

Background

The introduced European rabbit (*Oryctolagus cuniculus*) has a significant impact on agricultural production and the environment. Rabbit control methods include poisoning, warren fumigation, warren and harbourage destruction, biological control with rabbit haemorrhagic disease virus (RHDV) and myxomatosis, shooting, trapping and exclusion fencing.

Shooting of rabbits is undertaken by government vertebrate pest control officers, landholders and professional or experienced amateur shooters. Although shooting may be useful when rabbit numbers are already low, it is labour intensive and is not effective as a general rabbit control method. Shooting is usually done at night with the aid of a spotlight, but can also be conducted during the day.

Shooting can be a humane method of destroying rabbits when it is carried out by experienced, skilled and responsible shooters; the animal can be clearly seen and is within range; and, the correct firearm, ammunition and shot placement is used.

This standard operating procedure (SOP) is a guide only; it does not replace or override the legislation that applies in the relevant State or Territory jurisdiction. The SOP should only be used subject to the applicable legal requirements (including OH&S) operating in the relevant jurisdiction.

Application

- Shooting should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control.
- Shooting is sometimes used as an adjunct to other control methods. However, it is not considered to be an effective or efficient rabbit population control technique.
- Shooting may have limited use in controlling light rabbit infestations, but it is ineffective in significantly reducing rabbit populations or even maintaining them at low levels.
- It is most suited to areas with little cover. Shooting should be concentrated in rabbit feeding areas, normally indicated by shortly cropped grass with rabbit scratchings and droppings.
- Ineffective shooting may produce rabbits that are 'shy' of both guns and spotlights; therefore several months should pass before any further shooting operations are undertaken.
- Shooting is not suitable in the vicinity of human habitation.
- Shooting of rabbits should only be performed by skilled operators who have the necessary experience with firearms and who hold the appropriate licences

and accreditation. Storage and transportation of firearms and ammunition must comply with relevant legislation requirements.

Animal Welfare Considerations

Impact on target animals

- Humaneness of shooting as a control technique depends almost entirely on the skill and judgement of the shooter. If properly carried out, it is one of the most humane methods of destroying rabbits. On the other hand, if inexpertly carried out, shooting can result in wounding which may cause considerable pain and suffering.
- Shooting must be conducted in a manner which aims to cause immediate insensibility and painless death. The appropriate firearms and ammunition must always be used.
- Shooters should not shoot at an animal unless it is clearly visible and they are confident of killing it with a single shot.
- Head (brain) or chest (heart-lung) shots must be used. Shooting at other parts of the body is unacceptable.
- The shooter must be certain that each animal is dead before another is targeted.
- Wounded rabbits must be located and dispatched as quickly and humanely as possible with a second shot preferably directed to the head. If left, wounded animals can suffer from the disabling effects of the injury, from sickness due to infection of the wound, and from pain created by the wound.
- If lactating rabbits are shot, reasonable efforts should be made to find dependent kittens and kill them quickly and humanely.

Impact on non-target animals

- Shooting is relatively target specific and does not usually impact on other species. However, there is a risk of injuring or killing non-target animals, including livestock, if shots are taken at movement, colour, shape, sound or, when spotlighting, eye reflection ('eye shine'). Only shoot at the target animal once it has been positively identified. Also, never shoot over the top of hills or ridges as other animals may be out of sight beyond the hill in the danger zone.
- Shooting should be used with caution around lambing paddocks as it may disturb the lambing flock and cause mismothering. Also avoid paddocks containing horses or deer. They are easily frightened by spotlights and gunshots and may injure themselves by running into fences and other obstacles.

Health and Safety Considerations

- Firearms are potentially hazardous. All people should stand well behind the shooter when an animal is being shot. The line of fire must be chosen to prevent accidents or injury from stray bullets or ricochets.
- Shooting from a vehicle is potentially dangerous. An agreed safety procedure between the shooter and others in the vehicle must be in place to ensure that people do not enter the field of fire or disturb the taking of a shot.
- Firearm users must strictly observe all relevant safety guidelines relating to firearm ownership, possession and use.

- Firearms must be securely stored in a compartment that meets State legal requirements. Ammunition must be stored in a locked container separate from firearms.
- Adequate hearing protection should be worn by the shooter and others in the immediate vicinity of the shooter. Repeated exposure to firearm noise can cause irreversible hearing damage.
- Safety glasses are recommended to protect eyes from gases, metal fragments and other particles.
- Warm, comfortable clothing and stout footwear is recommended, especially when shooting at night

Equipment Required

Firearms and ammunition

- For distances out to around 80 metres, small bore rifles fitted with a telescopic sight are recommended eg. .22 rimfire. Centre-fire rifles eg. .22 Hornet, .223 Rem, could be used in areas where long shots are required. Hollow-point or soft-nosed ammunition should be used.
- For a moving target at ranges less than 20 metres, a 12-gauge shotgun with shot sizes between No. 4 and No. 6 may be used. However, shotguns are not recommended for shooting rabbits because their noise level will drive nearby rabbits to cover.
- The accuracy and precision of firearms should be tested against inanimate targets prior to the commencement of any shooting operation.

