any species (including aquatic or amphibious mammals but not including dingoes)’ that are native to Australia. Kangaroos are therefore protected animals. Whereas ‘Harm’ is defined to include ‘kill’ (s1.6 of the BC Act).

Killing a kangaroo is therefore harming a protected animal, which is an offence under section 2.1(1)(c) of the BC Act.

Under section 2.10 of the BC Act it is a defence to an offence under the BC Act if the alleged offending conduct was authorised by a biodiversity conservation licence. For kangaroo shooters, a licence to harm granted under the BC Act is therefore necessary to render lawful what would otherwise be a breach of the Act (killing a protected animal).



Welfare and cruelty inherent in the commercial kangaroo industry

The shooting of kangaroos is inherently cruel and results in significant negative welfare implications. The only way to ensure the welfare of kangaroos is to severely restrict the shooting of kangaroos. Here we present two main welfare issues:

1. Welfare costs for adult kangaroos
2. Welfare costs for young

Kangaroo killing results in a high welfare cost for adult kangaroos that are targeted by both commercial and non-commercial shooters and the fate of their young who are also killed as collateral damage when females are shot. Kangaroos are shot in the wild and at night when they are actively foraging. These nighttime hunting conditions even with the use of spotlights affect the ability of shooters to aim precisely at their target

Animal welfare standards for the commercial killing of kangaroos are detailed in the Code of Practice. The Code stipulates the minimum standard of welfare for commercial shooting as well as the minimum specifications for firearms and ammunition; procedures and conditions. The newly revised Code 2019 significantly weakens standards and welfare protections for kangaroos. This includes (but is not limited to):

- reduced standard for accurate shooting with the removal of the requirement that shooters aim for the brain as specified in the 2008 Code and replaced them with the less rigorous requirement of a head shot;
- weakening of protections for female kangaroos and their dependent young with the removal of the direction in the 2008 Code that shooters avoid targeting female kangaroos with obvious dependent pouch young;
- claim that unfurred joeys are not "sentient" and are therefore unable to experience pain to justify allowing shooters to break the neck and/or decapitate young.

While the Code does specify the practices that if conducted appropriately are intended to result in a quick or instantaneous death. It fails in its objective to reach an 'achievable standard of humane conduct' due to the lack of oversight at the point of kill and lack of enforcement of the Code standard operating procedures. This results in minimal detection of Code violations and subsequent lack of penalisations for breaches to the Code. Consequently, the lack of enforcement creates no incentive for shooters to follow the Code. Why has the Code not become law after decades of commercial killing?

According to the NSW HMP plan 2017-2021 "all kangaroos must be taken in accordance with this Code". The Code requires kangaroos to be shot in the head. However past studies indicate that non-fatal body shots are a regular part of the industry, potentially causing horrific injuries and painful prolonged deaths to kangaroos. The number of kangaroos that are not killed with a headshot and left to



die is difficult to pinpoint, with estimates ranging between 4-40%.⁵⁷ According to the minutes for the 2019 NSW KMP Meeting “30 a day non head shot continues is not new – its not seen till its getting put through as steak or mincer”⁵⁸. This figure only captures the kangaroos that are inspected for processing with the numbers of non-head shot kangaroos left in the field would be much higher. Non-compliance with the Code is a concern, particularly with respect to non-fatal body shots⁵⁹ and the killing of both mis-shot kangaroos and orphaned dependent young.⁶⁰ Despite the existence of the Code the commercial kangaroo industry continues to perpetuate cruelty towards kangaroos.

