Decimation of an ICOn



Photo Ray Drew

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The following report exposes our kangaroos in crisis and on the brink of extinction, right across New South Wales, Queensland and South Australia, decimated by a trade in leather and meat, and condoned by federal and state governments. This report also unveils decades of propaganda and myth used to justify a cruel and unsustainable industry; the world's largest wildlife massacre; the commercial kangaroo industry.



Photo by Stella Reid

The following statistics are taken from Queensland, NSW and South Australian government data, recording kangaroo populations since the 1970s.

Kangaroos on the Brink

Kangaroos are commercially hunted across New South Wales, Queensland, South Australia and Western Australia. They are sold as pet food and leather. Their skins are sold to international shoe companies such as Adidas, Nike, Reebok, Puma, Florsheim and various other European and American shoe manufacturers. The Federal Government is responsible for monitoring the industry in the commercial hunting states, and is bound by the Environmental Protection Biodiversity and Conservation Act 1999 to ensure the protection of biodiversity and native species. Tragically however, the federal and state governments have failed to protect kangaroos, with government data exposing a commercial trade in leather and meat, combined with severe drought, driving kangaroos to the brink of extinction across most of New South Wales, Queensland and South Australia. Red Kangaroos, Western and Eastern Grey Kangaroos, Wallaroos and Euros have been hunted to critical levels of less than five kangaroos per square kilometre, densities defined by the Murray Darling Report as 'quasi extinction' and meaning:

'The nominal value of kangaroo densities taken to indicate the effective loss of the species' (1).

The Murray Darling Report is a scientific report published by the Murray Darling Commission and written by government and independent scientists. It gives clear warnings regarding the risks of hunting kangaroos at population densites below five kangaroos per sq/km:

'Strategies that produce average densities of less than 5 kangaroos per square kilometre would result in minimum densities of less than 2 kangaroos per square kilometre, and could be considered a threat to species conservation' (2).

As stated earlier, all commercially hunted kangaroo species are now 'quasi extinct' across most of New South Wales, Queensland and South Australia, and as predicted by the Murray Darling Report kangaroo numbers have crashed even further, to less than two per square kilometre across half of these states:

'Critical minimum densities are not clearly defined but populations below 2 kangaroos per square kilometre would generally be considered at risk of extinction' (3).

SOUTH AUSTRALIA

The Commercial Hunting zones cover most of South Australia. There are almost no areas in South Australia where kangaroos are fully protected.

Three kangaroo species are commercially hunted for their meat and skin in South Australia: Red Kangaroos, Western Grey Kangaroos and Euros.

Population counts for 2007 show Red and Western Grey Kangaroo populations at their lowest level ever recorded in South Australia.

Across most of South Australia all three commercially hunted species are 'quasi extinct'.

Despite these critical levels, the South Australian government has set a quota of 12-20% of the remaining population to be killed every year by the kangaroo industry.

SA Red Kangaroo

Red Kangaroos are at their lowest level ever recorded in South Australia.

Red Kangaroos are quasi extinct across 92% of South Australia, and at less than 2 sq/km across 50% of the state.

Since 1998, across 42% of South Australia, up to 80% of Red Kangaroos have been lost.

The commercial hunting quota for 2008 for Red Kangaroos is 15-20% of the population, despite being at its lowest level ever.

Red Kangaroo populations only increase at a rate of 6-8% per year, therefore they are being killed at a rate three times faster than they can breed. (4)

The commercial quota is the percentage of the population killed by the commercial kangaroo industry every year. For 2008, this stands at 3.6 million kangaroos. This quota does not include pouch joeys killed by the shooter, ex pouch joeys orphaned and left to die, kangaroos killed privately by farmers, kangaroos killed by local governments in National Parks and State forests, kangaroos killed illegally, kangaroos killed on the road or those that perish in drought, flood and bush fires, or when their habitat is destoyed by development The total annual toll on kangaroos is probably in excess of double the commercial quota.

