



# **Critique of ACT government kangaroo killing program and the review of the ACT Eastern Grey Kangaroo Controlled Native Species Management Plan 2017, by Dr Sarah Legge**

## **Purpose**

On behalf of *Save Canberra's Kangaroos* (SCK), this document critiques the scientific and ethical validity of the ACT government's kangaroo killing program and the statutory review undertaken by Dr Sarah Legge of the *ACT's Eastern Grey Kangaroo Controlled Native Species Management Plan 2017*. We have prepared it as a heads-up, for the benefit of kangaroo supporters and advocates who may wish to comment on the review report, and also to provide them with more general information about the background to the slaughter, including the alleged science behind it; and why that science is fundamentally flawed.

## **Independence**

It is important to note that we do not see any way this review could possibly be described as independent, despite the government's assertion that it was, and irrespective of the word 'independent' appearing in the title of the review paper. The reviewer was selected by the Directorate, apparently without any input from stakeholders, at least certainly not from the ecologists, sociologists, other scientists, and the animal welfare and wildlife experts and organisations who have, over 15 years, critiqued and rejected the government's 'science'.

Several members of the community opposing the kangaroo slaughter met with Dr Legge and found her forthright and interested in our views. However, we note that she would not have been engaged if SCK, or its members, or the other organisations who oppose the slaughter had been consulted about an appropriate person to undertake an independent review. Dr Legge is identified as one of 'our people' in the website of the Invasive Species Council, an organisation whose main purpose is to promote 'control' of allegedly 'invasive' animals and plants. In most cases 'control' means killing. In our view, killing of animals is a default control method in conventional and now outdated approaches to 'managing' wild animals whose numbers are not regarded as threatened.

In our view, neither the Fenner School at the ANU nor the Invasive Species Council should be considered as independent for the purpose of any review of the ACT government's kangaroo killing program, because much of their work supports this default position of 'managing' sentient beings. Even peer reviews of research provide no assurance of independent (and therefore valid) science because peer reviewers (in Australia) are usually imbued with the same (in our view) misguided killing culture, and dependent on the same limited range of partisan funding sources as those writing the papers they are reviewing. In our view Dr Legge's report adopts this conventional approach.



The Environment, Planning and Sustainable Development Directorate (the Directorate) which appointed Dr Legge to undertake this review, has a history of dismissing or ignoring the advice of scientists it has engaged to study kangaroo issues on its behalf if they fail to agree with the Directorate's conclusions. The chapter entitled *Burn the Heretic* in Dr Maria Taylor's book, *Injustice!*<sup>1</sup>, examines such an incident in detail. Similarly, CSIRO Plant Industries<sup>2</sup> was engaged by the ACT government (the ACT government's logo appears on the CSIRO report) to examine the Directorate's own data on the ecological condition of vegetation in lowland grassy ecosystems of the northern ACT relative to kangaroo densities (densities means numbers per hectare). The study concludes that these data show no indication that kangaroos are having an adverse impact on the biodiversity of the reserve ecosystems. No mention of this study is made in the bibliography of the Kangaroo Management Plan (KMP) 2017.

In our view, this history would make undertaking a review of the ACT government's killing program an unattractive prospect for anyone who is independent enough to accept the possibility that they might draw conclusions that do not suit the government.

This lack of independence manifests in the review itself which appears to accept without question and without any new evidence all the 'research' and 'evidence' that informed the KMPs in 2010 and 2017. A great many post-2017 papers are referenced and included in the review report's extensive bibliography, but none of them adds anything that makes the government's 'science' any more convincing than it was in 2017.

Like many of the papers referenced in the bibliographies of the 2010 and 2017 KMPs, numerous papers referenced in the review provide useful, interesting and well-researched information about kangaroos, ecosystems, other native species, and other related matters. However, the only papers that argue or support the government's case that kangaroos need to be managed (ie killed) are by: the ACT Directorate itself; or authors who are or have been Directorate employees; or other authors who are in some way linked to the ACT government; or authors who are well established as professionally and/or reputationally committed to the culture of lethal animal 'management'.

For example, only eight papers are cited in the 2017 KMP as providing evidence that kangaroos are having a deleterious impact on other native plants or animals. These eight papers were well-critiqued by Dr David Brooks<sup>3</sup> in 2016. None of the authors were found to be independent of ACT government influence, and/or association with organisations well-known for supporting killing animals for 'management' reasons.

Notably absent from Dr Legge's review are some very significant works on the subject of what is happening to kangaroos across Australia, such as: Dr Dan Ramp's works on *Compassionate Conservation*<sup>4</sup>; *Kangaroos and Risk*, by Ray Mjadwesch 2011<sup>5</sup>, which exposes the vulnerability of kangaroo species especially in NSW; and *Injustice*, by Dr Maria Taylor, 2021 (mentioned above), especially the chapters entitled *Enter Australian Applied Ecology* and *Burn the Heretic* which shine a particularly damning spotlight on the ACT.



## Background to this issue

In Australia, as discussed in *Injustice*, a killing culture which first arrived with white settlement destroyed vast tracts of Australia's ecosystems and native wildlife. That culture still pervades the industries that fund most of the 'research' that claims to justify the animal 'management' programs that claim to be promoting conservation

The entire Canberra Nature Park (CNP) has been degraded and will continue to be degraded by ongoing habitat loss. The primary causes of this degradation are:

- destruction and fragmentation of native habitat by the building of Canberra itself, and ongoing encroaching development into rural areas, and right up to the fences of the reserves of the CNP, including multiple bisections of the Park by roads and high speed traffic;
- the ecological legacy of a century of sheep and cattle grazing (trampling, rootstock grazing and ripping, damming of creeks to water livestock etc) on the land that is now the CNP, along with ongoing grazing of cattle on the reserves in misguided attempts to manage the biomass overgrowth caused by the removal of too many kangaroos;
- the overgrowth of biomass itself (ie weeds and high grass) since the slaughter has reduced kangaroo numbers too low for the remaining kangaroos to be able to manage it; and
- anthropogenic climate change (long term changes in general weather conditions, changing tolerability of the climate for the plants and animals that live here, and more frequent, sustained and severe extreme weather events).

These causes of the degradation suffered by the CNP, are well-established. Despite numerous requests for baseline data, the ACT government has failed to produce any data compiled before it commenced its annual slaughter of kangaroos, on any aspect of the status of any species living there. Nor had the government any apparent scientific basis, prior to slaughtering them, for asserting that kangaroo grazing was in any way aggravating the degradation.

Despite this apparent total absence of baseline data, the government has chosen to make kangaroos the scapegoats for this ongoing degradation, claiming they are 'overabundant'; that they are eating too much grass and thus depriving other native animals of places to live and enough to eat. On this basis the government characterises its slaughter program as a 'conservation cull'. Essentially, the government is claiming that the natural densities reached by kangaroos on ACT reserves are permanently unsustainable, if they are left 'unmanaged'.

The government has killed over 40,000 kangaroos across the 11,400 hectares of the CNP, several thousand of them every year, since 2008. Pouch joeys are bludgeoned to death or decapitated. At-foot young are orphaned left to die of cold, thirst, hunger and myopathy (a painful and deadly form of stress to which kangaroos are especially susceptible), car strike and fox predation.