The methods of killing young kangaroos can be cruel if not performed properly to achieve instantaneous death. RSPCA's chief science and strategy officer, Dr Bidida Jones, says “while the RSPCA did have input into the code, it does not approve on-the-ground methods of killing joeys”.⁶¹

Enforcement of the Code

Enforcement of animal welfare law in relation to the commercial kangaroo industry is governed by the Code, which provides the primary policy mechanism to protect kangaroo welfare. Therefore, a discussion on enforcement is important to this submission as it is important to assess the degree to which the Code stipulations are enforced in the field. The Code itself is not enforceable, but gains enforceability through integration into the state laws. However, state government agencies are limited in their ability to inspect carcasses at the point of kill. Without inspections at the point of kill it is impossible for agencies to ensure compliance with the Code's conditions on killing dependent young and injured adult kangaroos.⁶²

The auditing of killing practices in the field was even raised by during the public consultation of the Code revision with shooters, interest groups including animal protections and conservation organisations all raising significant concerns. The community expects auditing at the point of kill. Adherence to the code is a

⁵⁷ Ben-Ami D, et al. 2014. The welfare ethics of the commercial killing of free-ranging kangaroos: An evaluation of the benefits and costs of the industry. *Animal Welfare* 23: 1–10.

⁵⁸ NSW KMP Meeting Minutes 3/4/2019
<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Wildlife-management/Kangaroo-management/Advisory-committee-minutes/minutes-of-kangaroo-management-advisory-panel-meeting-april-2019.pdf?la=en&hash=F52BD55E2575A36B7F0967857B59D8A97ABD2980>

⁵⁹ Ben-Ami D, et al. 2014. The welfare ethics of the commercial killing of free-ranging kangaroos: An evaluation of the benefits and costs of the industry. *Animal Welfare* 23: 1–10.

⁶⁰ Ben-Ami D, et al. 2014. The welfare ethics of the commercial killing of free-ranging kangaroos: An evaluation of the benefits and costs of the industry. *Animal Welfare* 23: 1–10.

⁶¹ Khadem, N (2021) Proposed US ban on kangaroo products raises industry fears it could bring out more 'cowboys' *The Business ABC*

⁶² Boom, K and Ben-Ami, D. 2012. 'Shooting our wildlife: An Analysis of the law and its animal welfare outcomes for kangaroos & wallabies' 5 *Australian Animal Protection Law Journal* 44.



requirement of the licenses and permits issued by state and territory macropod management agencies, therefore failure to adhere to the code provides grounds to suspend, withdraw or refuse a license or permit (Commonwealth of Australia, 1988). Yet because there is virtually no auditing at the point of kill or investigations undertaken of reports or shooters accounts of illegal killings, the public cannot be assured that the Code achieves its aims. Animal welfare laws can only be effective where they are enforced. There is repeated evidence of police dismissing calls from the public with regards to kangaroos shooting. In our experience, and as previously discussed, this has been a critical failing of the regulation of the commercial industry to date.

In NSW there are no specific conditions relating to the Code for licensees in the commercial kangaroo industry specified in the *National Parks and Wildlife Act 1974* (NSW). Nonetheless, Section 133(2) provides that the Director-General may attach any conditions or restrictions to a licence upon its issue. Similarly, Section 133(3) allows the Director-General to attach any conditions or restrictions to the licence after its issue; vary or remove any conditions or restrictions attached to the licence; or otherwise vary the licence Condition 4 of Current Conditions on Commercial Fauna Harvester Licences, as provided in the NSW Handbook for Kangaroo Harvesters, states that the holder of a Commercial Fauna Harvesters Licence must only harm kangaroos in accordance with the Code. Condition 15 provides that the licensee must not possess or sell any kangaroo carcass containing a bullet wound in the body.

Prosecutions rarely occur and where prosecutions have been successful, low fines are generally imposed. Yet this is not because violations of the Code do not occur. It is that the evidence is lacking or that whistle blowers themselves are now prosecuted under various legislation designed to remove independent evidence gathering of evidence documenting violations to the Code and acts of cruelty. In the absence of greater enforcement, we assert that the Code fails in its remit to achieve the minimum standard of welfare for commercial shooting in NSW.

In addition, the size and scale of the kangaroo killing presents welfare issues as kangaroos are not safe across vast areas of the landscape. The vast majority of NSW permits commercial killing of kangaroos and non-commercial killing is carried out in adjacent and overlapping areas. The commercial harvest zones increased by 27,200 km² in 2018 supported by the NSW Government Drought Relief Package⁶³.

