



NSWCAT SOP1

Ground shooting of feral cats

Background

Shooting is one of the main methods of control currently used for feral cats, but it is labour intensive and not considered an effective broad-scale control method. It may be of use in reducing the local number of feral cats or targeting problem animals. Shooting is usually done at night from a vehicle with the aid of a spotlight or thermal detection device but can also be conducted during the day. Drives or 'battues', using a line of beaters often with trained dogs, are sometimes used to flush feral cats out from vegetation.

Shooting can be a humane method of destroying feral cats 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 relevant legislation that applies in NSW. The SOP should only be used subject to the applicable legal requirements (including WHS) operating in the relevant jurisdiction.

Individual Standard Operating Procedures should be read in conjunction with the overarching Code of Practice for that species to help ensure that the most appropriate control techniques are selected and that they are deployed in a strategic way, usually in combination with other control techniques, to achieve rapid and sustained reduction of pest animal populations and impacts.

Application

- Shooting should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control.
- Although shooting can result in a localised reduction in feral cat numbers, it is ineffective in significantly reducing feral cat populations, particularly over the longer-term. Feral cats generally avoid human contact making them difficult to shoot.
- Shooting is more successful in areas with flat topography and open vegetation. It is not as effective where dense cover exists and is not suitable in the vicinity of human habitation.
- Before shooting a cat, first establish that it is a feral cat, rather than a domestic pet or stray cat. Cats wearing collars should not be shot. It is recommended that landholders and neighbours be notified before commencement of a feral cat shooting operation so that they can take action to protect their domestic cats.
- Shooting of feral cats 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 (See *Firearms Act 1996*, *Firearms Regulation 2017*).

Animal welfare implications

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 feral cats. 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. A solid rest or support should be utilised to ensure accurate shot placement.
- Only head (brain) or chest (heart-lung) shots must be used. A well-placed shot to the head to destroy the brain will result in instantaneous insensibility and a quicker death compared to a well-placed shot to the chest. Chest shots to destroy the heart can present challenges for accurate placement and may not always result in rapid death. For this reason, under ideal conditions, head shots are preferred over chest shots, however in some situations (e.g., where close approach is not possible; the head is obstructed or cannot be targeted; the animal is already wounded; or a second 'follow-up' shot can be quickly taken), because the chest is a larger target, a chest shot may be the most suitable option. Shooting at other parts of the body is unacceptable.
- Correctly placed head shots cause brain function to cease and insensibility will be immediate. Death from a shot to the chest is due to massive tissue damage and haemorrhage from major blood vessels. Insensibility will occur sometime after, from a few seconds to a minute or more. If a shot stops the heart functioning, the animal will lose consciousness very rapidly.
- The shooter must be satisfied that each animal is dead before another is targeted.
- Wounded cats must be located and killed 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, from pain created by the wound or from thirst or starvation if unable to drink or capture food.
- To minimise the animal welfare implications of leaving dependent kittens to die a slow death from starvation, it is preferable not to undertake shooting when females are lactating e.g., September to March in non-urban habitats. There is a high probability that any female cat over six months old that is caught during this time will be pregnant or lactating.
- If lactating females are shot, reasonable efforts should be made to find dependent kittens and kill them quickly and humanely either by shooting (with a single shot to the brain) or manually applied concussive blow to the head. Litters may be found nearby, for example in the base of hollow tree trunks, among boulders etc.

Non-target animals

- Shooting is relatively target specific and does not usually impact on other species. However, there is always 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 and never shoot over the top of hills or ridges as other animals or people may be out of sight beyond the hill in the danger zone.

Workplace health and safety considerations

- Firearms are hazardous. Everyone 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.
- The shooter and others in the immediate vicinity should wear adequate hearing protection to prevent irreversible hearing damage, and safety glasses to protect eyes from gases, metal fragments and other particles.
- Warm, comfortable clothing and stout footwear is recommended, especially when shooting at night.
- Care must be taken when handling feral cat carcasses as they may carry diseases such as toxoplasmosis, ringworm and sarcosporidiosis that can affect humans and other animals. Routinely wash hands after handling all carcasses.

