



Department of
Primary Industries

Volunteer Non-Commercial Kangaroo Shooters

BEST PRACTICE GUIDE



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Volunteer Non-Commercial Kangaroo Shooters: Best Practice Guide

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More information

NSW DPI Hunting

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www.dpi.nsw.gov.au/hunting

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INTRODUCTION

In June 2018, the NSW Government announced a drought relief package to assist regional communities and farmers affected by persistent drought conditions. The package included changes to non-commercial kangaroo management that seeks to reduce the negative impacts of kangaroos, particularly in areas of drought.

Many farmers have long-standing relationships with volunteer shooters, who assist them to reduce the number and impacts of problem wildlife like feral pigs, rabbits, foxes, wild deer and native ducks. The changes to non-commercial kangaroo management allow for volunteer shooters to further extend this valuable assistance to drought-affected farmers impacted by kangaroos.

The non-commercial culling of kangaroos in NSW is administered by the NSW National Parks and Wildlife Service (NPWS), part of the Environment, Energy and Science (EES) directorate of the Department of Planning, Industry and Environment. This agency is responsible for landholder licensing, property allocations, record keeping and regulatory compliance with licence provisions. The non-commercial culling of kangaroos is administered through licences to harm issued to landholders, which is a requirement under the *Biodiversity Conservation Act*. Licences to harm are only issued after non-lethal methods are deemed to have not addressed the issue. For more information, go to www.environment.nsw.gov.au/licences-and-permits/wildlife-licences/licences-to-control-or-harm/licences-to-harm-kangaroos.

NSW Local Land Services (LLS) also has a range of information and landholder support tools to assist with the management of kangaroos. This includes registers of commercial operators, professional shooters and volunteer shooters for each of the 11 LLS Regions around NSW. For more information, including how to sign up for the volunteer shooter register for each LLS Region, go to www.lls.nsw.gov.au.

This guide has been developed by NSW Department of Primary Industries (DPI) Game Licensing Unit (GLU) to inform and educate volunteer shooters about the best practice methods for safe, responsible and ethical culling of kangaroo populations for non-commercial purposes. GLU is the hunting regulator in NSW and assists the greater NSW community to ensure that the hunting and shooting of both introduced and native wildlife is conducted safely and ethically through education and awareness programs and compliance and enforcement activities. For more information on licensed hunting in NSW go to www.dpi.nsw.gov.au/hunting.

The information in this guide is consistent with the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-Commercial Purposes*, as well as best practice information on firearms safety, food safety and disease identification. The code can be accessed here: www.environment.gov.au/biodiversity/wildlife-trade/publications/national-code-practice-humane-shooting-kangaroos-and-wallabies-non-commercial

It should be read and understood by all volunteer shooters in NSW who cull kangaroos for non-commercial purposes.



HOW CAN VOLUNTEER SHOOTERS ASSIST?

In 2018 the NSW government streamlined non-commercial kangaroo management to provide drought alleviation for landholders impacted by large kangaroo populations. These changes included:

- a. Standardising the number of kangaroos that may be culled, based on property size.
- b. Allowing for licence application over the phone or via email.
- c. Allowing more shooters to operate under each licence, and for shooter details to be provided to NSW National Park and Wildlife Service after culling operations have taken place, rather than with the licence application.
- d. Removal of requirement for carcass tags and 'shoot and let lie' licence condition to reduce biosecurity risks.
- e. Allowing landholders and shooters to use carcasses for non-commercial purposes.

Kangaroos are a readily recognisable and iconic wildlife species that, when over abundant, can impact on agricultural enterprises, particularly during drought. They form the basis of an important commercial industry and are also an important species for indigenous communities through significant cultural connections established over a long period of time.

Shooters involved in the non-commercial culling of kangaroos must ensure they can safely and humanely dispatch kangaroos under field conditions. This includes having:

- An exemplary understanding and practical knowledge of firearms safety during both daytime and night-time conditions.
- A high level of marksmanship with a suitable calibre firearm and cartridge combination.
- An intimate understanding of the head kill zones on kangaroos and the skill to achieve an instantaneous kill each and every time.
- A willingness to dispatch pouch young using humane and best practice methods.
- A strong ethical disposition that ensures kangaroos are treated with dignity and respect at all times.

If volunteer shooters cannot confidently display these attributes, they should not participate in the non-commercial culling of kangaroos until they can.

Volunteer shooters should also be mindful of potential commercial kangaroo harvesting operations either on properties they access or those adjacent. Non-commercial kangaroo culling should only be considered where a viable commercial operator cannot be sourced to remove kangaroos. Non-commercial kangaroo culling is intended to augment commercial operator efforts, where kangaroos are causing unacceptable impacts. It should never be used to compete with or disrupt commercial kangaroo harvesting activities.

KANGAROO ECOLOGY AND POPULATIONS

Kangaroos and wallabies are marsupials that belong to a group of animals called macropods. There are 50 species of macropod that are endemic to Australia and Papua New Guinea.

Volunteer shooters may only participate in the management of the four abundant species of kangaroo that are harvestable in NSW: the red kangaroo, eastern grey kangaroo, western grey kangaroo and the common wallaroo. In commercial zones, where harvesting of certain species has been suspended due to declining kangaroo numbers, permits will not be automatically granted. Landholders may still apply for licences to mitigate damage or impact, but they will be subject to case by case assessment.