SA Western Grey

Western Grey Kangaroos are at their lowest level ever recorded in South Australia.

Western Grey kangaroos are 'quasi extinct' across 80% of South Australia, and less than 2 per sq/km across 60% of South Australia.

Since 1997 numbers of Western Grey Kangaroo numbers have crashed by 72-80% across 42% of the state.

The South Australian government is allowing the kangaroo industry to kill 12-15% of the remaining Western Grey kangaroo population annually without review until 2012, when the quotas are reviewed again.

Euros

Euros are 'quasi extinct' across most of South Australia, and are at densities of less than 2 per sq/km across 63% of the state.

Despite this, the commercial kill quota remains at 12-15% of the remaining population annually.

Across half of South Australia, fifty percent of the kangaroos killed by the commercial industry are female. Killing fifty percent of females from a wild population puts a species at great risk of extinction.

The average weight of kangaroos killed by the commercial industry in South Australia is just 22kg. These kangaroo are therefore only 18 –36 months old and barely of breeding age. Kangaroos can weigh up to 90kg and live for 25 years.

'Research shows that the average age of Red Kangaroos is now only 2 years old'(5).

This provides evidence to support the theory that the big kangaroos have been wiped out by the industry for their larger skins, and with few kangaroos left, the industry is forced to kill more females, and smaller and younger kangaroos, which are the breeding stock for the future; a certain recipe for extinction.

The ongoing killing of the large males also creates a genetic disaster, weakening their genetic and physiological strength and leaving them unable to cope with drought and disease. This combined with the loss of critical mass that we are witnessing now, has the potential to wipe out the species.

'Removing the alpha males from a mob also destroys social order, leaving females at the whim of younger and immature males and a mob with no structure or hierarchy. This is a dangerous and potentially fatal situation for the doe (female) and any joey she may have in her pouch or at foot. It can lead to the death of the doe and her joeys from stress myopathy or exhaustion as she desperately tries to escape the forceful advances of the young males. The larger dominant males also play a role in integrating with the young joeys, playing with them from a very young age, and teaching them all the important survival techniques.'(33)

All the above data regarding South Australia's kangaroo populations and 'harvest' statistics were obtained this year (2008) from Dana Thomson, Ecologist-Kangaroo Management, South Australian Department of Environment and Heritage (6).



QUEENSLAND

The commercial kangaroo industry has access to 94% of the state, leaving only 6% of Queensland protected for kangaroos.

Queensland Red Kangaroos, Eastern Grey Kangaroos and Wallaroos are killed at a rate of 10-20% of the population each year by the commercial kangaroo industry alone.

Qld Red Kangaroo

Red Kangaroos are quasi extinct (<5 sq/km) across 70% of Queensland, and at densities of less than 1.6 sq/km across 40% of the state.

Despite these critically low levels, the Queensland government has allowed the kangaroo industry to kill 15- 20% of the remaining Red Kangaroos annually.

Eastern Grey Kangaroo

Since 2001 numbers of Eastern Grey Kangaroo populations have crashed by 45% in some areas and up to 90% in others across 62% of the state.

Eastern Grey Kangaroos are 'quasi extinct' across 36% of Queensland.

Wallaroos

Wallaroos are 'quasi extinct' across 86% of Queensland, and at densities of less than 2 sq/km across 52% of the state.

Numbers of Wallaroos in Queensland have crashed by up to 99% in some areas.

Despite these figures, the commercial industry will continue to kill 10-15% of the remaining Eastern Grey and Wallaroo population, and 15-20% of the remaining Red kangaroos in Queensland annually.

As in South Australia, the average weight of kangaroos killed by the kangaroo industry in Queensland is just 20kg. These kangaroos are barely of breeding age.

All Queensland data relating to population densities were obtained from the Queensland Environment Protection Agency, Macropod Management Unit (7).