The government has attempted to justify this annual slaughter under the two KMPs, one in 2010 and another in 2017. The 2017 KMP was drafted and implemented as a controlled native species management plan after the Eastern Grey Kangaroo was declared to be a controlled native species under Chapter 7 of the *Nature Conservation Act 2014* (ACT) (NCA). Once the controlled native species management plan for the Eastern Grey Kangaroo came into force, certain persons are required to implement it (eg the Conservator of Flora and Fauna or the custodian of the land: s167 NCA). No matter how thoroughly the government's claims about kangaroo impacts are disproven, kangaroos must now be 'managed' as a matter of law. This has insulated the killing program against administrative appeal.

Even the desktop calculator which determines the number of kangaroos to be killed has been sanctified under legislation [6](#).

This "kill" calculator is based primarily on three factors:

- the government's estimates of kangaroo numbers, which are based mainly on walked-line transect sampling, and refuted by SCK's own, direct, actual, citizen science kangaroo counts;
- a desired 'target' number of kangaroos to be left after each year's killing, which is based (in the words of the ACT government's own ecologist), on a 'guess', and 'wrong' [7](#);
- a maximum population growth rate of up to 30 per cent which, in view of breeding limitations and mortality rates, appears to be biologically impossible for kangaroos [8](#).

For obvious reasons, this 'kill' calculator program has been dubbed *Robokill*.

In all the masses of source documents cited in the Kangaroo Management Plans, or other publications referenced or produced by the ACT government in an attempt to justify this massacre, there has never been any evidence or plausible scientific theory to support the assertion that the biodiversity of the CNP, or any of its reserves, has ever been degraded by any scale of kangaroo grazing. Alleged evidence for these assertions seems to consist entirely of correlations between either:

- kangaroo numbers *vis-à-vis* biomass (ie quantity of grass); or
- kangaroo numbers *vis-à-vis* numbers of a single or a few cohabitant species.

The flaws in using these correlations as indicators are discussed later in this paper.

Even if the assertion that kangaroo grazing is a problem were true in any degree, killing thousands of them so cruelly would be ethically unacceptable. The only solution to the real problem of the degradation of the reserve ecosystems is for the government to:

- put the brakes on development that destroys ever more wildlife habitat;
- resume and restore more land currently used for grazing livestock as reserved wildlife habitat; and



- provide proper wildlife corridors that would enable wild animals of all species (including humans) to move around the CNP and other wildlife habitat, without crossing numerous deadly roads.

The 2017 KMP legislation requires periodic reviews of the controlled native species management plan at least once every five years. As far as we know, Dr Legge's is the first such review to be conducted since the plan came into effect in May 2017.

## **The role of kangaroos in the ecosystem**

The ecological role of kangaroos is to eat grass and move around in a manner that maximises habitat opportunities for other plants and animals. Because of the way their teeth are arranged - incisors for biting and molars for chewing <sup>9</sup> - they do not gnaw down to bare soil, like sheep, or rip plants out by the roots, like cattle. Consequently, they maintain all plant species at heights that enable strong root systems to survive, holding the soil in place.

In normal conditions, kangaroo grazing prevents plants from getting tall and thick enough to starve shorter plants by denying them sunlight. Only when drought has wiped out all the usual groundcover would kangaroos be forced to try to gnaw stubble; and, by then, any other groundcover dependent species will most likely have already disappeared.

The feet of kangaroos and their mode of locomotion prevent them from trampling plants and damaging soil cover. They are able to cover vast distances very rapidly with unusual energy-efficiency <sup>9</sup> and water-efficiency <sup>10</sup>. Thus, they can easily expand their range as far as necessary to feed themselves, reducing their grazing pressure in any one area. Their fur and faeces carry seeds far and wide; faeces also carry nutrients. Their front toes provide small indentations in the soil, where seeds can take root.

Kangaroo feeding preferences allow plants to achieve a wide range of species and different heights. This vegetative heterogeneity maximises animal diversity. The particular mix of this heterogenous vegetation will vary with the environmental conditions. The populations of animal species (including some species that are now considered threatened) will also change with the variable conditions. There will be times when some plant species are doing better than others, times when some animal species are doing better than others. Sometimes, there will not be quite enough animals to manage the plants, and sometimes there will not be quite enough plants to feed the animals. But, as all species adapt their populations to ever-changing conditions, these variations, as proven over millions of years, benefit all species in the long run.

Dr Legge agrees that a diverse vegetative landscape maximises habitat for other plants and animals, that kangaroo grazing is essential for a healthy grassy ecosystem, and that 'thick grass is not a good thing' <sup>11</sup>. For some reason, she does not appear to accept that vastly reducing kangaroo numbers vastly increases biomass (ie the grass becomes very thick and high), ultimately at the expense of biodiversity.



## The crux of the perceived problem

Dr Legge's review includes one subsection which reveals the only plausible scenario that (in our view) has ever been raised by the ACT government that supports the notion that a native animal species might need to be managed in the ACT. But the species needing to be managed is not kangaroos, and that management does not involve killing anyone.

The review asserts:

*When kangaroo grazing outstrips vegetative productivity (which is most likely in dry years), the grassy layer is grazed to very low levels, increasing the risk that remnant patches will experience soil degradation, erosion, and increasing the risk that populations of some species (including threatened species) could be extirpated. Given these risks of an ongoing ratchet of decline, the commitment of the 2017 Plan to manage kangaroo population size and thus avoid further deterioration is supported by the evidence available.*

In the above quote, Dr Legge is arguing that, especially in drought conditions (we would say exclusively in drought conditions, since no kangaroos would graze that low, otherwise), kangaroos might be forced to eat into the low groundcover which is the habitat of some small, isolated, remnant population of a threatened species.

The remnant threatened population is already small, and it will stay small until it disappears altogether because of the limited area of its habitat and because of its isolation from other populations of its own species, from which it might otherwise recruit new members. Consequently, this loss of habitat due to the drought, and (possibly) accelerated by kangaroos who are forced to graze lower than usual by the drought, could be the final straw that wipes out the population.

Dr Legge sees this scenario as an argument for killing kangaroos. In fact, in our view, it seems to be the only argument for killing kangaroos of which she herself is convinced.

We certainly do not dispute Dr Legge's premise that endangered ecological communities and species are 'distributed as remnant fragments around Canberra'. These are species or communities whose habitat was substantially destroyed back when the reserves were farmland and being used as livestock paddocks, where only small isolated fragments of that habitat and its resident species managed to survive.

Now, with relatively few members remaining, unable to recruit more members (including mates) because of their isolation from similar habitat, and unable to disperse outside their fragment of habitat because of their specialised needs, the remnant population is vulnerable to the slightest new or increased pressure. Further loss of habitat due to die-back of vegetation during a drought, or over the course of several droughts, combined with forced grazing of their habitat by kangaroos (due entirely to the same drought), would be a serious pressure.



Of course, this same species that is now an isolated remnant has been sharing its habitat with kangaroos during droughts for millions of years without being harmed by any level of grazing. Moreover, it has certainly benefitted from the keystone services kangaroos have provided, especially when a drought breaks. The kangaroos carry seeds and nutrients in their fur and faeces, and would have carried them far and wide during the drought, in their search for better grass. These re-seed the soil laid bare by the drought. The roots of the plants that might have been grazed down to stubble (but not gnawed down to bare ground or uprooted as they would have been if they had been grazed by sheep or cattle) have held much of the soil together and begin to come back to life. When the grass grows again, it will be the kangaroos whose grazing keeps it high, and low, and varied enough to protect the ground cover and all the creatures that live in the vegetation.