⁶³ DPI. Volunteer non-commercial kangaroo shooting. <https://www.dpi.nsw.gov.au/hunting/volunteer-non-commercial-kangaroo-shooting>

Figure 1: Commercial killing zones in New South Wales (source Wilson & Edwards, 2019)



Non- Commercial killing of kangaroos

The non- commercial killing of kangaroos is a major conservation and welfare issue in NSW. Firstly, there is a difficulty in ensuring that the killing is in fact necessary to reduce costs and increase landholder tolerance for kangaroos. Secondly there is no requirement that landowners have to provide evidence documenting damage attributable to kangaroos

A primary reason why kangaroos are killed in such high numbers is due to landholder/grazier intolerance of kangaroos and other native wildlife such as dingoes. The perceived costs of kangaroos in the landscape include the diminishment of the number of introduced livestock numbers that might otherwise be carried, reducing livestock carcass weights and wool production, kangaroo encroachment on paddocks being spelled and damage to fences⁶⁴ and increasing the cost of other types of fencing systems and perception that kangaroos consume pasture intended for livestock In a 2006 report prepared for the Kangaroo Management Advisory Panel by Penny Olsen and Tim Low concluded that:

“There is little convincing evidence of substantial damage by kangaroos to crops, pastoral production or rangelands, except in a few localized areas.” Furthermore, that *“the discontinuation of damage mitigation as grounds for harvesting is in many ways*

⁶⁴ Wilson, G and Edwards, M. 2019. Professional kangaroo population control leads to better animal welfare, conservation outcomes and avoids waste. Zoologist volume 40



*a more honest approach to kangaroo management given that damage is difficult to monitor, predict and even to prove empirically to be an issue”.*⁶⁵

A 2016 study concluded that kangaroos had no negative effect on native pasture cover or species richness and that pasture degradation is perpetuated by rabbits.⁶⁶ Yet despite this evidence, in 2018 the NSW government announced changes to non-commercial kangaroo management. The changes included⁶⁷:

- The use of physical tags – which is no longer required.
- More than two shooters may operate under a landholder licence at any time.
- Shooters no longer need to be listed on the landholder’s licence at the time of application and only need to be listed on landholder licence returns after culling operations.
- Carcasses may be removed for personal use (but not sold, swapped or traded).

We are also concerned about Sporting Shooters Association of Australia Inc (SSAA) Farmer Assist program. The program was developed to provide farmers and landholders with a simple way of finding qualified SSAA members to undertake shooting as part of pest control and/or conservation activities. The SSAA Farmer Assist program enables landholders to find licensed, accredited and insured volunteer shooters to assist with kangaroo control.⁶⁸

Despite the recent severe drought across most of Australia from 2017- 2019, which affected the ability of kangaroos to survive they also faced a massive increase in non-commercial shooting. Regulators cannot monitor the number of kangaroos killed by amateurs, nor ensure high standards of the dispatch of animals⁶⁹. This policy has resulted in the welfare of kangaroos decreasing.

⁶⁵ Olsen, P & Low, T. 2006. Situation Analysis Report Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological & Economic Impact & Effect of Culling

⁶⁶ Mutze et al. (2016). Estimating density-dependent impacts of European rabbits on Australian tree and shrub populations. Australian Journal of Botany

⁶⁷ DPI. Volunteer non-commercial kangaroo shooting. <https://www.dpi.nsw.gov.au/hunting/volunteer-non-commercial-kangaroo-shooting>

⁶⁸ <https://farmerassist.com.au/pest-control/kangaroo-control/>

⁶⁹ Wilson, G and Edwards, M. 2019. Professional kangaroo population control leads to better animal welfare, conservation outcomes and avoids waste. Zoologist volume 40



Conclusion and recommendations

The shooting of kangaroos or any wildlife is only a short term albeit poor solution to dealing with wildlife that are perceived to be problematic. What is required is a greater understanding of the behaviour and ecology of kangaroos and the use of that information to find strategies to coexist with kangaroos in agricultural landscapes.