Other macropod species (e.g., swamp and red-necked wallabies) can be culled non-commercially but are also subject to landholder licences to harm, which are assessed on a case by case basis.

Threatened species cannot be harmed under a kangaroo/landholder licence.

Populations of red kangaroo and western grey kangaroo are commonly found in the grazing pasture regions of western NSW, while the eastern grey kangaroo and common wallaroo have a greater distribution between the inland plains and coastal regions of NSW.

Red kangaroos are the most mobile of the four species and have a greater home range than the eastern grey and western grey kangaroo. This is due to their habitat, which is restricted to the inland and arid regions of Australia that see limited and sporadic rainfall.

Kangaroos are extremely drought tolerant and have significantly lower energy and water requirements compared to domestic livestock. They prefer to feed on green pasture including grasses and flowering plants. When food becomes scarce, kangaroos will eat woody flowering plants and shrubs and in some areas they will even browse larger shrubs and dig up the roots of grasses and shrubs.

All four species have a similar but unique reproductive cycle. Kangaroos breed throughout the year with females coming into cycle every 35 days. The gestation period lasts for approximately 36 days, after which a newborn foetus, weighing less than one gram, climbs from its mothers genitalia to her pouch. The underdeveloped joey, having no hind legs, makes the journey to the pouch by using its front paws. Once in the pouch, it attaches itself to one of the four teats.

Female kangaroos can produce two distinct types of milk which can sustain two offspring of different ages. When the pouch young reaches four months of age, females can mate again. The fertilised egg develops but does not mature until the joey leaves the pouch. Joeys leave the pouch at 11 months of age but continue suckling until they become fully independent at 18 months.

More specific information on kangaroo ecology and management can be obtained from: **Hacker, R and McLeod, S (2003) *Living with kangaroos: A guide to kangaroos and their management in the Murray-Darling Basin*. NSW Agriculture.**

Target species

Four species of kangaroo (red, eastern grey, western grey and the common wallaroo) can be culled non-commercially in NSW on properties under a licence to harm kangaroos. The culling of any other kangaroo species is only permitted under a separate landholder licence.

It is important that volunteer shooters are able to correctly identify these species.

Red kangaroo

The red kangaroo (*Macropus rufus*) is the largest of the kangaroo family, standing up to 1.4 metres tall and having a tail up to one metre in length. Males tend to be orange/red in colour while females are most commonly a blue/grey colour. Both have a pale cream-coloured underbelly that extends up the throat.

Red kangaroos are easily identified by the broad white stripe that begins at the corner of the mouth extending up to the ear. They also have distinct black and white facial markings.

Males can weigh as much as 90 kg which is double the weight of the smaller females that generally weigh up to 40 kg.



Eastern grey kangaroo

The eastern grey kangaroo (*Macropus giganteus*) is a very large kangaroo, standing up to 1.3 metres tall and having a long black tipped tail up to 1.1 metres in length. Both males and females have a woolly, evenly coloured blue/grey coat with a pale grey underbelly. Eastern greys also have an almost white facial colouration.

Males can weigh in excess of 85 kg while females can weigh as much as 40 kg.



Western grey kangaroo

Western grey kangaroos (*Macropus fuliginosus*) vary in colour from a light brown to a reddish brown with a pale grey throat, chest and abdomen. Their facial fur is distinctly different from any other species by the coverage of much finer grey coloured fur.

Males can weigh in excess of 85 kg, stand almost 1.3 metres tall and have a long tail (almost one metre long).



Common wallaroo

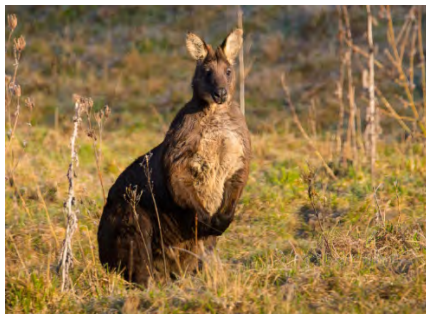
The common wallaroo (*Macropus robustus*), also known as the hill kangaroo, has four distinct subspecies that can be found across Australia. Only two of these subspecies live in NSW: the eastern wallaroo (*M. r. robustus*) and the euro wallaroo (*M. r. erubescens*).

The wallaroo is a compact and stocky kangaroo with a coarse woolly coat. They have a very short hairless muzzle, thick tail and a unique upright hopping style. Wallaroos have shorter legs than other kangaroos and also have much broader hind feet allowing them to grip better as they move about their rocky habitat.

Colours vary from reddish brown to almost black. Like most other kangaroos, they have a lighter underbelly.

Wallaroos have no distinguishable facial markings although they do have shorter and more rounded ears than their close cousins.

Males can weigh up to 50 kg while females grow to a weight of 25 kg.



Non target species

Of the 50 known species of macropod in Australia, only 15 species are found in NSW. A number of species of kangaroo and wallaby are listed as threatened in NSW, with the smaller ground dwelling species subject to high predation from introduced predators.

It is important to know how to identify these protected species as they can sometimes inhabit the same areas as target species.

Shooting of the following species, or any other macropod species not listed, is strictly prohibited under a licence to harm kangaroos and may result in the loss of firearms, heavy fines and legal action. The shooting of any other kangaroo species is only permitted under a separate landholder licence.