Clearly the problem species in this scenario is not the kangaroos but the remnant species which, with or without droughts and certainly with or without any drought-driven change in kangaroos grazing behaviour, is far too vulnerable to have any hope of surviving much longer in its fragment of habitat. If nothing else, loss of genetic diversity will be the end of it.

In this scenario, the only intelligent and humane answer is to translocate the population of the remnant species, either to some other patch of similar habitat that includes the same species but is capable of sustaining a few more individuals, or to an artificial habitat in a sanctuary or zoo where the individuals can live out their lives in safety. Ecologically speaking, taking the threatened population out of the ecosystem will have negligible environmental impacts. By the time a species is listed as threatened, its numbers are already too low for it to be able to continue to provide anything like the ecological services it once provided to Australian ecosystems.

If it is considered desirable to preserve the species itself for its own sake, the translocated individuals could be encouraged to breed in these 'sheltered workshop' conditions. However, unless the brakes are put on Canberra's rampant development, and further global climatic change is somehow averted, it is unlikely their descendants could ever be returned to the wild. In fact, because droughts are increasing in frequency, duration and severity due to anthropogenic climate change, it is a matter of urgency that we create safe havens to which remnant populations of drought threatened species can be translocated.

Translocation of such populations is, apparently, quite feasible. In 2015-16, the ACT government relocated an isolated population of striped legless lizards to the Scottsdale property 75 kms away from the ACT because the area in which they were found in Canberra was scheduled for development <sup>12</sup>.

In an earlier example, it was reported quite recently that, after the kangaroos slaughter at the Belconnen Naval Transmission Station (BNTS) in 2008 and before the building of the suburb of Lawson, a remnant population of an endangered species was translocated to Tidbinbilla ahead of the development <sup>13</sup>.



The irony here is that the 500 kangaroos, who were trapped within the fully fenced site of the BNTS , were not relocated, even though a detailed proposal for soft translocation to welcoming properties in NSW was prepared by wildlife experts from Wildcare Queanbeyan, who routinely successfully relocate rescued kangaroos<sup>14</sup>.

Instead, the kangaroos were herded and crowded, one random group at a time (often separating mothers from joeys), into temporary corrals where they were darted with anaesthetic, dragged behind a hessian screen, and slaughtered by lethal injection. (The herding and trapping were, in fact, illegal because the Code of Practice in place at the time<sup>15</sup> identified herding and trapping kangaroos as unacceptable on welfare grounds. Even though the Code was not, itself, enforceable, it identified herding and trapping as cruel to kangaroos and therefore provided no defence for this cruelty under the Animal Welfare Act.)

All this took place in plain sight of dozens of distressed members of the public and the media, including the international media who watched it from a hilltop just outside the fence.

And now, instead of a few one-off projects to relocate a few individuals comprising remnant populations of a threatened species, thousands of kangaroos are being massacred every year. This seems to sum up the entire philosophy and intent of the ACT government: kangaroos are not a keystone species nor a national icon, nor are they native animals or sentient beings anymore – they are scapegoats to be punished for no crime except their very existence at every opportunity.

## **The government’s arguments and “evidence”**

### **Meaningful indicators**

An indicator, by definition, is something that can be measured to shed light on an aspect of condition or pressure or performance. Biodiversity is the only meaningful indicator of ecological condition. Biodiversity means the number of different species and the number of individuals and variations within each species.

Biodiversity is an indicator because it is, by definition, something that can be measured: by counting all observable species and all observable individuals within each species in a given space.

### **Kangaroo densities**

A key indicator the ACT government uses in determining how many kangaroos to kill is the number of kangaroos per hectare they estimate to be present across the CNP. The Directorate has always claimed kangaroos in the ACT are at higher densities than elsewhere. The review supports this assertion, and appears to regard this as indicative that kangaroos are exerting greater ‘grazing pressure’ on ecosystems here than elsewhere.





An apparently higher than normal density of kangaroos in Canberra would not be surprising, not because it actually is higher but because, in addition to the CNP, Canberra provides additional high quality grazing on numerous farms, suburban parks, domestic front and back yards, golf courses, other open suburban space; and the CNP itself adjoins grasslands and parklands of rural NSW at numerous locations.

Most of this bonus grassland is not included in the estimated total area of the Kangaroo Managements Units (KMUs) used to determine the number of hectares over which the ever-ranging kangaroos move. In other words, the kangaroos are being supported by a much larger feeding area than assumed in the Directorate's calculations.

Notably, the Directorate's estimates of number of kangaroos are also disputed by independent direct counts (see below: *Directorate's population estimates*). If both the Directorate's estimate of kangaroo numbers and its count of hectares against which their density is estimated are wrong, their kangaroo density estimates will be doubly wrong

The relevance of kangaroo densities as an indicator to determine whether they should be killed has never been clear. More kangaroos do, naturally, eat more grass, but you do not get more kangaroos unless they have more grass to eat! Furthermore, more high quality grass means more high quality grass for everyone, not just kangaroos.

There is therefore no logical reason why a higher than usual but entirely natural (ie unmanaged) density of kangaroos, given a higher quantity of grass, should have any more impact on any other aspect of the ecosystem than any other natural density of kangaroos given a commensurate quantity of grass, anywhere else in Australia.

It has been suggested that the ACT kangaroos are at 'high densities' and need to be 'culled' because they have no predators. Even if this were true, there would still be only as many kangaroos as the grass supply can feed. In natural systems, where every animal produces more young in its lifetime than are needed to replace the parents, the only alternative to predation is starvation, mainly of young, all year, every year - unless the species has the capacity (as kangaroos do) to suppress the production of young.

But the government's suggestion that ACT kangaroos are short on predators is not true. Foxes have replaced dingoes as the primary predators of kangaroos in Canberra, and it is the joeys they take<sup>16</sup>. (Eagles are known to take some take some too.) It is to be expected that Canberra would have an unusually high urban fox population precisely because we have the CNP as a continuum winding north, south, east and west throughout the city and its suburbs. Anecdotal evidence of fox sightings in the suburbs supports this expectation.



## Single species as ‘proxy’ indicators

The only basis the Directorate (and Dr Legge) have produced for calling its slaughter of kangaroos a ‘conservation cull’ is drawn from a very small set of (far from demonstrably independent) studies (ie the eight papers by only five authors, mentioned above) which show that, on some reserves, a population of threatened species (eg reptiles or ground-nesting birds) is lower where kangaroos numbers are high, and *vice versa*.