Two issues stand out, firstly the perpetual pressure to provide kangaroos for commercial trade creates ongoing animal welfare concerns for kangaroos in an unregulated industry. Secondly, the non-commercial and mitigation shooting creates a far more chaotic approach based on assumption that kangaroos are pests. As shown in this section non-commercial shooting in NSW escalated from 2018 onwards with the relaxation of legislation, resulting with worse welfare outcomes for kangaroos.

The National Codes do not mean shooters are exempt from the NSW POCTA Act and it appears that the existence of the National Codes are simply a marketing tool intended to dispel any uneasiness about the cruel treatment of macropods targeted by the commercial and non commercial killing.

Despite the legislation to protect kangaroos from cruelty, kangaroos have virtually no protection in their own country and we see the lack of persecutions, not due to compliance with the POCTA Act and National Code of Practices for the Humane Shooting of Kangaroos (herein the Codes) but due to a lack of enforcement of the NSW legislation.

Enforcement agencies under the POCTA Act, being RSPCA NSW, the Animal Welfare League, and NSW Police, need to monitor commercial and non-commercial kangaroo shooting at the killing points, to ensure compliance with NSW animal welfare laws.

The complete absence of enforcement activity and consequential failure to detect offences needs to be rectified.



The importance of kangaroos to Australian culture and society

This section relates to item(h) Current and alternative measures to provide an incentive for and accelerate public and private conservation of kangaroos and other macropods.

A complex history has culminated into a society which presents the kangaroo as a national icon and treasure to an international audience, while also supporting an industry that kills the largest number of terrestrial mammals on the planet. The kangaroo is one of the most recognised symbols in the world and Australians proudly hold up its image to represent all that is special to their culture. However, there is a growing awareness internationally of Australians' cruel treatment of its wildlife. International tourists come here expecting to see kangaroos and are disappointed when they are unable to see a live kangaroo while driving through the country.

Kangaroos are of cultural, social and spiritual significance to Aboriginal people, who hold traditional knowledge about kangaroos, other native animals and the Australian landscape. Everything that sets Australia apart from the rest of the world and makes it unique is disappearing – Indigenous people marginalised and their culture devalued; national parks and world heritage sites lost in the recent bushfires, native species actively persecuted.

The killing of sentient wildlife for commercial purposes is ethically unacceptable. The sanctioned killing of kangaroos for commercial and non-commercial reasons creates a sense of dis-ease amongst many Australians. The support of the NSW government in permitting kangaroo killing creates social norms within communities that it somehow acceptable to engage in the widespread killing of kangaroos. The political and institutional environment influences individuals' actions as they relate to social norms and perceptions of what is desirable and achievable based on social pressure, in the form of informal rejection or reward⁷⁰. Social norms relating to kangaroo persecution, in the form of commercial and non-commercial shooting is reinforced by government programs that rely on lethal control. This situation leads to killing becoming institutionalised, meaning it is normalised through policy and social discourse⁷¹. The shooting kangaroos is a blight on NSW. Visak and Garner argue that pain that harms the animal should matter to us, including pain in a prolonged death⁷². The kangaroo industry is lacking in rigorous ethical guidelines to ensure there is a minimisation of harm.

⁷⁰ Stern, M. 2018. *Social Science Theory for Environmental Sustainability: A Practical Guide*. Oxford University Press.

⁷¹ Philip, J. 2018. *The Institutionalisation of Poison: A historical review of vertebrate pest control in Australia, 1814 to 2018*. *Australian Zoologist*.

⁷² Visak, T. and Garner, R and 2016. *The Ethics of Killing Animals*. Oxford University Press.



The commercial kangaroo industry creates a profit for the few at the expense of the Australian people, the environment and kangaroos. This is a form of elite capture - benefitting small, vested interests at the expense of many. Private harvesting companies and lax regulation has meant animal utilisation as a means to fuel economic growth that exploits animals and workers to drive a higher profit, viewing land and animals as resources. The role of private companies in the commercial kangaroo industry has the potential to be seriously morally and ethically damaging *“largely because corporate interests benefit directly from massive animal exploitation”*.⁷³

The value that kangaroos provide as a tourism drawcard is grossly overlooked and the commercial kangaroo industry provides meagre employment and value to the economy. If NSW had progressive environmental policies to regenerate our unique landscapes and let wildlife flourish, what an irresistible wildlife tourist destination we could be.