NEW SOUTH WALES

The Commercial Kangaroo Management Zone covers 93% of NSW, leaving just 7% of the state as protected habitat for kangaroos under the National Parks and Wildlife Act Pt 4.

NSW Red Kangaroos

Red Kangaroos have been exterminated by 75% in some areas and up to 90% in others across 70% of NSW.

Red Kangaroos are 'quasi –extinct' at less than 3.3 sq/km across 68% of NSW.

Red Kangaroos are at their lowest level ever recorded across 40% of NSW.

The commercial industry is killing 17% of the remaining Red kangaroos annually in NSW for export as leather and meat.

NSW Grey Kangaroos

Numbers of Grey Kangaroos have crashed by between 75% in some areas and up to 90% in others across 45% of NSW

Grey Kangaroos are at their lowest level ever recorded across 40% NSW.

Grey Kangaroos are 'quasi extinct' across 36% of the state.

The kangaroo industry will slaughter 15% of the remaining Grey Kangaroos annually.

Wallaroos

Wallaroos are 'quasi extinct' at less than 3 sq/km across the entire state of NSW.

Wallaroos have been decimated by 70% in some areas and up to 85% in others across 75% of the state.

Wallaroos are at their lowest level ever recorded in NSW.

Despite this catastrophic situation, the NSW government has set the quotas for Wallaroos at their highest level ever, allowing the commercial industry to slaughter 15% of the remaining Wallaroo population every year.

All data above were taken from the *NSW Kangaroo Management Program-Quota Report* for 2008, NSW Department of Environment and Conservation (8).

THE FOLLOWING INFORMATION EXPOSES CENTURIES OF PROPOGANDA AND MYTH THAT HAS FALSELY JUSTIFIED THE WORLD'S LARGEST WILDLIFE SLAUGHTER, AND SENT AN AUSTRALIAN ICON TO THE BRINK OF EXTINCTION.



Photo by Stella Reid

For decades the Australian government has assured the public that the commercial slaughter of our national icon is necessary to control kangaroo numbers, to protect farmers, is economically and environmentally sustainable, and poses no threat to kangaroo conservation. The information and scientific reports discussed here expose a commercial trade in kangaroos that is not only unnecessary and unsustainable, but is in breach of the Environmental Protection and Biodiversity Conservation Act 1999.

The Murray Darling Report, titled 'Kangaroo Options in the Murray Darling Basin' was written in 2004 by Ron Hacker, Steven McLeod, John Duncan, Brigitte Tenhumberg and Udai Prahan. It clearly states that:

'Harvesting over most of the region ceases to be economically viable at densities considerably higher than those commonly regarded as minimum levels for conservation (5 k km2)' (9).

'Reduction of kangaroo densities to less than 5 kangaroos per square kilometer over large areas would result in the demise of the kangaroo industry' (10).

'Pastoralists' would need to accept that reduction of kangaroos to very low densities (<5 k km2) over large areas is neither commercially feasible, ecologically defensible or economically justified '(10).

So the Australian government is not only allowing a commercial wildlife trade to slaughter kangaroos in areas where they are at risk of extinction, but is supporting an industry that is unsustainable, killing juveniles, and destroying kangaroos at a rate faster than they can breed.

A literature review prepared for the Kangaroo Management Advisory Panel in March 2006, by the School of Botany and Zoology, Australian National University, ACT titled, 'Situation Analysis Report, Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological and Economic Impact and Effect of Culling' by Penny Olsen and Tim Low, confirms the findings of the Murray Darling Report in its executive summary:

'Evidence suggests that commercial harvesting is not sustainable at densities that threaten any of the harvested species with extinction' (11).

'The Australian State of the Environment Report 2006' found that:

'At present there are insufficient data available on actual kangaroo populations and characterisites to demonstrate that harvesting does not have a detrimental impact on either the harvested species or their ecosystem' (12).