Most of the authors of these studies are honest enough to be equivocal about whether these correlations indicate that kangaroos are causing the reduced population of the threatened species. There are a vast number and variety of pressures, both natural and human, that are constantly affecting populations of wild animal species, and a wide range of other plant and animal species that are participating in the ecosystems of the reserves, and impacting on each other. The correlations noted by the studies, if and where they occur, could far more easily be the result of some other, unconsidered variable, that has nothing to do with kangaroos. Before assuming that a population’s decline has anything to do with kangaroos, these other variables would need to be accounted for, for example:

- further encroachment by development on habitat (measured by number of hectares developed and length of borders of reserves impacted), and further fragmentation (measured by changes in area of fragments and changes in the distance and nature of separation of each fragment from other suitable habitat);
- climate change and weather events over the period being assessed, such as drought, fires (or just smoke from fires), storms (including hail, wind and dust storms), and flooding etc (measured by frequency, severity and duration);
- availability, quality and quantity of environmental water;
- pollution, including water, air, soil, noise and light pollution (the National Pollutant Inventory may shed light on methods for compiling data on some of these);
- number of wildlife road deaths reported (locational data and number of potential reporters likely to have witnessed the same accident would be needed to prevent overcounting);
- area of observable damage to reserves by rangers’ and shooters’ vehicles;
- changes in numbers of all plant and other animal species since the kangaroo killing began, especially changes in number of plant and animal species present in reserves which have become infested with tall grass and weeds (earless dragons, for example, would be further threatened by this vegetative overabundance).

It should also be noted that studies suggesting that earless dragons are negatively impacted by kangaroo grazing are especially suspect, in view of the following:

- the recovery of earless dragons in Queanbeyan Nature Reserve (adjoining the CNP across a disused railway line) where kangaroos have never been ‘culled’<sup>17</sup>; and



- the crash in status of the earless dragon population in the ACT from *endangered* to *critically endangered* <sup>18</sup> which has occurred since the annual kangaroo shooting on CNP began.

This recent further decline in earless dragons is hardly surprising. These animals prefer a habitat of wallaby grass, tussocks and some bare ground <sup>19</sup>. They would not have much hope of survival on reserves that are, as many now are, covered in head high grass and weeds.

More importantly, changes in the size of the population of any single grass-sensitive species (especially an already threatened one, such as earless dragons and legless lizards) cannot rationally be used as a 'proxy' indicator for the broader condition of the environment and its biodiversity. Similarly, the relative size of such a population *vis-à-vis* the size of the local population of kangaroos cannot be used as a proxy indicator of kangaroo impact on the broader condition of the environment and its biodiversity.

Above, we mentioned our acceptance that, under drought conditions, desperate kangaroo grazing might accelerate the already inevitable demise of small, remnant populations of an already threatened species. We noted that the only rational and humane solution to this problem is to translocate the threatened population, not to kill kangaroos.

### **Grass layer biomass**

For a long time, the only other indicator claimed by the ACT government to shed light on the impacts (good or bad) of kangaroos on the ecological condition of the CNP seems to have been 'grass layer biomass' <sup>20</sup>.

Biomass means mass of vegetation, in other words, quantity of grass. It does not mean quality, nor heterogeneity of grass height, nor diversity grass species, and it certainly does not measure the diversity or richness of plants and animals inhabiting various grass layers. All 'grass layer biomass' shows us about kangaroos is that kangaroos eat grass, and more kangaroos eat more grass – and we already knew that!

According to the review, the Directorate's assumptions regarding biomass have improved slightly. On the basis of a theory that, up to a point, more layers of grass mean more niches for animals and other plants to inhabit, the government now uses 'grass layer structure' as its primary indicator for whether there are 'too many kangaroos' who therefore 'need to be' killed. The review defines 'grass layer structure' as: 'dominant grass species, grass height, the percentage that is green, and the percentage cover'. The review explains that these variables 'are combined for use in the calculations for the target kangaroo density' ('target' means how many they want to leave alive after the next slaughter).

Once again, the 'science' is using a surrogate for an indicator (although a slightly less crude one than only biomass) rather than an actual indicator. To measure grass layer condition, the research would need to measure the *diversity* (number of different species) and *richness* (ie numbers per



species) of plant species comprising the grass layers and of animal species living in the various layers of the grass. This would need to be done through extensive sampling throughout the CNP.

This is what makes the CSIRO Plant Industries paper (Vivian and Godfrey, 2014, see above) (which Dr Legge dismisses as based on an inadequate sampling design) far superior to all the Directorate's carefully designed surveys and models of grass layer biomass structure. At least it compares different kangaroo densities against species diversity and richness, rather than against biomass or the attributes of the biomass.

The Directorate's failure to use actual biodiversity, rather than attributes of biomass, as an indicator of the alleged impact of kangaroo grazing on biodiversity is not only wrong. It is dangerously wrong because, as we are seeing in the reserves right now, the removal of way too many kangaroos has caused an overabundance of vegetative biomass that is actively strangling the diversity of the grass itself and the habitat it provides for animals.

### **Directorate's population estimates**

On the basis that certain sampling methods are 'well-established in the scientific literature', Dr Legge accepts the ACT government's population estimates as more accurate than the actual direct counts SCK have undertaken <sup>21</sup>.

However, a sampling method is always just a sampling method. It might work for plants which do not move around, or small animals that live in ground-layer vegetation but it cannot provide accurate estimates with large animals, especially fast-moving, wide-ranging animals like kangaroos who do move, often ranging well outside the KMU where they are counted (including to other reserves and interstate) and who, to further complicate matters, scatter widely and mob up into large groups (not always comprising the same individuals) at different times of day.

Being a well-established method is no defence if it is just plain wrong. Actual counts and observations seem to show that the government's figures are wrong.

It is worth noting that the 2021 NSW Parliamentary *Enquiry into the health and wellbeing of kangaroos and other macropods* revealed that the use of sampling transects (flown transects, in this case, but the principle is the same) found that 'the current methodology used by the Department of Planning, Industry and Environment to produce estimates of New South Wales macropod populations lacks transparency' <sup>22</sup>.

In fact, the population estimates provided in *the Quota Report New South Wales Commercial Kangaroo Harvest Management Plan 2017–2021* shows flaws well beyond a mere 'lack of transparency'. It reports staggering overestimates of population increases, such as an alleged increase, in one zone, over one year, of 109 per cent. This is nearly ten times higher than is biologically possible under normal environmental conditions. There is no corresponding decline in the estimated population in any adjoining zone to suggest the extra kangaroos had moved in from another zone <sup>23</sup>.



## Economic impacts of kangaroos

The review notes the following points:

- Kangaroos do not seriously affect economic viability of rural properties because their numbers are reduced by killing, under licences authorised by the Conservator.
- There are few data on kangaroo numbers and no performance criteria or outcomes set for private landholders for deciding how many to kill. Other than on properties that adjoin KMUs, the involvement of other planning instruments (eg land management agreements) confuses matters.
- Landholders authorised to kill kangaroos must comply with both the Code of Practice and any conditions of authorisation. (The Code of Practice applies to all non-commercial killing of kangaroos in the ACT.)
- Records are kept of numbers authorised to be shot by landholders, and numbers actually shot.
- Details of killing on private land are not shared with the public for privacy reasons.

The lack of articulated outcomes and performance criteria in determining whether kangaroo killing is 'necessary' (from a landholder's economic point of view) on commercial rural land, especially in view of the huge numbers killed or authorised to be killed, reveals that this is an issue worthy of its own independent review.

The review does not address the issue of privately managed public land such as government horse paddocks. In fact, details of killing under private licences are not shared even when the killing takes place on public land.