Other equipment:

- If shooting at night, a handheld spotlight (at least 100 watt), or a helmet or headband mounted 12 volt (35 watt) spotlight
- First Aid kit
- Lockable firearm box
- Lockable ammunition box

Procedures

Shooting at night

- Most shooting of rabbits is done at night with the aid of a spotlight to locate them while they are feeding, or are away from cover. This method relies on the ability of the shooter to approach the animal until it is in shooting range.
- It is recommended that during daylight hours shooters familiarise themselves with the terrain they are to cover. Take note of potential hazards and also any landmarks that may help with navigation.
- Rabbits must NOT be shot from a moving vehicle or other moving platform as this can significantly detract from the shooters' accuracy. Ensure you are in a firm, safe and stable position before taking a shot.
- Shooting over the top of hills or ridges produces unacceptable risk. Be aware that the spotlight only illuminates a small portion of the danger zone and only a fraction of the projectile's range.
- When illuminated by the spotlight, rabbits have a pink/red eye shine.

Shooting in the day

- Rabbit activity is mainly nocturnal or crepuscular, so shooting during the day is less effective than shooting at night with a spotlight.
- If dogs are used to flush rabbits out from warrens or vegetation, they must be adequately controlled to prevent them from attacking rabbits. Dogs should only be trained to drive rabbits from cover, not to capture or attack them.
- Daylight drives not selective, so there is a risk of encountering other animals, including pet cats, which can be mistaken for a rabbit and shot. Also, if dogs are used, they may pursue and sometimes catch non-target animals. Capture of rabbits or non-target species by dogs is unacceptable on animal welfare grounds.

Target animal and point of aim

- The objective is to fire at the closest range practicable in order to reduce the risk of non-lethal wounding. Accuracy is important to achieve a humane death. One shot should ensure instantaneous loss of consciousness and rapid death without resumption of consciousness.
- A rabbit should only be shot at when:
 - It can be clearly seen and recognised;
 - It is within the effective range of the firearm and ammunition being used; and
 - A humane kill is probable. If in doubt, do NOT shoot.
- The shooter must aim either at the head, to destroy the major centres at the back of the brain near the spinal cord or, at the chest, to destroy the heart, lungs and great blood vessels. This can be achieved by one of the following methods (*see diagrams in Appendix*):

Head Shot (this is the preferred point of aim)

Frontal position (front view)

The firearm is aimed at the centre of the head between the eyes.

Temporal (side view)

The firearm is aimed at a point between the eye and the base of the ear directed towards the opposite eye.

Chest Shot

Side view

The firearm is aimed horizontally slightly to the rear of the shoulder.

- When using a rifle, the target animal must be stationary and within a range that permits accurate placement of the shot. Shots to the head are preferred over chest shots.
- When using a shotgun, the target animal may be stationary or mobile, but must be no more than 20 metres from the shooter. The pattern of shot should be centred on the head or chest. It is essential that the distance to the target animal is accurately judged. To achieve adequate penetration of shot, the animal must be in range. It is recommended that shooters practice estimating distances before a shooting operation.

- The target animal should be checked to ensure it is dead before moving on to the next animal. Death of shot animals should always be confirmed by observing the following:
 - Absence of rhythmic, respiratory movements;
 - Absence of eye protection reflex (corneal reflex) or 'blink';
 - A fixed, glazed expression in the eyes; and
 - Loss of colour in mucous membranes (become mottled and pale without refill after pressure is applied).

If death cannot be verified, a second shot to the head should be taken immediately.

Further Information

Contact the relevant Commonwealth, State or Territory government agency from the following list of websites:

Commonwealth	Department of Environment and Heritage http://www.deh.gov.au/
ACT	Environment ACT http://www.environment.act.gov.au/
NSW	NSW Agriculture www.agric.nsw.gov.au
NT	Parks & Wildlife Commission www.nt.gov.au/ipe/pwcnt/
QLD	Department of Natural Resources and Mines www.nrm.qld.gov.au
SA	Animal & Plant Control Commission http://sustainableresources.pir.sa.gov.au
TAS	Department of Primary Industries, Water & Environment www.dpiwe.tas.gov.au
VIC	Department of Primary Industries, Agriculture & Food www.dpi.vic.gov.au
WA	Agriculture WA www.agric.wa.gov.au

Disclaimer

The views and opinions expressed in this publication are those of the authors and do not necessarily reflect those of the Commonwealth and New South Wales Governments or the Commonwealth Minister for the Environment and Heritage and the New South Wales Minister for Primary Industries respectively. While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the Commonwealth and New South Wales do not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.