In evidence given at the New South Wales Administrative Appeals Tribunal, [Wildlife Protection Association Australia (Applicants) vs NSW Minister for Environment Heritage and the Arts (Respondent), No.N535 of 2007], it was found that within the 2008-2012 NSW Kangaroo Management Plan, there are no "trigger levels" with which to identify when the kangaroo population was at risk. Therefore the current quotas would continue, despite critical densities until 2012, when the current Kangaroo Management Plan expired. The applicants argued that:

'None of the Actions of the Plan provided for the suspension or reduction of the commercial killing of kangaroos if certain threshold situations are reached. There is no specific level of detriment or harm above which the Plan is suspended or the quotas are reduced' (13).

'The EPBC ACT requires the Management Plan include management controls to ensure that 'the impacts of the activities' on each of the species of kangaroos are ecologically sustainable, and that on the evidence the Tribunal cannot be satisfied that there are sufficient management controls included in the Plan that ensure the impacts are ecologically sustainable' (14).

'Ecological sustainability requires some benefit of the use. The Plan cannot be shown to produce any conservation or biodiversity benefit. Killing part of the population is not necessary for the survival of the rest of the population of the species' (15).

It is also important to note what was heard from the Minister for Environment Heritage and the Arts (respondent) during the hearing:

'The respondent accepted that a quota of 17% per annum and the addition of the special quota would be unsustainable in the long-term' (16).

An equally disturbing report written by Dr Mark Drummond, warns of these predictions:

'According to the least squares exponential regression equation established using Eastern Grey kangaroo population estimates, provided by the Australian Government Department of the Environment, Water, Heritage and the Arts for the period 2001 to 2007, the number of Eastern Grey kangaroos in Australia will reduce from 30 million in 2001 and 10 million in 2007 to about 5 million in 2010, 2 million in 2015, and less

than 1.0 million in 2020, if the trend observed from 2001 to 2007 continues until 2020."(34).

In light of these statistics, the fact that all four species have already crashed by 50% in some areas and up to 70% in others between 2001 and 2007 alone, and the large scale quasi extinctions across three out of the four commercial hunting states, along with the real and pending threat of further drought, fire, flood, lack of habitat, water and food across Australia, it is highly likely that if the commercial and non commercial killing of kangaroos continues in New South Wales, Queensland and South Australia, there would be large scale irreversible extinctions, of Red Kangaroos, Eastern and Western Grey Kangaroos, Wallaroos and Euros across three states within just a few years.

These statistics also expose a significant breach of the *Environmental Protection and Biodiversity Conservation Act* by the Australian government and the Kangaroo Industry Association Australia, whereby they have failed to protect kangaroos at the extent of their range and ensure that the impacts of the industry are ecologically sustainable. It has also failed in other aspects of the *EPBC Act* 1999, by inflicting significant cruelty on pouch joeys and ex pouch joeys in the matter in which they are dispatched (bashed to death or decapitated, and/or orphaned and left to die from starvation stress and exposure), therefore failing to "protect the humane treatment of wildlife" and by not taking a "precautionary principle when making decisions relating to the utilization of wildlife" (17).

'The shot to the head out of the darkness that the industry and its supporters promote as clean, green and humane; every night leaves behind abandoned young-at-foot quietly coughing in an attempt to unite with their mothers-but nobody hears' (35)





Scientific evidence now available exposes a large-scale slaughter of protected native animals, the world's largest wildlife massacre, based on propaganda and myth, promoted by a cruel and unsustainable trade in a precious Australian icon. Government and independent scientists such as the CSIRO; Prof. Gordon Grigg, (Environment Australia); Steve Mc Leod (University NSW, NSW Dept Primary Industries); Dr Tony Pople; Penny Olsen and Tim Low (School of Botany and Zoology, Australian National University, Canberra ACT); Dr David Croft (University NSW); and Ingrid Witte (NSW Dept Environment and Climate Change, UNSW), now agree that based on the evidence, kangaroos exert negligible impact on pastoral and agriculture production, hence undermining the justification for this large scale destruction of unique native animals.