According to several anecdotal reports, keeping the public in the dark about shooting on this privately managed public land has put human lives at risk. For example, unnotified kangaroo shooting took place on the government's Rose Cottage Horse Paddocks in 2015<sup>24</sup>, while numerous members of the public were present on the paddocks, including dog walkers, teenagers meeting up with friends, and protestors lawfully there to observe the shooting which they had expected to take place on the adjacent Isaacs Ridge Nature Reserve (not the horse paddocks).

## Social impacts on and of kangaroos

This section of the review includes as 'social impacts' relating to kangaroos: motor vehicle collisions (it notes that the government killing program is explicitly not intended to reduce the number killed by cars); hostile interactions between humans and kangaroos; use of carcasses; impacts on humans who are distressed by the killing; and animal welfare issues.

Dr Legge advocates use of a 'One Welfare' concept relating to social impacts, including animal welfare. This is a worrying notion. After 10,000 years of history, we know too well what happens to animal welfare when it becomes a subset of human priorities, especially economic priorities.



## **Vehicle collisions**

The review claims that data on kangaroo collisions with motor vehicles suggest between 2600 (based on ranger callouts to collisions) and 5800 (based on public survey results) collisions annually at a cost of \$2.5 to 8 million. We find this figure highly implausible. AAMI reported 21,000 collisions with animals (all animals, not just kangaroos) nationwide in 2023. That is the reported count from all the tens of thousands of kilometres of roads across the country, including all the roads of rural and outback Australia <sup>25</sup>. What are the chances that ACT drivers, hitting only kangaroos, would account for over a quarter of the national figure on collisions with all animals? We think it likely a significantly inflated figure is the result of multiple reporting of the same dead kangaroo on the roadside, or else something has gone amiss with the assumptions or the arithmetic.

The Review also discusses hotspots for kangaroo collisions and other aspects of predictability about where and when collisions are likely to occur.

Here, at least, the review supports the often repeated calls from animal and environmental advocates for lower speed limits and for vegetated overpasses and underpasses to enable wild animals to safely cross roads. To these, SCK would wish to add lower speed limits on any road bordering a reserve, and speed cameras or other traffic calming devices to enforce lower speed limits. If overpasses and underpasses were built, we would also advocate real or virtual fencing to prevent wildlife from crossing other than by established corridors.

## **Hostile human interactions with kangaroos**

Regarding hostile interactions between humans and kangaroos, the review notes that these incidents usually occur when dogs harass kangaroos and the dog owner intervenes in the confrontation. The government's management action for such incidents is to inform the public about the risks of moving too close to large kangaroos, and to encourage dog owners to keep their dogs restrained. SCK has no quarrel with this advice and nothing to add.

## **Use of kangaroo carcasses**

The suggestion that there might be more and better (ie more profitable) uses for the kangaroo carcasses is particularly worrying. A commercial market for kangaroo bodies would ensure that, even when the government's 'science' is fully exposed as baseless, and the abhorrent legislated instruments repealed, it will have become impossible to stop the killing because some people would, by then, be depending on it for their livelihood.

## **Trauma caused to humans by the annual massacre**

The review implies that the trauma to people concerned about kangaroo killing is insignificant (affecting less than 10 per cent of residents), because most people support the killing. There are several issues to be unpacked here.



Firstly, the way the survey questions are designed tricks people into agreeing with the slaughter by skewing the questions. Questions have been generally along the lines of:

- *Do you support culling kangaroos to prevent starvation during times of drought?* instead of asking *Do you think killing kangaroos prevents starvation during times of drought?* or
- *Do you support culling kangaroos to conserve grassland and woodland animals?* instead of asking *Do you think killing kangaroos conserves grassland and woodland animals?*

Certainly, it does not allow the respondent to discern between actual culling (ie humanely killing only the sick or starving or otherwise suffering) and the random mass slaughter conducted by the ACT government.

Secondly, many members of the public who have said they support the program do so only because, for years, they have been permitted to hear only the government's claims that the slaughter does prevent starvation during times of drought, and it does conserve grassland and woodland animals. Time after time, the ACT media has published the government's assertions about its kangaroos management program as if they were matters of fact. Press release after press release refuting these assertions has been distributed to the ACT media. Until the last couple of years, not one of the releases was picked up by any media outlet, nor was the nominated spokesperson ever contacted <sup>26</sup>.

Thirdly, how can trauma be treated as insignificant even if it is experienced by less than 10 per cent of the population? The trauma of the kangaroo killing has been extreme for many people, wrecking our mental and physical health at considerable expense both for ourselves and the health system. It has forced some people to sell their loved homes adjoining a reserve just to escape from the sound of animals being shot every night <sup>27</sup>. The government should also consider the expense of defending a class action by all the people whose lives have been shattered by the killing. It might well to come to that.

### **Animal welfare**

The review's consideration of animal welfare issues which, in our view, repeats all the ACT government's usual misinformation, requires and receives its own extensive chapter in this critique, as follows.

### **Cruelty and welfare**

The ACT government, and the review, have failed to even acknowledge the actual welfare issues resulting from the slaughter; these are the issues that animal advocates have been raising constantly over the last 15 years.

In addition to the actual death shots (ie depriving a sentient being of its life against its will), many other cruelty (welfare) issues that routinely occur during the government's annual slaughter have been raised with the government, and ignored.



These include:

- the bludgeoning and decapitation of pouch joeys (ie terrified, struggling baby animals);
- the orphaning of dependent at-foot joeys;
- shooting in wooded areas where visibility for clean shots is limited;
- shooting during adverse weather conditions (rain, wind, fog, and severe cold, especially if red dot targeting <sup>28</sup> is used, because cold reduces the accuracy of these devices); all these must be expected to result in a high wounding rate;
- shooters failing to check whether they have made a clean kill with the last shot before shooting the next animal;
- long delays between cessation of the first killing shots and the commencement of the softer euthanasia shots;
- driving kangaroos (causing myopathy and injury), especially from wooded areas into more open areas where they are easier to shoot;
- the sustained trauma to all kangaroos subjected to the terror of shooting night after night;
- the lifelong trauma caused to surviving kangaroos by loss of family and social structure; and
- the danger to kangaroos fleeing in panic (eg into roads, dams and fences, especially barbed wire fences).

The review's take on the animal welfare issues includes none of these but list the following.

- the Code of Practice;
- the 'culling' season;
- the government's translocation and kangaroo rescue policy;
- kangaroos killed by cars;
- (alleged) suffering of other animal species due to heavy grazing by kangaroos;
- (alleged) suffering of kangaroos due to overgrazing or drought;
- fertility control;
- the very small percentage of kangaroos killed in the ACT that are killed by the government; and
- how the slaughter program performs against seven international consensus principles for ethical wildlife control in conservation programs.

Each of these issues is discussed below.





## Codes of practice

The government and the review continue to justify the blatant cruelty of its killing program by claiming that it complies with the relevant Animal Welfare Code of Practice. There are two reasons why the Code of Practice is an empty justification for the cruelty of the slaughter.

Firstly the legislative purpose of animal welfare codes of practice is not to promote animal welfare but to excuse acts of economically motivated cruelty. Secondly, adherence to the relevant code of practice is both unenforced and virtually unenforceable.

The purpose of all Animal Welfare Codes of Practice (nationwide) which relate to farm animals or wild animals is not about maximising animal welfare. The legislated role of these codes is to provide loopholes for acts of cruelty that would otherwise breach a jurisdiction's animal welfare legislation.