Tourism was one of the world's largest and fastest growing economic sectors. According to research conducted by Tourism Australia over 70% of overseas visitors want to experience Australia's unique wildlife and environmental beauty⁷⁴. Furthermore, international travellers value natural beauty, a pristine environment, safety and security, friendly and welcoming people.⁷⁵ Tourism Australia's most recent campaign "There's nothing like Australia", with Chris Hemsworth created an international reach and exposure. Since his appointment as Australia's global ambassador, Chris generated more than 4,500 media articles globally, with an earned advertising value of close to \$156 million. This campaign, highlights Australia's unique nature and wildlife because that is what our international visitors are looking for when choosing Australia. The only attempt to actively promote kangaroo tourism is by roo tourism <http://www.rootourism.com.au>. Yet we are systematically eliminating our wildlife by exploiting it for commercial purposes.

Before the pandemic in 2019 **9.4 million international visitors** came to Australia, creating an industry that **employed 666,000 people** (5.2% of total employment) as of 2019. This industry contributed a total of AUD **\$60.8 Billion** (3.1% of GDP) in 2019.⁷⁶

In comparison, the contribution of the Kangaroo Industry to the Australian economy is marginal. In 2012, the industry worth was estimated at 89 million AUD (72 million EU) and 880 full time jobs⁷⁷. Since then exports have dropped and so would have the number of full-time jobs.

⁷³ Sanbonmatsu, J, ed. 2011. Critical Theory and Animal Liberation. Lanham, MD: Rowman and Littlefield p185

⁷⁴ Tourism Australia. 2017. Annual Report

⁷⁵ Tourism Australia. 2017. Annual Report

⁷⁶ Budget Direct.2020. Australian Tourism Statistics. <https://www.budgetdirect.com.au/travel-insurance/research/tourism-statistics.html>



We believe Australia kangaroo tourism experiences are undervalued, under promoted and are an under-utilised economic benefit to the Australian economy. When the commercial kangaroo industry kills a kangaroo it is worth \$30. That same kangaroo 'alive' will be worth so much more over its lifetime and could be seen by thousands of tourists bringing in much needed income and jobs.

A comparative study of humpback whales in Hervey Bay, QLD calculated what a Humpback whale was worth to the economy of that town 'alive' as opposed to what it would be worth dead. Hervey Bay is the oldest whale watching location in Australia, with its well-established tourism industry and recovering whale population, estimates the present value of a humpback whale to the Hervey Bay economy is estimated to be \$97,000.⁷⁸ The global whale watch industry is worth over \$2 billion dollars annually⁷⁹. In 2008, 13 million people participated in whale watching in 119 countries and territories, generating total expenditure of \$2.1 billion⁸⁰.



⁷⁷ Boronyak-Vasco, L. and N. Perry (2015). "Using tradable permits to improve efficiency, equity and animal protection in the commercial kangaroo harvest." *Ecological Economics* **114**: 159–167.

⁷⁸ Knowles, T., Campbell, R., 2011. What's a whale worth? Valuing whales for National Whale Day, a report for the International Fund for Animal Welfare (IFAW), prepared by Economists at Large, Melbourne, Australia.

⁷⁹ O'Connor, S., Campbell, R., Cortez, H., & Knowles, T., 2009, Whale Watching Worldwide: tourism numbers, expenditures and expanding economic benefits, a special report from the International Fund for Animal Welfare, Yarmouth MA, USA, prepared by Economists at Large.