Ms Nicole Payne, Manager of the Kangaroo Management Program, NSW Department Environment and Conservation, admitted at the Administrative Appeals Tribunal that the commercial slaughter of kangaroos is:

'Not designed to achieve population control or damage mitigation, but for commercial harvesting' (18).

Ms Payne also agreed with Olsen and Low (2006) in their Literature Review 'Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological Impact and Economic Impact and Effect of Culling' that:

'Damage mitigation as grounds for harvesting is unfounded'

'Kangaroos provide some benefits to biodiversity and save for exceptional circumstances, are not competitors with sheep or cattle' (19).

Pople and McLeod (2000, UNSW) are also referred to in the court proceedings, as well as Olsen and Brayshaw (2000), to support the overriding evidence that between sheep and kangaroos:

'Competition seldom occurs' (20).

Within Olsen and Low's Literature Review, they also confirm these findings:

'Indeed there is little convincing evidence of substantial damage by kangaroos to crops, pastoral production or rangelands, except in a few localized areas' (21).

Grigg (2002) proposed that kangaroos had a DSE (dry sheep equivalent) of just 0.2, meaning kangaroos consume only one fifth as much as sheep. He states:

'The removal of kangaroos will not bring expected benefits to woolgrowers in part because kangaroos are a much smaller component of total grazing pressure than is generally assumed' (22).

'The Australian State of the Environment Report' supports these studies in its findings, that in the 60% of Australia that is made up of low intensity grazing land, kangaroos exert a grazing pressure of just 1-8%, compared to sheep and cattle which in combination exert a grazing pressure of 92-99%. (23).

Dr David Croft, in his paper, 'The Future of Kangaroos: Going Going Gone?' disputes claims that kangaroos take advantage of 'rested' paddocks and inflict damage:

'Grazing pressure in the de-stocked paddocks had in effect significantly been reduced by the removal of 400 sheep. The amount of kangaroo dung never surpassed that of kangaroos in the stocked paddock, despite the absence of sheep'.

'Given the sedentary behaviour of mature individuals, there is no strong evidence that red kangaroos invade areas of improved pasture within a short period of time and remain there to cause long term damage' (24).

In fact, further research from Fowlers Gap Research Station, (Witte, 2002, UNSW) reported a positive relationship between the biomass of both total pasture and green pasture and kangaroo density. Witte states that these findings support the conclusion that kangaroos and livestock do not compete strongly for food (at least in the rangelands), that resource availability drives the grazing systems, and that:

'Mixed species grazing regimes are more productive and ecologically sound.' (25).

Olsen and Brayshaw (2003) agree:

'Kangaroos do not appear to impact greatly on wool production and mixed grazing systems (cattle and kangaroos/sheep and kangaroos) tend to be most productive' (27).

Literature written by ecologist Dan Ramp (University NSW) such as his paper "Our 'common' wildlife may be the next 'sleeping' threatened species", describes the importance of kangaroos in protecting threatened and endangered species from decline:

'Native herbivores such as kangaroos and wombats, play a vital role in ecosystem functioning but are often victimized and treated with lack of concern because of socio-political factors and historical value judgements rather than heeding biological and ecological information.' (28).

He also refers to the findings of Smith and Knapp (2003):

'It is widely recognised that species and ecosystem function are strongly linked. Common species can play key roles in conferring short-term resistance to reductions in ecosystem functions, as rare and uncommon species are lost from the system. We now have entered earths sixth mass extinction event, this time human driven, and yet the setting aside of protected areas may not be sufficient to prevent this loss of biodiversity little research has rigorously quantified implications for biodiversity at local scales. Many species that are now considered common will be effected, but unless we target those 'sleeper' species through monitoring of their distributions and functioning in ecosystems, managers will only be able to be reactive to declines, rather than proactively preventing them' (28).