- Black-striped wallaby
- Parma wallaby
- Red-necked wallaby
- Swamp wallaby
- Whiptail wallaby
- Brush-tailed rock wallaby
- Yellow-footed rock wallaby
- Red-legged pademelon
- Red-necked pademelon
- Rufous bettong
- Long-nosed potoroo

Volunteer shooters are encouraged to familiarise themselves with these species by consulting reference books such as:

Menkhorst, P and Knight, F (2001) *A Field Guide to the Mammals of Australia*. Oxford University Press Australia.

Sex identification

The four kangaroo species that can be culled non-commercially in NSW display sexual dimorphism, meaning that males and females differ in appearance. Mature males are easily identified, being much larger than females and having a highly developed chest and forearm muscles.

However, appearance alone is not a reliable way of identifying sex. To be absolutely sure that you are looking at a male or a female kangaroo, you must check the abdomen. Females have a pouch opening and males have a scrotum.

Kangaroo sex identification: (*males are the larger specimen in each image*).



Eastern grey kangaroo



Red kangaroo



Western grey kangaroo



Common wallaroo

BEST PRACTICE KANGAROO SHOOTING BY VOLUNTEER SHOOTERS

Responsibilities of Volunteer Shooters

Volunteer shooters have the potential to provide an important service to public land managers, private landholders and the general community by safely and humanely removing problem wildlife species. Often this service includes culling both introduced and native species.

It is important to distinguish the efforts of volunteer shooters from shooters and hunters that are undertaking recreational or cultural hunting and shooting. Volunteer shooters are there to assist land managers and landholders and any ancillary benefits to volunteer shooters, like spending time in the outdoors or obtaining meat, should be secondary motivations.

The use of firearms and the humane shooting of wildlife species requires volunteer shooters to display the most exemplary of conduct regarding all aspects of legal, safe, humane and ethical shooting.

Legislative requirements

Biodiversity conservation

The non-commercial culling of kangaroos in NSW is regulated under the *Biodiversity Conservation Act*. Recent changes have removed the requirement for shooters to obtain a separate licence to the landholder. Volunteer shooters must comply with five main requirements under the *Biodiversity Conservation Act* in order to legally cull kangaroos in NSW non-commercially. These are:

- Volunteer shooters must have a current firearms licence endorsed for an appropriate genuine reason and firearms category issued by an Australian State or Territory.
- Volunteer shooters must carry their firearms licence on their person and shooting must comply with the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-Commercial Purposes*.
- Culling can only take place on a property where the landholder has been licensed to cull kangaroos non-commercially by the NSW National Parks and Wildlife Service.
- Culling must be within the approved limits imposed on the landholders licence.
- The number and species culled on each property must be reported after each shoot to the landholder who is licensed. Your name, date of birth and firearms licence details must also be provided to the landholder, who will submit these and your licence returns to the NSW National Parks and Wildlife Service.

Firearms

Volunteer shooters must ensure they have a current firearms licence endorsed by an Australian State or Territory, with a suitable genuine reason.

The following genuine reasons are considered appropriate:

- Rural occupation.
- Vertebrate pest animal control.
- Recreational hunting and vermin control .
- Business or employment.

NSW legislation restricts the use of firearms to Category A and B for the humane shooting of kangaroos and wallabies for non-commercial purposes. Volunteer shooters should ensure that they are endorsed for an appropriate category of firearm on their firearms licence.

Table 1: Firearms categories for non-commercial kangaroo culling in NSW

Category	Firearms
Category A Note: only rimfire rifles and shotguns are considered appropriate in this category.	- Air rifles - Rimfire rifles (other than self-loading) - Shotguns (other than pump action, lever action or self-loading) - Shotgun/rimfire combinations.
Category B Note: Muzzle loading firearms are deemed to not be suitable for the humane culling of kangaroos for non-commercial purposes	- Centre-fire rifles (other than self-loading) - Shotgun/centre-fire rifle combinations - Lever action shotguns with a magazine capacity of no more than 5 rounds

For more information on firearms licence genuine reasons, licensing and firearms categories in NSW, visit www.police.nsw.gov.au/online_services/firearms. Firearms licence holders from other states or territories should contact their state or territory agency.

Animal Welfare

In NSW the *Prevention of Cruelty to Animals Act 1979* (POCTA) allows for hunting and shooting in a manner that inflicts no unnecessary pain on the animal. If this requirement is not met then hunters may be in breach of POCTA. Cruelty penalties in POCTA can attract a fine of \$22,000, imprisonment for two years, or both. Alternatively, serious intentional or reckless animal cruelty can be charged under the *Crimes Act 1900*, attracting an imprisonment term of three or five years.

Permission to enter property

Before entering any property, volunteer shooters must have permission from the landowner or manager.

In NSW the *Firearms Act*, *Inclosed Lands Protection Act*, *Game and Feral Animal Control Act* and *Summary Offences Act* all contain offences for individuals entering private and public lands for the purposes of hunting and shooting without permission. Significant fines, the confiscation of shooting equipment and vehicles and court action may be brought against individuals caught entering lands unlawfully.

Biosecurity

In NSW the *Biosecurity Act* sets appropriate restrictions on the transportation of biosecurity matter. This can include animals, plants, diseases, soil and other biological

matter. Some properties have restrictions on what can enter based on the provisions of the *Biosecurity Act*. Volunteer shooters should discuss any specific biosecurity restrictions with landholders before they enter their properties.