Natural Heritage Trust

Helping Communities Helping Australia

An Australian Government Initiative

References

- American Veterinary Medical Association (2001). 2000 Report of the AVMA Panel on Euthanasia. *Journal of the American Veterinary Medical Association* **218**, 669-696.
- Anon. (undated). Code of Practice for Lamping (Night Shooting). Document available electronically from British Association for Shooting and Conservation website:
http://www.basc.org.uk/upload/tplt_pri_style_.asp?page=2100002887
- Corbett, G. (undated). Effective night shooting to control rabbits. Document available electronically from Environment Bay of Plenty, NZ website:
<http://www.ebop.govt.nz/land/media/pdf/AP0498.pdf>
- Dobbie, W. (1997). Rabbit control in central Australia: A technical manual. Centralian Land Management Association, Alice Springs.
- Gregory, N. (2003). Assessing the humaneness of pest control methods. In: Solutions for achieving humane vertebrate pest control. Proceedings of the 2003 RSPCA Australia Scientific Seminar held at the Telstra Theatre, Australian War Memorial, Canberra 25 February, 2003. (Draft April, 2003). Royal Society for the Prevention of Cruelty to Animals Australia, Deakin West, ACT pp 65-84.
- Mawson, P. (1991). Ethics, animal welfare and operational guidelines for the humane shooting of pest animals. Agriculture Protection Board of Western Australia Infonote.
- Smith, G. (1999). *A guide to hunting and shooting in Australia*. Regency Publishing, South Australia.
- UFAW (1976). *Humane destruction of unwanted animals*. Universities Federation for Animal Welfare, Potters Bar, England.
- Williams, K., Parer, I., Coman, B., Burley, J. and Braysher, M. (1995). *Managing vertebrate pests: rabbits*. Australian Government Publishing Service, Canberra.

Recommended shot placements - Rabbit

Diagram 1

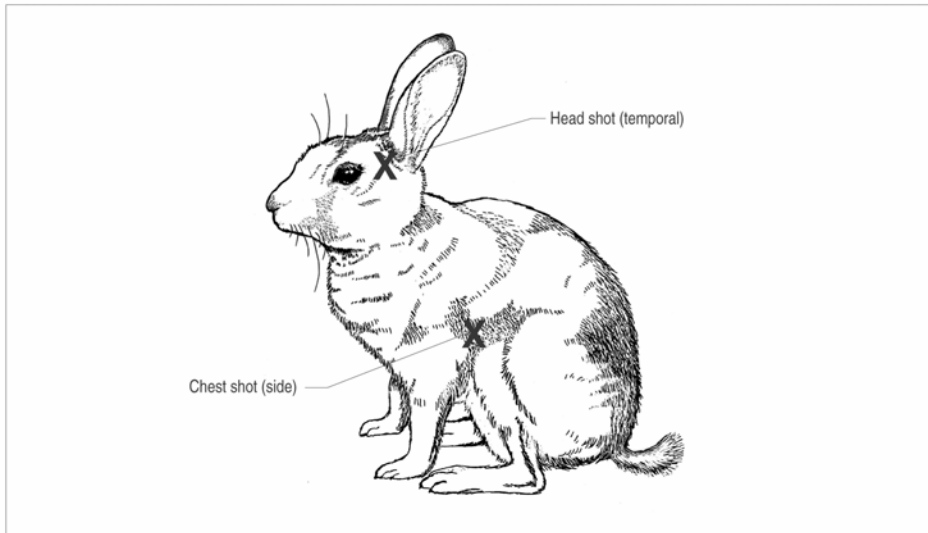


Diagram 2 - Side view (skeleton)

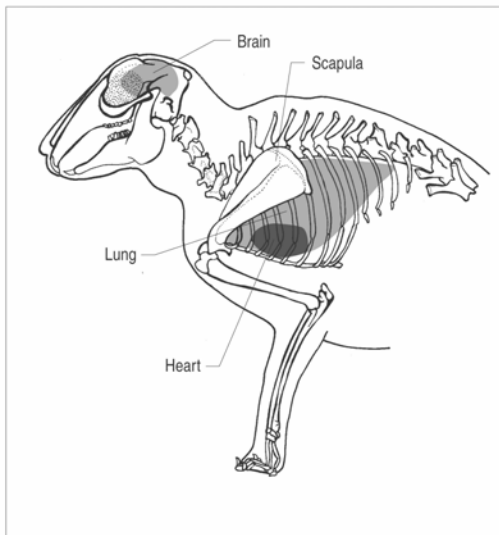


Diagram 3 - Head shot (frontal)