David Croft challenges the myth that there are more kangaroos now than before white settlement, another unfounded argument used to justify decades of decimation of kangaroos across Australia. He believes the contention-that there have never been as many kangaroos in Australia as until the advent of agriculture, is an absurdity. He bases his argument on the following facts:

'In the first several million years of occupancy of the Australian continent by the modern kangaroo fauna, who has the time machine to know?' (How many kangaroos there were pre -colonisation).

When calculating the country's ability to support sheep and cattle in present day conditions, Croft equates the lands ability to support the 2004 estimates of sheep and cattle at 22 million cattle and 105 million sheep, or 237 million Dry Sheep Equivalent. This is equivalent to the energy demands of 339 million to 1.185 billion kangaroos (at just 0.2- 0.7 DSE). The kangaroo population has been estimated at just 20 million in recent years, and therefore:

'Amazingly we have been clever enough to create pasture for the equivalent 7-24 times the more generous estimate of the number of kangaroos currently in Australia yet this supposedly excessive number was unsustainable pre 1788' (36).

In regard to the myths that man made water sources have increased kangaroo populations, Croft believes:

'This same landscape is populated with a vast network of drainage channels, ephemeral creeks, gilgais and clay pans. All of these can hold water for weeks to many months after a very modest rain' (30).

'If you make the effort to observe the behaviour of kangaroos in the arid rangelands, as I have done for over 29 years, they will show that any water source, no matter how small and fetid, is acceptable and usable' (30).

He believes that not all their water requirements are met by drinking water, and:

'Water taken in with plant matter and created with oxidation of foodstuffs both add to the water budget' (30).

Croft also refers to a statement by John Calaby who once supported the interpretation that red kangaroos have increased since white settlement:

'Red Kangaroos are not nearly so abundant as is generally thought and that they are subject to great and sudden decline in numbers due both to overshooting and to drought; where both occur together there seems to be a very real chance that the species could be reduced to a level from which it cannot recover' (37).

Dr John Auty in his paper 'Red Plague Grey Plague' also challenges the myth that there are more kangaroos now than before European settlement and refers to a multitude of historical records and documents:

'At first white settlement, kangaroos were widely distributed in large numbers'.

In regard to the argument that with the reduction of dingoes, kangaroos have fewer predators:

'The CI Dingo was a poor predator on kangaroos and for this reason was not used by Aborigines in hunting them.'

And to conclude:

'The numbers of kangaroos present in Australia at the time of first European settlement can be estimated on the basis of the number of introduced herbivores supported on unimproved pasture and browse. The population was probably of the order of one to two hundred million' (31). (One tenth of the current estimated population)



Photo by Stella Reid

In regard to the principles of the commercial utilisation of wildlife, in particular kangaroos, it is important to note that while the Commercial Kangaroo Industry has been *estimated* to be worth \$200 million annually, there are few who benefit from these profits, while the Australian community loses its most valuable environmental and tourist icon. Tourism is worth over \$85 billion dollars annually to Australia, and with our native wildlife being one of the main attractions for international tourists, kangaroos are worth more to us alive than dead.

According to a recent survey, the kangaroo is the second most recognized symbol in the world, second only to the Statue of Liberty. As part of the same survey, international tourists were polled at Sydney Airport, and it was found that half the international tourists wanted to see kangaroos or other wildlife as part of their visit. One quarter reported that they had not seen the kangaroos they wanted to see during their visit. (32)

The kangaroo industry and the Australian government is decimating our tourist icon for just \$1 per kilo, and around \$6 for its skin. Tourism is worth more than four hundred times the value of the industry that is decimating one of Australia's most signficant tourist attractions.