⁸⁰ O'Connor, S., Campbell, R., Cortez, H., & Knowles, T., 2009, Whale Watching Worldwide: tourism numbers, expenditures and expanding economic benefits, a special report from the International Fund for Animal Welfare, Yarmouth MA, USA, prepared by Economists at Large



Australia: Whaling Vs Whale Watching Vs Kangaroos

Australia was a whaling nation until 1978 when the then Prime Minister Malcolm Fraser announced "An inquiry into whales and whaling." In announcing the Royal Commission the Prime Minister said "many thousands of Australians – and men, women and children throughout the world - have long felt deep concern about the activities of whalers".⁸¹

The inquiry was chaired by Sir. Sydney Frost and was an historic event. It called on expert testimony from Australia and overseas, It received over 200 submissions. In handing down the recommendations of the Royal Commission Sir Frost said ' The inquiry's central conclusion is that Australia's whaling should end, and that, internationally, Australia should pursue a policy of opposition to whaling.'⁸²

The recommendations went further to say that Australia should ban the import of whale products. This change from being a whaling country to a country that protects whales not only in Australia but internationally is an extraordinary turn around in policy. It shows that Australia is capable of showing compassion to wildlife when the information is presented through an inquiry. The cultural change in Australia was profound.

Given this clear public sentiment reform of kangaroo management in NSW is warranted

This is evident in relation to the revision of the National Code of Practice the authors Sharp and McLeod received nearly 5,000 written submissions were received as part of the code review. The majority of submissions from the general public expressed their opposition to kangaroo killing (or any form of lethal management) on the grounds that killing of kangaroos and wallabies and their young can never be made humane⁸³. They argued that no code of practice could ever address issues of inherent cruelty associated with harvesting. Many were also disturbed that our national emblem and icon is exploited for commercial reasons and demand that they instead be protected As part of the public consultation two surveys were conducted:

a. A web-based qualitative questionnaire (containing mostly open-ended questions open to the public). 11,203 initially opened the survey and completed some questions, yet only 5,167 completed the full survey. Sample size N= 5,167.

b. Survey a large representative sample of the Australian public using a web-based quantitative questionnaire (containing mostly close-ended questions). Sample size N= 1,002 participants (p28) outlines the demographic profile of respondents.

In the open survey respondents were overwhelmingly opposed to the kangaroo industry with (63%) strongly opposed, and 16% opposed. In the Representative

⁸¹ REPORT FROM THE ROYAL COMMISSION. *Whales and Whaling Volume 1 Report of the independent inquiry conducted by The Hon. Sydney Frost*

⁸² REPORT FROM THE ROYAL COMMISSION. *Whales and Whaling Volume 1 Report of the independent inquiry conducted by The Hon. Sydney Frost*

⁸³ Sharp and McLeod. 2020. The development of a new code of practice for the commercial harvesting of kangaroos



survey 31% of respondents were neutral while 19% were supportive and a further 19% very supportive of the industry⁸⁴.

Conclusion and Recommendations

It is time to ascertain what a kangaroo is worth 'alive' to the Australian economy. If Australia had progressive environmental policies to regenerate our unique landscapes and let wildlife flourish, what an irresistible wildlife tourist destination we could be.

In closing, KANGAROOS ALIVE makes these additional recommendations:

Counting Kangaroos

If the Department are so certain that their population estimates are accurate then we recommend that they be opened up for independent verification. This includes greater transparency of how raw counts are calculated to determine population estimates, the minimum density thresholds in each commercial zone for each commercially harvested species, and what levels they trigger a management intervention such as a reduction or suspension in the quota.

Kangaroos Alive believes that there needs to be a moratorium on commercial shooting of kangaroos in NSW. Until an accurate and transparent count can be conducted in NSW all commercial and non-commercial shooting should be suspended. After these factors are considered if kangaroo killing continues to be permitted, the 'sustainable' quota, should be significantly reduced to be more in line with a range of community values.

Compliance with NSW POCTA Act and the National Codes of Practice

It appears that much of the compliance work of the NSW KMP is desk based. This is insufficient to determine breaches to the NSW law and the National Codes of Practice. We recommend the setting up of an independent hot line so that the general public and shooters can anonymously provide information about breaches. That is investigated by the police, KMP or RSPCA.

We recommend the creation of an Independent Office of Animal Welfare (OAW)

This will eliminate the conflict of interest in the Department between Agriculture and Conservation, in which a commercial kill of kangaroos is actively supported and advocated by the dept. The OAW will provide much needed oversight and accountability. We also recommend that the OAW be sufficiently funded to carry out this new important role.