Game hunting

In NSW the hunting of introduced animals on declared public land under the *Game and Feral Animal Control Act 2002* requires hunters to have a game hunting licence. The hunting of native game bird and deer species on private land also requires a game hunting licence. Licence exemptions exist for a range of individuals, like landholders hunting on their properties. For more information on game hunting licence requirements visit www.dpi.nsw.gov.au/hunting.

Note: *A game hunting licence is not required for the non-commercial shooting of kangaroos on private property in NSW. The shooting of any kangaroo species on public land in NSW is strictly prohibited.*

Property quotas and allocations

The new measures will give landholders an individual property allocation, similar to a quota, which sets out the number of kangaroos that may be taken by volunteer shooters non-commercially on that land. These property allocations will in no way affect the annual commercial harvest quotas. Volunteer shooters should consult landholders about their property allocation and the number and species of kangaroo that can be culled under their licence.

Property allocations will be assessed on a case by case basis and take into account the property size. They will also be reviewed on a monthly and annual basis to ensure an ecologically sustainable population. For more information on the licence allocations, visit the EES website: www.environment.gov.au.

The importance of licence returns

The sustainability of any activity using a natural resource must be closely monitored in order to maintain an ecological balance.

Commercial harvesters and landholders must record the number of kangaroos taken and submit a return as part of their licence conditions. Volunteer shooters participating under the initiative must provide the landholder with an accurate record of the number and species of culled kangaroos at the completion of each shooting trip.

Landholders are required to include the following details about volunteer shooters on their licence return form:

- full name
- firearms licence number
- firearms licence category

Licence returns provide the NSW National Parks and Wildlife Service with vital data that helps monitor the culling of kangaroos against the property allocations. This information may also demonstrate the effectiveness of volunteer shooter efforts.

Get permission before entering properties

Access to hunting on private land is a privilege that must be taken seriously. When you receive permission to hunt, the landholder trusts that you will act in a legal, safe, ethical and responsible manner.

Always get permission before you undertake any volunteer shooting. It is illegal to hunt or shoot on any land without express authority from the landowner or manager. If caught, you may be prosecuted and your hunting equipment may be confiscated.

NSW Shut the Gate on Illegal Hunting campaign

The *Shut the Gate on Illegal Hunting* campaign gives hunters, landholders and local communities the tools to quickly and easily report illegal hunting incidents through Crime Stoppers, gathering the types of information that assist authorities to investigate illegal actions and plan targeted compliance programs.

To report illegal hunting, phone Crime Stoppers on 1800 333 000 or visit www.crimestoppers.com.au.

Remember; in an emergency always call 000.

For more information on how to *Shut the Gate on Illegal Hunting*, contact the Game Licensing Unit on 02 6363 7650, game.licensing@dpi.nsw.gov.au or visit www.dpi.nsw.gov.au/hunting.

Shut the gate on ILLEGAL HUNTING

To report illegal hunting call **Crime Stoppers** on **1800 333 000** or report it online at www.crimestoppers.com.au

For information on hunting regulations in NSW go to the DPI Game Licensing Unit homepage www.dpi.nsw.gov.au/hunting

000 EMERGENCY

CRIME STOPPERS 1800 333 000

NSW Department of Primary Industries

NSW Police Force

Shooting and hunting safety

Hunting accidents in NSW are not common; however the chance of an accident increases if shooters fail to follow the *GunSmart: 8 Fundamentals of Firearms Safety*.

A majority of hunting accidents happen when shooters forget to unload their firearms, not point their firearms in a safe direction at all times or behave in a careless manner.

Firearms must be unloaded when:

- a shot is not taken
- they are being transported between shooting areas
- storing them after use
- not using them, for example when handling firearms around the camp or home.

All shooting ranges in NSW require shooters to wear eye and ear protection while shooting. NSW DPI recommends this level of protection for volunteer shooters and hunters in the field.

Shooting glasses will protect your eyes from hot gases and burnt powder that may cause injury in the event of an ammunition malfunction.

Hearing loss is permanent yet preventable. Almost all firearms discharge is at a noise level that is damaging to your hearing; therefore hearing protection is recommended.

NSW DPI also encourages every hunter to wear an article of blaze orange on their upper body when they are out in the field. This will assist other shooters and landholders identify volunteer shooters on the property.

The non-commercial culling of kangaroos follows the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes*. The code sets out a practical and achievable standard of humane conduct and is the minimum standard required for persons shooting kangaroos and wallabies non-commercially. Volunteer shooters must follow the guidelines that can be found in the national code on the Federal Government Department of the Environment and Energy website: www.environment.gov.au/biodiversity/wildlife-trade/publications/national-code-practice-humane-shooting-kangaroos-and-wallabies-non-commercial

GunSmart: the NSW Firearms Safety Initiative

Do you know the 8 fundamentals of firearms safety? *Be safe, be GunSmart* and follow the fundamentals each and every time a firearm is handled.

1. Treat every firearm as though it is loaded.
2. Always point a firearm only when ready to fire.
3. Load a firearm only when ready to fire.
4. Identify your target beyond all doubt and what is beyond it.
5. Keep your finger off the trigger until you are ready to fire.
6. Never rely on the firearms safety mechanism.
7. Store and transport firearms and ammunition separately and safely.
8. Never handle or use firearms when under the influence of alcohol or drugs.