For example, bludgeoning or decapitating an animal would normally meet the legal criteria for being an offence under the ACT's Animal Welfare Act. But adhering to the Code of Practice provides an exemption from prosecution under the Animal Welfare Act. Ergo, the Code of Practice not only allows but mandates the bludgeoning or decapitating of joeys.

Furthermore, jurisdictions that adopt, unaltered, a national model code of practice as its own code of practice are adopting standards that represent the lowest common denominator of welfare to which the Australian jurisdiction with the lowest standard of animal welfare was willing to agree. Each jurisdiction has the option of improving on this model code to raise the welfare standard to be more consistent with the jurisdiction's own welfare legislation (eg recognising that animals are sentient) or local conditions (eg enjoying a large urban kangaroo population).

The ACT's Animal Welfare Advisory Committee (AWAC) spent considerable time and effort developing a code of practice for 'humanely' killing kangaroos in the ACT, based on the national model code and the previous ACT local code. The new local code would have made the ACT Code more consistent with ACT conditions than the unamended national code. Sentience was not in the ACT legislation at that time, but the presence of kangaroos in urban areas made the ACT's situation very different from that of other jurisdictions.

Ignoring all the work of his own AWAC, the then Minister (Shane Rattenbury) declined to accept AWAC's recommendation and legislated the lowest common denominator, the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes* (2008), as its own Code of Practice.

The second problem with welfare codes of practice (for all animals) is that they are incredibly difficult to enforce. This is probably more the case with codes covering the killing of wild animals than codes covering farm animals, because the killing of wild animals often takes place at night in remote areas or (in the case of the ACT kangaroos) in reserves that are closed to the public under pain of wildly disproportionate legal sanctions under (of all things) the Nature Conservation Act 2024.



In relation to adherence to the Code of Practice, the review claims that independent veterinary assessments indicate that the shooting complies with the code. We note that, unless an independent vet has been out with the shooters every night, and on every reserve where killing occurs, every year of the massacre (ie fifteen years, equalling approximately fifty days a year equalling 750 nights of shooting to date, with up to ten hours shooting each night), they have absolutely no idea what the shooters do in the hours they know they are not being observed.

The review further claims that the shooting is humane because the shooters are 'highly professional'. We are not certain what 'professional' means in this usage, but many of us have personally observed many instances where the shooting has either delivered or been conducted in a way likely to deliver high wounding rates.

- In a government kangaroo burial pit, we found the body of a young kangaroo that had been shot, stabbed and bludgeoned before dying of asphyxiation or blood loss <sup>29</sup>.
- We have observed, firsthand, shooting occurring during adverse weather conditions (rain, high winds, fog, and sub-zero temperatures) – all of which are likely to result in high wounding rates.
- We have witnessed, firsthand, extended blasts of continuous shooting with no time between shots for the shooter to check whether he has made a clean kill with every animal.
- We have witnessed, firsthand, hours of delay between the conclusion of the loud 'culling' shots and what we believe to be the delivery of the softer euthanasia shots.

### **The 'culling' season**

The review claims that the ACT's 'culling season' (May through July) has welfare benefits because fewer pouch and at-foot young will be orphaned by killing mothers at this time of year, repeating the Directorate's assertions on this issue.

Even the KMPs recognise that kangaroo joeys take 18 months (ie over a year) to wean (KMP 2017, p12). Therefore, a yearly 'culling' season cannot prevent the orphaning of dependent joeys; the orphaned joeys are just likely to be slightly older dependent joeys. There is no time of year when killing females will not orphan at-foot joeys and subject pouch joeys to bludgeoning or decapitation; in most cases two joeys killed for every female killed. Experience of wildlife carers seems to agree that it takes even longer for joeys to become fully independent of their mothers <sup>30</sup>.

### **Translocation**

The government, again echoed by the review, claims that its policy prohibiting translocation is all about kangaroo welfare, because rescue and release of hand-reared joeys has 'poor welfare outcomes'. Dr Legge claims that research since 2017 corroborates this. Given that current practice is shooting, decapitating, orphaning and bludgeoning kangaroos, the assertion that the ACT's prohibition on translocating kangaroos is for 'welfare reasons' is cynical in the extreme.



The claim that rescue and release of hand-reared joeys has poor welfare outcomes, and that research since 2017 corroborates this, flies in the face of the experience of thousands of wildlife rescuers and carers across the country.

In regard to larger scale translocations, members of SCK have participated in at least one very large scale translocation where not one single kangaroo was traumatised, injured or died. We have no reason to believe the proposal by Wildcare Queanbeyan, in 2007, for the largescale soft translocation of the kangaroos from the BNTS (see above) would have been any less successful and trauma-free than the one we witnessed. It would have saved every one of those 500 sentient lives which the Defence Department killed under ACT government licences in 2008.

Given the lack of evidence or reasonable argument that kangaroos are a problem for the ecological condition of the reserves, SCK does not support translocation of kangaroos unless they are trapped (as they were at BNTS), or about to be trapped (eg by development, fencing, fire, floodwaters etc) in a location from which they are, or will be unable to range freely away. For welfare reasons alone, kangaroos that are trapped in an unnaturally small site from which they cannot range widely, should always be relocated.

Soft (humane and harmless) relocation of kangaroos to safer locations is a well-established practice among wildlife carers.

### **Kangaroos killed by cars**

Irrespective of the accuracy or otherwise of the review's figures on kangaroo road deaths (see above), as a welfare issue this is certainly a serious one, not just for kangaroos but also for the other wild animals that routinely cross the roads that bisect the CNP.

Killing the victims to save them from being killed, as seems to be often advocated by members of the public and even the media, is obviously not a sane solution. At least the government has never claimed that one of its purposes in slaughtering kangaroos is to save kangaroos from car accidents.

As mentioned above, both the reviewer and SCK support similar measures to reduce wildlife road deaths, though SCK would strongly advocate for measures to enforce reduced speed limits.

### **Suffering of other animals species due to (alleged) heavy grazing by kangaroos**

As acknowledged above, it might conceivably be possible for natural kangaroo grazing to hasten the inevitable demise of a population of threatened species which is already compromised by small numbers, isolation, and drought. In this case, translocation of the compromised population is the only humane and rational solution.

We repeat that no plausible evidence or study has ever been published identifying any other scenario where kangaroo grazing has ever caused suffering to any member of any other species.



All wild animals in the ACT are desperately in need of greater consideration and protection of their welfare. The ACT government's war on kangaroos is making the suffering of all of them far worse. Welfare issues impacting or potentially impacting on these animals include:

- loss of habitat due to unremitting development up to the very fences of the reserves;
- continuing livestock grazing on land adjoining the reserves;
- occasional livestock grazing inside the reserves themselves, in a misguided attempt to manage the biomass overgrowth caused by the removal of the kangaroos;
- the overgrown biomass itself;
- ranger and shooter vehicles driving on the reserves, damaging the habitat;
- ranger and shooter vehicles driving on the reserves, colliding with animals;
- animal collisions with motor vehicles on roads separating the reserves;
- climate change, including ongoing risk from drought, fire and other extreme weather events;
- polluted or depleted water sources;
- the loss of the keystone services formerly provided by kangaroos, maintaining a vegetative environment appropriate to all species in all seasons and climatic conditions.