David Croft (UNSW, 2005) wrote in regard to kangaroos and tourism:

'Thus at times of good and frequent rainfall there will be a build up of the population just like the bounty of the ephemeral plants that they eat. We should marvel at this great wildlife spectacle and carry planeloads of tourists to the Outback just like those few occasions when the Lake Eyre basin fills with water and waterfowl. There is no greater sight than red backs bent into a sea of wildflowers with the young leaping and finding their full hopping stride as they cavort around their mothers. If it were the Adoni plain of Etosha National Park or the Auob River of the Kgalagadi Transfrontier Park of Southern Africa and the sprinbok calves were pronking, it would be a wildlife spectacle. In Australia it's just a plague of bloody kangaroos' (38).



In light of current statistics and dire forecasts, it is clear that the kangaroo industry is unsustainable, with the industry now reduced to killing kangaroos barely of breeding age, at a rate faster than they can breed. If we were to refer only to the scientific information within this document, we could safely say that the kangaroo industry is in decline, taking our precious national symbol down with it, and destroying one of our main assets and, most profitable industries, the Australian Tourism Industry.



Photo by Stella Reid

SUMMARY

Since 1980, 73 million kangaroos have been killed by the kangaroo industry and turned into pet food and sports shoes. Around 14 million pouch joeys have been bashed to death or decapitated, and 7 million young at-foot joeys have been orphaned, and left to die a slow and lonely death from stress, starvation and exposure. This combined with years of intense drought, floods and bush fires, has seen Red Kangaroos, Western Grey Kangaroos, Eastern Grey Kangaroos, Wallaroos and Euros plummet to densities of less than five per square kilometre ('quasi extinct') across most of Queensland, New South Wales and South Australia. These species are now at risk of extinction in these states, and if the commercial industry is allowed to continue, scientific forecasts predict mass extinctions of Red, Western and Eastern Grey Kangaroo, Wallaroos and Euros, across most of New South Wales, Queensland and South Australia.

We therefore make an urgent request, that the Australian Government impose an immediate moratorium on the commercial and non-commercial slaughter of kangaroos across New South Wales, South Australia and Queensland, until such time as the results of a full independent enquiry into kangaroo populations are presented to the Australian parliament. For the sake of our country, for the sake of our environment, for the sake of our economy and tourism industry, for the sake of our reputation, and for the sake of our icon, now, more than ever before, it's time to stop killing kangaroos.



REFERENCES

- 1. Hacker. R, McLeod. S, Drunan. J, Tenhumberg. B, Prahan. U, (2004), <u>Kangaroo Options in the Murray Darling Basin</u>, Murray Darling Commission, NSW Agriculture, Canberra, ACT, p.62, http://publication.mdbc.gov.au/product.info.php?products id=48
- 2. Hacker et al, (2004), p.51.
- 3. Hacker et al, (2004), p.47.
- 4. McLeod. S, (UNSW), (2005), <u>Kangaroo Myths and Realities</u>, Australian Wildlife Protection Council, Melbourne, Victoria, Australia, p.104.
- 5. Rowe.S, (2005), <u>Kangaroo Myths and Realities</u>, Australian Wildlife Protection Council, Melbourne, Victoria, Australia, p.104.
- 6. Thomsen. Dana, (2008), Ecologist Kangaroo Management, Dept Environment and Heritage (South Australia's kangaroo populations and 'harvest' statistical data).
- 7. Lundiejenkins.G, (2008), <u>Raw Data</u>, Queensland Environment Protection Agency Macropod Management Unit.
- 8. Payne. N, (2007), <u>2008 Kangaroo Quota Report New South Wales</u>, NSW Department Environment and Conservation, North West Branch. <u>www.environment.nsw.gv.au/resources/nature/2008KangarooQuota.pdf</u>
- 9. Hacker et al, (2004), p.57.
- 10. Hacker et al, (2004), p.63.
- 11. Olsen. P, and Low. T, (2006), <u>Update on Current State of Scientific Knowledge on Kangaroos in the Environment, including Ecological and Economic Impact and Effect of Culling</u>, School of Botany and Zoology, Australia National University, Canberra, ACT, p.7.
- 12. Beeton. R.J.S, Buckley. K, Jones. G, Morgan. D, Reicht. R.E, Trewin.D, (2006) <u>Australian State of the Environment 2006</u>, Independent Report to the Australian Minister for Environment and Heritage, 2006 Australian State of the Environment Committee. <u>www.environment.gov.au/soe/2006/publications/report/index.html</u>
- 13. Wildlife Protection Association of Australia, (2007) <u>Administrative Appeals Tribunal of Australia, General Administrative Division, NSW District Registry, No. 535 of 2007, Submissions for the Applicant, p.62.</u>