An informative YouTube video demonstrating the firearms safety fundamentals is available on the DPI Hunting YouTube channel.

Minimum standards for firearms and ammunition

The range of firearms and ammunition available to Australian hunters is extensive. The *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes* considers the following types of firearm and ammunition combinations suitable for the humane and ethical shooting of the four approved kangaroo species that can be culled non-commercially in NSW.

Centrefire and rimfire rifles

Centrefire rifles are specified for the shooting of all of the larger kangaroo species, with the exception of special circumstances where it might not be safe or practical to do so. Rimfire rifles are lower powered and do not have as long a range as centrefire rifles. In open areas, smaller kangaroo and wallaby species can be shot with either centrefire rifles or suitable rimfire rifle.

Table 2: Rifle calibre and ammunition specifications for kangaroos and wallabies shot for non-commercial purposes

(Source: Schedule 1, Part A of the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes*)

Species	Calibre of Firearm	Cartridge Size	Projectile (Soft or Hollow Point only)	Maximum Range
Kangaroos and large wallabies: Red kangaroo, Eastern grey kangaroo, Western grey kangaroo and wallaroo	0.224" or 5.69mm	.222R, .223, .22/250 or larger	50 grain or heavier	200m
	0.204" or 5.18mm	.204 Ruger	40 grain	200m
Small wallabies: Bennett's wallaby, Tasmanian Pademelon and other small wallabies	0.172" or 4.37mm	.17HMR	20 or 25 grain	70m
	0.172" or 4.37mm	.17R	20 or 25 grain	100m
	0.224" or 5.69mm	.22H	45 grain	80m
	0.224" or 5.69mm	.222R, .223, .22/250 or larger	50 grain or heavier	200m
	0.224" or 5.69mm	.22M	30 grain or heavier, hollow point only	80m
	0.224" or 5.69mm	.22LR	32 grain or heavier, hollow point only. Sub-sonic ammunition must not be used	50m

Table 3: Shotgun bore size and ammunition specifications for wallabies shot for non-commercial purposes

(Source: Schedule 1, Part B of the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes*)

Species	Bore Size	Gauge	Shot Load	Shot Size	Maximum Range
Bennett's wallaby	0.729", 0.670" and 0.615" bore	12, 16 and 20 Gauge	32 grain (1 1/8 oz.) or heavier, with a full choke	No. 2 or larger	30m
Tasmanian Pademelon and other small wallabies	(as above)	(as above)	(as above)	No. 4 or larger	30m

Specifications for firearms and ammunition for shooting of wounded or injured kangaroos and wallabies and dependent young-at-foot whose mother has been killed, and shooting in specific non-commercial circumstances where it might be unsafe to use firearms listed in Tables 2 and 3.

Table 4a: Rifle calibre and ammunition specifications

(Source: Schedule 1, Part C of the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes*)

Species	Calibre of Firearm	Cartridge Size	Projectile (Solid or Hollow Point only)	Maximum Range
Kangaroos and large wallabies: Red kangaroo, Eastern grey kangaroo, Western grey kangaroo and wallaroo	.172 or 4.37mm	.17HMR	17 or 20 grain	80m
	.224 or 5.69mm	.22M	30 grain or heavier, hollow point only	80m
	.172 or 4.37mm	.17R	20 or 25 grain	200m
	.224 or 5.69mm	.22H	45 grain	80m
	.224 or 5.69mm	22LR	32 grain or heavier. Sub-sonic ammunition must not be used.	Less than 30m

Table 4b: Shotgun bore size and ammunition specifications

(Source: Schedule 1, Part C of the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes*)

Species	Bore Size	Gauge	Shot Load	Shot Size	Maximum Range
Kangaroo and large wallabies	0.729", 0.670" and 0.615" bore	12, 16 and 20 Gauge	32 grain (1 1/8 oz.) or heavier, with full choke	No. 1, 2 or BB	Less than 20m

Species	Bore Size	Gauge	Shot Load	Shot Size	Maximum Range
Bennett's wallaby	(as above)	(as above)	(as above)	No.2 or larger	20m
Tasmanian Pademelon and other small wallabies	(as above)	(as above)	(as above)	No. 4 or larger	20m

Glossary

- .17HMR = .17 projectile developed for the .22 Magnum cartridge necked down (Rim-fire)
- .22H = .22 Hornet (Centre-fire)
- .22M = .22 Magnum (Rim-fire)
- .22LR = .22 Long Rifle (Rim-fire)
- .17R = .17 Remington (Centre-fire)

Shotguns

In all states and territories, the use of shotguns for the commercial shooting of kangaroos and wallabies is prohibited. In certain non-commercial circumstances where it is not safe or appropriate to use centrefire or rimfire rifles, shotguns may be used. Such circumstances may include:

- Euthanasing injured or sick kangaroos and wallabies.
- Euthanasing pouch young or young at foot at close range, or
- Shooting kangaroos and wallabies that present a health or safety risk to humans, in accordance with the relevant government authority.

The distance between the shooter and the target animal should be within the maximum range specified in Table 4 and the shot pattern should be centred on the brain or heart of the target animal. The shooter must be able to place a clear shot into one of these target areas whether the animal is moving or stationary. If this is not possible, the attempt must be abandoned.