As mentioned above, any population of any animals (including kangaroos, reptiles or any other species), threatened or otherwise, that is trapped at any site (whether by development, exclusion fencing, flood waters, fire aftermath or just isolation from prospective mates) should be relocated to a more appropriate location.

### **Suffering of kangaroos due to overgrazing or drought**

Unlike domestic livestock, kangaroos do not 'overgraze'. Like all other wild animals on Earth, they live in dynamic equilibrium with their environment. They graze exactly according to the available food supply. If the food supply dwindles, including if it dwindles because the population has got a bit bigger than usual and started eating more than the land is producing, the population will quickly adapt to the resulting food shortage. Some individuals will range farther away to avoid competing for the reduced food supply. Some older kangaroos and joeys might die. Other than in drought, it is only if healthy, adult kangaroos are trapped in some way that prevents them from finding adequate food, so that they are forced to try to eat stubble, that will they starve.

During a drought, all wild populations of plants and animals (including kangaroos, reptiles, birds, rabbits) decline due to deprivation of food, water and shelter. This is not the result of any species 'overgrazing' or 'intensively grazing'. In fact, during a drought, there is far less grass available to graze so that all grass eaters will be eating less grass, rather than more grass than usual. It is simply a case of all species responding, as all species must, to variations in food supply in a drought-prone climate.



However, as noted above, kangaroos are perfectly adapted to this climate in every aspect of their biology: their metabolism, their teeth, their feeding preferences, their fur, the faeces, their feet, their method of locomotion, and their capacity to suppress their own fertility (see below). If any species survives until the drought breaks, its post-drought recovery will most likely be thanks to the wide ranging of kangaroos throughout the drought, in search of better pasture, distributing seeds as they go.

Food deprivation, if it occurs, suppresses conception and the production of sperm, in most animal species, including kangaroos. Additionally, kangaroos suppress their fertility when food becomes scarce, because they have the capacity to practice diapause: to temporarily suspend growth of a foetus. Dr Legge noted in comments to SCK that that 'temperate EGK don't seem to use diapause in the same extent as roos in more arid regions; instead they have higher PY/Juvey/subadult mortality' <sup>31</sup> (PY=pouch young; juvvies=juveniles). However, it seems at least equally likely that it is simply because kangaroos in this part of Australia are rarely so desperately short of food that they need to suppress their fertility.

There are other plausible explanations for infrequent resort to diapause. One is that the high infant mortality (as suggested by Legge) among kangaroos not practicing diapause is due to fox predation, especially during drought when fox predation might be expected to increase due to fewer rabbits being available. Not having evolved in this drought-prone continent, rabbits are far more water-dependent than kangaroos, and will die off quickly during a drought, much faster than kangaroos. This will leave more grass for the kangaroos and other native grass eaters. Additionally, foxes will be forced to take more joeys, in the absence of rabbits. So the pressure on the kangaroos' food supply will be reduced from both directions: slightly more grass available and fewer joeys to be fed.

Whatever the reason, in times of food shortage, kangaroo grazing pressure declines rapidly even without diapause. During very severe or extended drought, it is quite possible for kangaroos, especially joeys born before food became scarce, to starve. Additionally, very old kangaroos often die of starvation even when grass is plentiful, because they run out of teeth <sup>9</sup>. These are brutal, natural, necessary processes (like predation) by which the fittest are selected to survive. To attempt to prevent the possibility of kangaroos starving in the next drought by shooting young, healthy adult kangaroos every year, and clubbing their joeys to death is ethically repugnant, ecologically counterproductive and genetically irresponsible.

Of course, if a kangaroo or any other wild animal is found deathly ill with malnutrition during a drought (or for any other reason), humane euthanasia - of those individuals only - would be ethically and ecologically acceptable. Killing healthy individuals that have a hope of recovery and survival is not.

Because anthropogenic climate change will continue to cause ever more extreme weather events, and other human behaviour will continue to cause ever more anthropogenic disasters, SCK believes that humans have a duty to, as far as possible, do all we can to prevent the suffering of all wild animals during these events, by providing extra feed, clean, sheltered water, and artificial cover for affected animals.



With ongoing climate change, habitat loss, and other human pressures, it is to be expected that ever more animal species world-wide will ultimately be starved to extinction. This starvation will not be due to animals of different species competing for food among themselves, nor to a failure by humans to massacre whatever species they consider to be the more successful competitor (eg kangaroos), in the hope of saving the less fit species. It will be directly due to the climate change, the habitat loss and the other human pressures. Only by massively changing human behaviour will any of those extinctions be prevented.

### **Fertility control**

The review notes that field deployment of contraception for kangaroos is underway. Although, it goes without saying that reducing fertility is always a better way of curbing population growth than increasing mortality, from SCK's point of view, contraception would be desirable only if anyone were ever to provide any convincing evidence or argument that kangaroo populations need to be managed in the first place.

### **The government slaughter kills 'only' 2% of the ACT's kangaroos**

We note that killing 'only' 2 per cent of kangaroos in the ACT has meant killing 40,000 sentient beings, and many thousands more to be slaughtered in future years.

### **Seven international consensus principles for ethical wildlife control in conservation programs**

Dr Legge concludes her review by assessing the ACT killing program's performance against seven international consensus principles for ethical wildlife control in conservation programs. She claims that the killing adheres to all these principles.

On the basis of all the information provided by the government and the review, we make the following comments on how the killing program performs against each of these principles.

### **Modify human practices**

This would require:

- putting the brakes on urban sprawl and infill; this is not under consideration;
- resumption of farmland adjoining reserves and active restoration of this land as conservation reserve, protected from further development (and, of course, from kangaroo slaughter); this is not under consideration;
- an end to killing kangaroos which deprives the CNP of their keystone services at natural densities; this is not under consideration;



- creating proper corridors, including overpasses and underpasses, combined with appropriate fencing and enforced speed limits (eg traffic calming devices and speed cameras) where animals are forced to cross roads; Dr Legge’s review supports some of this, but we seriously doubt the government will agree to it, or that enforcement of lowered speed limits would be resourced;
- identify or create safe havens for otherwise doomed remnant populations of threatened species; this has been done at least twice but it needs to become routine;
- remove all barbed wire from all reserves; this has happened in a few places but barbed wire is still present on many reserves.

### **Justification for control**

Neither the government nor the reviewer has presented any justification or plausible independent argument or evidence for ‘controlling’, ‘managing’ or slaughtering kangaroos in the ACT.

The only situation that provides a rationale for managing any animal population is where kangaroos, under drought conditions, are being forced to eat the grass that provides habitat for a small isolated remnant population of a threatened species. This situation demands management (ie relocation) of the remnant population, not slaughter of the kangaroos.

### **Clear and achievable outcome based objectives**

The objective of the Kangaroo Management Plan as articulated in the KMP and the review is: ‘detail the appropriate management of the species on the land specified in the plan’. No clear and achievable outcome-based objective (such as protecting biodiversity or even a few threatened species) other than killing the kangaroos is suggested.

### **Overall welfare (including options other than killing should be assessed)**

We have discussed details of the animal welfare impacts, for all wild animals in the ACT, and for kangaroos in particular, at length in this paper. Every aspect of the kangaroo slaughter is an unmitigated welfare disaster.

The simplest alternative option to killing is simply to stop killing, given that no plausible argument in favour of killing has ever been presented.