- 14. AAT, No.N535 of 2007, p.51.
- 15. AAT, No.N535 of 2007, p.62.
- 16. AAT, No.N535 of 2007, p.43.
- 17. Environment Protection and Biodiversity Act 1999, Part 13A, www.environment.gov.au/epbc/index.html
- 18. AAT, No. 535N of 2007, p.59.
- 19. AAT, No.535N, p.59.
- 20. AAT, No.535 of 2007, p.70.
- 21. Olsen.P, and Low.T, (2006), <u>Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological and Economic Impact and Effect of Culling</u>, School of Botany and Zoology, Australia National University, Canberra, ACT, p.9.
- 22. Grigg. G, (2002), In <u>Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological and Economic Impact ad Effect of Culling,</u> Canberra, ACT, p.69.
- 23. Beeton et al, (2006), Indicator LD0-20.
- 24. Croft. D, (2004), <u>The Future of Kangaroos</u>: <u>Going Going Gone?</u>, In 'Kangaroo Myths and Realities', Australan Wildlife Protection Council, Melbourne, Victoria, p.233.
- 25. Witte.I, (2002), AAT of NSW, No.N535 of 2007, p.71.
- 26. AAT, No 535N of 2007, p.71.
- 27.Olsen and Brayshaw, (2003), In <u>Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological and Economic Impact ad Effect of Culling</u>, School of Botany and Zoology, Australia National University, Canberra, ACT, p.69.
- 28. Ramp D. and Roger E, (2002), <u>Our 'Common' Wildlife May be our Next 'Sleeping' Threatened Species</u>, In 'A Voice for Wildlife': Newsletter of the Australian Wildlife Protection Council, p.1.
- 29. Croft. D, (2005), <u>The Future of Kangaroos: Going, Going, Gone?</u>, In 'Kangaroo Myths and Realities', Australian Wildlife Protection Council, Melbourne, Australia, p. 234.

- 30. Croft D, (2005), <u>The Future of Kangaroos: Going, Going, Gone?</u>, In Kangaroo Myths and Realities, p.238.
- 31. Auty. J, (2005), <u>Red Plague Grey Plague</u>, <u>Kangaroo Myths and Legends</u>, In Kangaroo Myths and Realities, Australian Wildlife Protection Council, Melbourne, Victoria, p.62.
- 32. O'Brien. P, (2005), <u>Kangaroos, Our Gentle Aussie Icons</u>, Wildlife Protection Association Australia, Beerwah, Queensland, Australia, p.21.
- 33. Williams.T, 2008, Canberra, ACT.
- 34. Drummond.M, 2008, <u>Eastern Grey Kangaroo Populations Estimated for the period 2001-2020</u>, Canberra, ACT.
- 35. Witte.I, University New South Wales, (2005), <u>Kangaroo Myths and Realitites</u>, Australian Wildlife Protection Council, Melbourne, Victoria, p.207.
- 36. Croft.D, (2005), <u>The Future of Kangaroos: Going, Going, Gone?</u>, In Kangaroo Myths and Realities, p.236.
- 37. Frith & Callaby, (1969), <u>The Future of Kangaroos: Going, Going, Gone?</u>, In Kangaroos Myths and Realities, p.237.
- 38. Croft.D, (2005), <u>The Future of Kangaroos: Going, Going, Gone?</u>, In Kangaroo Myths and Realities, p.241.