Additional requirements:

- Self-loading or muzzle-loading firearms are not to be used.
- All rifle/shotgun and ammunition combinations must consistently deliver a swift and sudden death.
- A rifle must be fitted with a telescopic sight and be sighted in against an inanimate target before commencing each day or night's shooting. The telescopic sight should be re-adjusted on an inanimate target as often as required during each shooting session.
- Subsonic or reduced velocity ammunition must not be used.

Marksmanship

Marksmanship is the shooter's ability to consistently deliver an accurate shot at a target. Correct marksmanship and shooting techniques will ensure that all shots will deliver an instantaneous kill with no risk of wounding or suffering to the animal.



- Rifles must be sighted in each and every time the ammunition is changed, the rifle is cleaned or any type of maintenance work has been carried out.
- It is recommended that rifles are sighted in at an approved range before the commencement of any shooting.
- All rifle and ammunition combinations must be able to produce a five-shot grouping of less than one inch at 100 metres.
- All rifles must be fitted with a telescopic sight.
- Never attempt to take a shot if there is any doubt of making an instant kill.

Humane and ethical shooting of kangaroos

To ensure a humane and ethical shot, volunteer shooters must adhere to the following rules:

- All shots taken must be aimed at the head to destroy the brain of the target animal.
- When shooting with a rifle only shoot at stationary animals.
- When a shotgun is used, the target kangaroo must be within 20 metres and in a position where a clear shot can be fired at the brain or heart.
- Always have a safe backstop.
- Never shoot on very windy nights as this can sometimes affect the bullet's flight path.
- Ensure all rifle shots are taken within 200 metres.
- Be aware of any other animals around your target species before you take the shot.
- Never shoot from a moving vehicle or platform.
- Be certain that each kangaroo is dead before taking a shot at another animal.
- Immediately locate and kill all wounded kangaroos before attempting to shoot another animal.
- Shooters should avoid shooting female kangaroos and wallabies where it is obvious that they have pouch young or dependent young at foot.
- If a female kangaroo is shot then any dependent young at foot must be shot as soon as possible to avoid dispersal.
- Once a female kangaroo has been killed then its pouch must be thoroughly examined and any pouch young must be euthanased (see page 23).

- Never shoot kangaroos with the assistance of dogs as they can disturb the animals, may contaminate the carcass and contract or spread diseases.

Where to aim

Frontal method

Draw an imaginary line from the base of each ear to the opposite eye. Aim at the point of intersection.



Temporal method

Aim at the point between the base of the ear and the eye.



Poll method

Aim at the back of the head at a point midway between the base of each ear.



Rifle shooting tips

When shooting kangaroos in the field with a rifle, always follow these fundamental shooting tips:

- Using a steady rest will increase the accuracy of the shot from a rifle. When in the field, it could be a fence post, tree branch stump, or even your backpack.
- Focus the sight on the target animal and hold it.
- Take a deep breath and exhale about one third.
- Squeeze the trigger with a steady pressure. Jerking the trigger will pull the sights off target, which can cause the bullet to miss.
- After the shot is fired, continue to squeeze the trigger. If you lift your head or jerk the rifle, the shot may be thrown off-target by the movement of the rifle. This waiting period is called the follow through.

Night shooting safety

Spotlighting from a vehicle at night has associated risks that all volunteer shooters must be aware of. The DPI Game Licensing Unit recommends the following safety precautions:

- Notify the landholder of your intention to shoot kangaroos under spotlight.
- Know the hunting environment extremely well. During daylight hours, familiarise yourself with the hunting area before you begin to spotlight.
- Only spotlight in a group of no more than three people: a driver, a shooter and a spotlight operator.
- The shooter must always be in front of the spotlight operator.
- Spotlights and gun mounted lights must be bright enough to positively identify your target.
- Clearly identify your target and target species; do not shoot if you are unsure.
- Make sure the vehicle is not moving and has a firm, stable and safe rest to shoot from.
- Always have a safe backstop, do not shoot over a crest or a hill.
- Be extremely careful of ricochet when shooting across hard ground or water.
- It is good practice to fit a solid bipod to your rifle if you do not have an alternate and solid rest for your rifle.
- Always unload your firearm and ensure it is safe before collecting any culled kangaroos.
- Never fire at a pair of eyes or a reflection.
- Pay particular attention when shooting close to fences, boundaries, roads and tracks as non-target animals, vehicles or farm assets may be close by.

Never attempt to take a shot if there are any safety concerns.

Finding kangaroos on properties

The best source of information about where kangaroos inhabit a property both during the day and night is the landholder and/or workers on the property. Landholders may also be able to specify the exact areas where they would like kangaroos removed.

It is well recognised that the most efficient method of culling kangaroos should be undertaken at night and with the use of a spotlight. Kangaroos have very sharp eyesight and hunting them during daylight hours can be more difficult. However, volunteer shooters that hunt during the day can be more selective about the animals they choose to cull and it is safer to process a culled kangaroo during daylight.

Kangaroos are generally nocturnal, moving about and feeding at night. Kangaroos can also be encountered as they feed during the early hours of the morning and late in the afternoons. During the day, they will generally rest under the shade and shelter of large trees.

When shooting kangaroos in daylight hours, you must stalk and approach the animal undisturbed. Use the natural cover to conceal your movements. If you are spotted and the kangaroos begin to move off, you must abandon the hunt as you must never take a shot at a moving animal.