Non-commercial shooting

Now that NSW is not in drought there must be an urgent reinstatement of the previously provisions around non-commercial shooting must be effective immediately. This includes requirement that:

⁸⁴ Sharp and McLeod. 2020. The development of a new code of practice for the commercial harvesting of kangaroos



- Physical tags are required to be affixed to all carcasses of kangaroos shot for non-commercial purposes,
- Only one shooter may operate under a landholder licence at any time, and
- Shooters need to be listed on the landholder's licence at the time of application and must be listed on landholder licence returns after killing operations.

New Research

We recommend that new Independent research be undertaken to determine the value of kangaroos to tourism. Furthermore research to quantify the benefits of kangaroos in the landscape as ecosystem engineers spreading the seeds of native grasses, consuming plant bio-mass as a bushfire mitigation measure and the value of their poo in fertilising the landscape.

Thank you for the opportunity to submit,

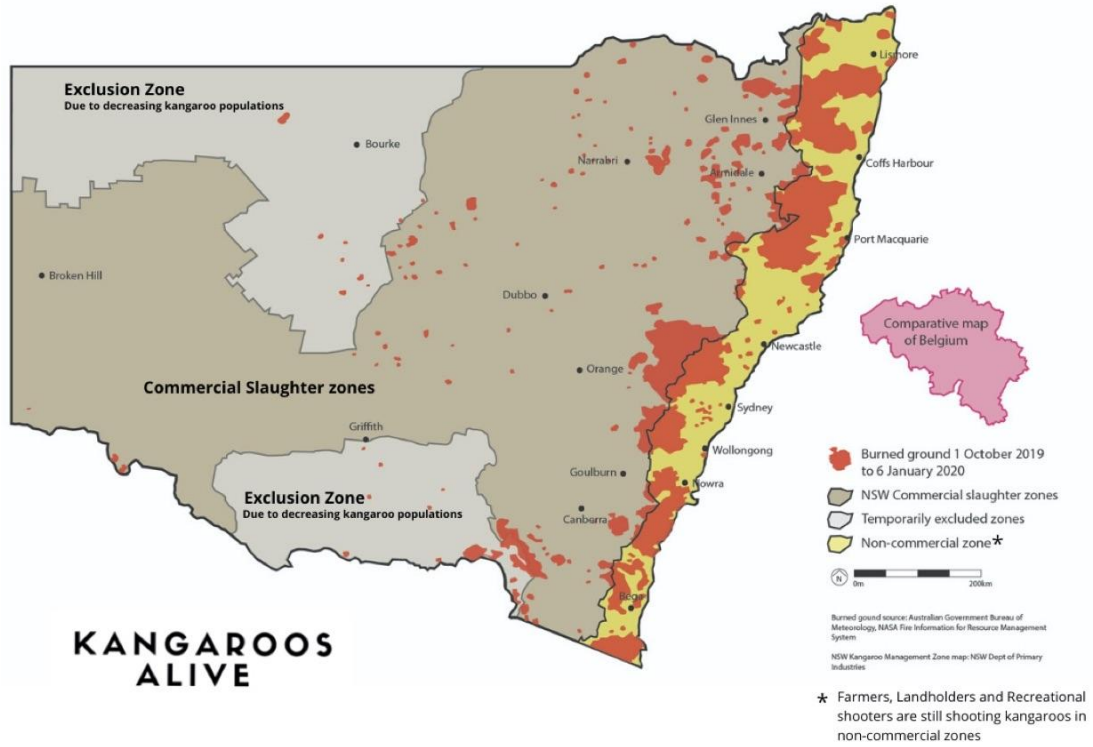
This submission was prepared by
Louise Boronyak, Phd Candidate, Mick McIntyre and Kate Clere, with assistance
from Greg Keightley and Diane Smith

Kind regards

Mick McIntyre
Executive Director
Kangaroos Alive

ANNEX A: KANGAROOS ALIVE'S MAP

Commercial Kangaroo killing in the fire zones, NSW



**KANGAROOS
ALIVE**