### **Social acceptability**

The Management Plan is ethically and ecologically completely unacceptable. It has achieved a degree of social acceptability only by bombarding the public with misinformation, and somehow suppressing the publication in the mass media of alternative views.



The program has never considered any community values other than those that support killing animals. The Plan's authors have always ignored the majority of submissions provided. Presumably, this is because the majority of submissions provided have opposed the killing program.

### **Systematic planning**

Systematic planning of the slaughter of kangaroos has certainly been undertaken, in the form of the KMPs. Sadly, no systematic planning for reducing human impacts on ACT wildlife or biodiversity have ever been undertaken.

### **Decision making by specifics rather than labels**

Kangaroos, although native animals and a keystone species, have been subjected to false and derogatory labels such as 'pest' and most recently (and ludicrously) 'invasive'. As a consequence of this rhetoric many Canberrans have been misled into assuming there is some ethical and/or ecological justification for the government's slaughter of kangaroos. As yet, no effort seems to have been made to redress the damage done by this labelling.

### ***Notes and references***

1. *Injustice*, Maria Taylor, 2021, *Injustice: An Investigation and Cultural History*
2. Vivian and Godfrey, 2014, Lyndsey Vivian and Robert Godfree, CSIRO Plant Industries, 2014, *Relationships between vegetation condition and kangaroo density in lowland grassy ecosystems of the northern ACT* (Analysis of data 2009, 2012 and 2013)
3. Brooks, David, *Roogate*, 2016, supplement to *The District Bulletin*
4. For further information regarding the work of Dr Dan Ramp's and the Centre for Compassionate Conservation, refer to the Centre's website: [Centre for Compassionate Conservation | University of Technology Sydney \(uts.edu.au\)](http://Centre for Compassionate Conservation | University of Technology Sydney (uts.edu.au))
5. For further information field ecologist, Ray Mjadwesch's work, refer to his website: [kangaroos at risk - Kangaroos at risk - threatened species nomination](#), 2011
6. Notifiable instrument NI2018-141 made under the Nature Conservation (Eastern Grey Kangaroo) Controlled Native Species Management Plan 2017, s 2.3 (Implementation of the management plan)
7. ACT Administrative and Civil and Administrative Tribunal, Hearing on ACT Government Kangaroo Cull 2013, Day 2: page 14, lines 27-31





8. ACT Administrative and Civil and Administrative Tribunal, Hearing on ACT Government Kangaroo Cull 2013 Day 1: page 37, lines 24-27.

Explanatory note: At this ACAT hearing on the government's kangaroo killing program in 2013, the government ecologist, based on biological kangaroo breeding limitations and their high infant mortality rate, agreed with the independent field ecologist (Mr Mjadwesch), who gave evidence which supported the appellants, that the maximum annual population growth rate for Eastern Grey Kangaroos is about 10-11 per cent per year. Asked to explain why the government's estimated population increase on several ACT reserves was much higher than this, Dr Fletcher attributed the increase to 'inward migration' which (of course) does not represent any overall population increase.

9. Dawson, T, 2012, *Kangaroos* (2<sup>nd</sup> Edition), in *Australian Natural History Series (CSIRO)*].

Note: several points about kangaroo biology made in this are paper are referenced to Dawson's work, but page numbers are not included.

10. Munn, A J, Dawson, T J, McLeod, S R, Croft, D B, Thompson, M B, and Dickman, C R, 2009, *Field metabolic rate and water turnover of red kangaroos and sheep in an arid rangeland: an empirically derived dry-sheep-equivalent for kangaroos in Australian*, in *Journal of Zoology*
11. In her written responses to Frankie Seymour's comments on Dr Legge's Powerpoint summary of the review, which was presented at Dr Legge's second meeting with representatives of *Save Canberra's Kangaroos* and other groups opposing the slaughter, Dr Legge's acknowledged that 'thick grass isn't a good thing'.
12. Bush Heritage website, December 2015.
13. Canberra Radio 666, Interview with Conservator, 2022.
14. Translocation proposal paper delivered to ACT government and presented to the ACT AWAC by Naomi Henry of Wildcare Queanbeyan, May-June 2008
15. ACT Animal Welfare Code of Practice for the Humane Destruction of Kangaroos, Gazetted circa 1994, Section 2.1
16. ACT Administrative and Civil and Administrative Tribunal, Hearing on ACT Government Kangaroo Cull 2013 Day 2, page 228, lines 26-28
17. "Survival in Queanbeyan: A good news story", in *Queanbeyan Palerang District Bulletin*, July 2013 p1,13
18. ABC news report, posted Mon 1 May 2023 at 3:13pm Monday 1 May 2023



19. NSW Office of Environment and Heritage, website accessed 2016, *Grassland Earless Dragon – profile*
20. ACT Administrative and Civil and Administrative Tribunal, Hearing on ACT Government Kangaroo Cull 2013 Day 2: page 227, lines 36-45, and page 234, lines 30-45.
21. Robinson J and Grace J, 2022, *Eastern Grey Kangaroos in Canberra Nature Park, Population estimates and culling history 2009 – 2021*
22. NSW Government, 2022, Inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales Health and wellbeing of kangaroos and other macropods in New South Wales (nsw.gov.au), Finding 3.57
23. Quota Report New South Wales Commercial Kangaroo Harvest Management Plan 2017–2021
24. Numerous reports and complaints made by protesters present at the time.
25. AAMI, reported by Suncorp, *Animal collisions jump 22% as AAMI urges drivers to stop ignoring wildlife signs*, June 2024
26. For a full record of media releases issued by the Animal Protectors Alliance in relation to the ACT kangaroo slaughter, and ignored by the ACT news media since 2014, visit <https://animalprotectors.com.au/issues/kangaroos/press-releases/>
27. Anecdotal evidence of distress over the kangaroo killing, especially among protestors who have felt duty-bound to bear witness and residents who live near the reserves and are forced to listen to the shooting, is extensive. There are at least two (as yet unsubstantiated anecdotes of people selling their homes because they just cannot bear it.
28. Green Eye Tactical, 2017 *Comparative Study of Red Dot Sight Parallax*
29. Regional Friends of Wildlife submission to Environment and Sustainability Commissioner Robert Neil, December 2014: <https://warmandwildblog.wordpress.com/55-2/regional-friends-of-wildlife-submission-2013/>
  - (a) pp 20,162 Attachment K, photographs from the burial pit
  - (b) pp 20, 159, Attachment J, autopsy report by Doctor Howard Ralph
30. Experience of wildlife carers informs us that it takes even longer than the 18 months it to full weaning, for joeys to become fully independent of their mothers.
31. Dr Legge's written responses to Frankie Seymour's comments on her (Dr Legge's) Powerpoint summary of the review, presented at her second meeting with representatives of *Save Canberra's Kangaroos* and other groups opposing the slaughter.



### ***Authorship of this paper***

*This paper was prepared by Frankie Seymour, in consultation with numerous other members of Save Canberra's Kangaroos.*

*Frankie Seymour is a social and environmental scientist whose professional experience includes developing meaningful and measurable indicators for Australia's State of the Environment Reporting (SoE). She is also a lifelong animal protection activist and advocate, who (among many other animal advocacy positions and responsibilities) served on the Animal Welfare Advisory Committee to the ACT government for nearly 18 years.*