Etiquette when on properties

The following list is a guide for all volunteer shooters when they are invited onto a property to assist landholders cull kangaroos non-commercially.

1. Seek permission to hunt on private land by formal request. Visiting the landowner in person is friendlier and shows a stronger commitment than sending a mailed request and may increase your chances of getting permission.
2. On private land you have permission to hunt, always to be respectful of the property. The best rule of thumb is to leave the land better than you found it.

Report any signs of disturbance to the landowner, pick up rubbish if you see it, and leave no trace of your own. Pick up your empty cases and cartridges before you leave. Leave any gates exactly how you found them, open or closed. Do not shoot near or toward any homes. Even if the shot is too far away to be dangerous, the sound can be disruptive and discouraging to neighbouring landowners who may be considering whether to open their land to volunteer shooters.



3. Obtain a briefing from the landholder on any safety issues and their property allocation including each species and the number that can be culled.
4. Know the boundaries in which you have permission to hunt. Never shoot or chase kangaroo onto a property without explicit permission. Doing so is not only rude, it's illegal.
5. Do not dispose of unwanted animal parts (entrails or leftovers from butchering) in waterways or anywhere they are likely to be seen by passers-by. Make sure you ask the landholder how they would like you to dispose of carcasses and follow their advice explicitly.
6. If commercial kangaroo harvesters are operating on a property, talk to the landholder first as it may be best to access other properties.
7. If given permission to shoot on someone else's land, or in someone else's preferred shooting spot, don't assume that invitation extends to others. Explicitly ask the landowner or shooter if the permission is just for you, or if other people you know are welcome. If given permission to invite others, it's always polite to let them know how many people and to introduce them to the landholder at the earliest convenience.
8. Never interfere with stock or farm infrastructure on a property.
9. Serve as a positive ambassador for volunteer shooters to those who are unfamiliar with or undecided about shooting or hunting. Cover your culled kangaroos with a tarp and transport them discretely. Do not display your culled kangaroos in the back of your ute with the tailgate down. Be wary of how non-shooters perceive you.
10. Report any illegal hunting or other rural crime to the landholder and the NSW Police Force by phoning Crime Stoppers on 1800 333 000. You may even choose to assist the landholder by erecting some shut the gate on illegal hunting signs around the property (email cpi.orders@dpi.nsw.gov.au) or by installing remote cameras to help the landholder detect any illegal activity.

EUTHANASING INJURED KANGAROOS

Injured kangaroos and wallabies should be euthanased quickly and humanely to alleviate suffering. The following points should act as a guide to volunteer shooters:

- Injured animals must be killed by a method that will achieve a rapid and humane death, preferably by a shot to the brain.
- Under circumstances where a shot to the brain of an injured animal is impractical or unsafe, a shot to the heart is permissible.
- In circumstances where, for dispatch of an injured kangaroo or wallaby, a shot to either the brain or heart is impractical or unsafe (such as when the animal is moving but not able to stand), a heavy blow to the base of the skull with sufficient force to destroy the brain is permissible.
- To ensure a humane kill, a suitably hard and heavy blunt instrument must be used.
- If the kangaroo or wallaby that is shot is female then any dependent young at foot must be shot as soon as possible to avoid dispersal.
- Once a female kangaroo or wallaby has been killed then its pouch must be thoroughly examined and any pouch young must be euthanased.

HOW TO DISPATCH DEPENDANT YOUNG

The *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Non-commercial Purposes* clearly defines procedures for dispatching dependant young.

All culled kangaroos must be thoroughly checked for pouch young. If a pouch young or a dependant young is found, they must be euthanased as soon as possible. Euthanasia must be carried out using the methods below, which are best practice to prevent the inhumane death of young that cannot survive on their own.

Pouch young

Euthanasia must be carried out using a single, sharp and forceful blow to the head from a heavy blunt instrument. The blow must be sufficient to destroy all brain function. Volunteer shooters must confirm that the animal is dead by ensuring there is no body movement, breathing or heartbeat.



Dependant young at foot

Any dependant young at foot must be shot as soon as possible with a single shot to the brain or heart. All safety precautions must be observed when firing a rifle or shotgun at close range.

SAFE HANDLING OF WILD MEAT

Recent changes to non-commercial kangaroo management allows shooters, hunters and landholders to utilise the carcass of culled kangaroos. It is strictly prohibited for non-commercial shooters to sell, trade or swap any part of a culled kangaroo.

When handling any meat sourced from wildlife there are associated risks. Disease and parasitic infections commonly affect domestic and wild animals.

The chances of culling an animal with an obvious disease are generally very low and most animals encountered will look relatively healthy. However, animals will not always display visible signs of an infection.

Learning to identify common abnormalities and disease in animals is good practice and allows volunteer shooters to understand the risks around handling wild animals in the field and at home.

Before you select an animal to harvest, make sure it looks and behaves like a normal, healthy animal. Consider the following:

- Does the animal appear maimed or injured?
- Is it showing any signs of sickness?
- Does it look skinny or underweight?
- Can you see any wounds or signs of infection?
- Is the coat dull (not shiny)?
- Is it holding its head in an unusual position?

If any of these signs are evident, the volunteer shooter should simply cull these animals but not take meat from them.

Know the risks

There are three main risks that shooters face when taking meat from a culled kangaroo.

- 1. Bacterial contamination.** This occurs when meat is exposed to microorganisms from:
 - unclean hands
 - dirty equipment
 - gut contents (ingesta)
 - the animals skin
 - any external wounds or sores on the animal.
- 2. Physical contamination.** This may be caused by:
 - dirt
 - dust
 - fur
 - leaves
 - faeces
 - gut contents (ingesta).

3. Cross contamination. This is often over looked and is caused by:

- residue on hands
- cleaning products
- unclean hands
- agricultural chemicals
- carcasses being stored close together.

Field dressing

Hygienic dressing procedure should follow these three steps:

1. Shoot.
2. Bleed.
3. Field dress.

Field dressing safety tips:

- Be aware of your personal hygiene.
- Always make sure your field dressing equipment is clean and has been sanitised between each use.
- Wear disposable gloves when handling culled animals and replace when they become soiled.
- Always use a sharp knife and sharpen as needed.
- Keep carcasses clean and dry.
- When transporting animal carcasses, make sure the vehicle has been thoroughly sanitised.
- Make sure the carcasses are not in contact with each other and they have a sufficient flow of air.
- Where possible, meat should be hot skinned (skinned whilst the carcass is still warm).
- Meat should be placed clean in a suitable bag that is clean and free of any contaminants.
- Meat should be cooled as soon as possible in a clean esky with ice or ice bricks or in a fridge.
- For best results, meat should remain cooled and refrigerated for at least five days and either packed and frozen or consumed immediately after the five days.

Common diseases

In NSW, wild animals may be infected with zoonotic diseases that can be transferred to humans and their pets. There are two diseases of major concern and volunteer shooters must be aware of the risks associated with handling kangaroo carcasses.

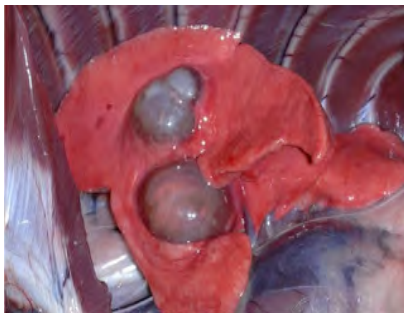
Q fever

Q fever is a bacterial infection that can cause severe flu-like symptoms and long-term illness.

Q fever is spread by breathing in airborne bacteria from infected animals that generally show no symptoms. The bacterium can survive in the environment for many years and are easily transferred to humans. It is recommended that all shooters, hunters and landholders receive a Q-fever vaccination before handling any animals.

Hydatid disease

Hydatid disease is caused by the hydatid tapeworm (*Echinococcus granulosus*) that primarily infects domestic dogs, wild dogs and dingoes. This disease can be easily transferred to livestock and other wildlife including kangaroos. Humans can also contract hydatid disease by accidentally swallowing hydatid eggs that have been excreted by infected animals, which can remain active in the environment for several months.



A hydatid tapeworm cyst in the lung of a kangaroo. Source: www.parasite.org.au

Protecting pets and family members

The best way to prevent your pets from contracting hydatid tapeworm is to stop them from eating offal, such as the liver, kidneys and lungs and to regularly treat them with a hydatid tapeworm specific medication.

You should never allow pets to lick or eat offal, blood and body fluids from wild animals. There is a high risk that your pet could contract a disease or ingest unacceptable levels of agricultural chemicals, including 1080 poison.

Never allow your pets to lick the face of humans and always ensure hands are washed after coming into contact with them.

Disposing of the carcass

Some landholders may request that you take away or dispose of any culled kangaroos. Carcasses left in the field are unsightly and can cause problems like attracting other feral animals to feed on the carcass and by spreading disease. Always seek the landholder's advice and follow their rules about disposal of kangaroo carcasses.

Dispose of the entrails in a way that will not offend others. Place them in a shallow depression and cover with leaves and soil, or in a plastic rubbish bag for later disposal. Never leave any animal remains along roads, rivers or where the people can easily find them.

KANGAROO SHOOTING CHECKLIST

It is good practice to use this checklist before you begin shooting, as well as during and after shooting.

TASK	CHECKED
Before shooting	
Licence details given to landholder and landholder permission sought and granted.	
Rifle sighted in with appropriate calibre and projectile combination.	
Shooting conditions suitable.	
Aware of the landholder's rules and their property allocation, including the number and species of kangaroos that can be culled and where the landholder would like you to cull.	
Checked the lay of the land and property boundaries.	
Know how to positively identify kangaroos species.	
During shooting	
Muzzle always pointed in a safe direction.	
Rifle unloaded until ready to shoot.	
Target positively identified before shot taken.	
Head shot aimed for to ensure a swift and humane kill.	
No doubts before shooting.	
Safe backstop identified for all shots.	
Culled animals confirmed dead before targeting the next animal.	
Pouch of culled female kangaroos thoroughly inspected for young.	
Young at foot dispatched humanely.	
Firearm unloaded as soon as shooting finished.	
Followed the <i>GunSmart: 8 fundamentals of firearms safety</i> .	
Followed the spotlighting safety tips.	
After shooting	
Rifle unloaded and made safe before storage.	
All culled animals recorded, species and number submitted to the landholder.	
Safe practices of handling wild animals followed.	
Entrails and/or carcass disposed of as per the landholders wishes	
Property left in the same condition as on arrival	



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For more information, visit
www.dpi.nsw.gov.au