Equipment required

Firearms and ammunition

- Centrefire rifles are preferred since they provide the advantage of a flatter trajectory and higher projectile energy, however the .17HMR rimfire is also suitable as it delivers enough energy at the target for smaller animals, is flat shooting and accurate out to around 80 metres.

- The minimum firearm and ammunition requirements for the ground shooting of feral cats are:
 - o calibre: .172 inches
 - o bullet weight: 17 grain
 - o muzzle energy: 245 ft-lbs
- Examples of acceptable firearm and ammunition combinations with maximum shooting distances are included in the table below:

Cartridge	Bullet weight (gr)	Muzzle velocity (ft/sec)	Muzzle energy (ft-lbs)	Maximum distance (metres)
.17HMR	17	2550	245	80
.22 Hornet	45	2665	710	100
.222 Rem	50	3345	1242	200
.223	55	3240	1282	200
.22/250	55	3680	1654	200

Source: <https://press.hornady.com/assets/pcthumbs/tmp/1410995911-2019-Standard-Ballistics-Chart.pdf>

- Rifle bullets must be of an expanding type designed to deform in a predictable manner e.g., hollow point, soft-point, polymer tip.
- 12-gauge shotguns with heavy shot sizes of No. 2, SSG, BB or AAA can also be used at closer ranges, up to 20 metres from the target animal.
- 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, or a helmet or headband mounted spotlight
- Thermal scope or thermal detection device with 640 x 480 resolution and 50mm lens where possible
- First aid kit.
- Lockable firearm box.
- Lockable ammunition box.
- Personal protective equipment (hearing and eye protection).
- Communication devices (e.g., 2-way radio/ mobile phone/ satellite phone) are recommended for safety reasons.

Procedures

Identification of feral cats

- Feral cats, which survive with limited to no human contact or assistance, are the main target of control programs. Feral cats are unowned, unsocialised, have no relationship with or dependence on humans and reproduce in the wild. Feral cats are solitary and predominantly nocturnal, spending most of the day in the safety of a shelter such as a burrow, log or rock pile.
- Domestic cats may be quite docile and easily handled, but some will become anxious and distressed in cage traps and their behaviour will resemble that of feral cats unless they can be identified with a collar and tag.

Shooting at night

- Most shooting of feral cats is done at night from a vehicle with the aid of a spotlight or thermal device. This method relies on the ability of the shooter to approach the animal until it is within shooting range. Some shooters have had success luring feral cats into range using whistles that mimic rabbit distress calls.
- When illuminated by the spotlight, cats have a distinctive brilliant green eye reflection ('eye shine').
- Feral cats must NOT be shot from a moving vehicle. Ensure you are in a firm, safe and stable position before taking a shot.
- Spotlights and thermal devices should be used to identify hazards.
- 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.
- 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.

Shooting in the day

- Feral cats are most active at night, so shooting during the day is less effective than shooting at night with a spotlight or thermal device.
- Daylight drives or 'battues' may be effective. These involve the use of unarmed beaters, often with trained dogs, to drive feral cats either into a line of people waiting with firearms or up into trees where they are shot. This method requires the use of many people and only small areas can be covered.
- If dogs are used to flush feral cats out from vegetation and/or up into trees, they must be adequately controlled to prevent them from attacking cats. Dogs should only be trained to drive cats from cover, not to capture or attack them. For further information on the use of dogs refer to [GEN002 The care and management of dogs used for pest animal control](#).
- Daylight drives are not selective, so there is a risk of encountering other animals, including pet cats, which can be mistaken for a feral cat and shot. Also, if dogs are used,

they may pursue and sometimes catch non-target animals. Capture of feral cats or non-target species by dogs is unacceptable on animal welfare grounds.

Target animal and shot placement

- 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 feral cat 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
 - a humane kill is highly probable. If in doubt, do NOT shoot.
- The vital areas targeted for clean killing of a feral cat are small. Shooters should be highly skilled and experienced at shooting and be able to accurately judge distance, wind direction and speed and have a thorough knowledge of the firearm and ammunition being used.
- 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 shot placement)

Placement for head and chest shots are detailed below and in Figure 1.

Frontal position (front view)

- The firearm is aimed at the centre of the head slightly below a line drawn midway between the ears.

Temporal position (side view)

- Aim horizontally from the side of the head at a point midway between the eye and the base of the ear.

Chest Shot

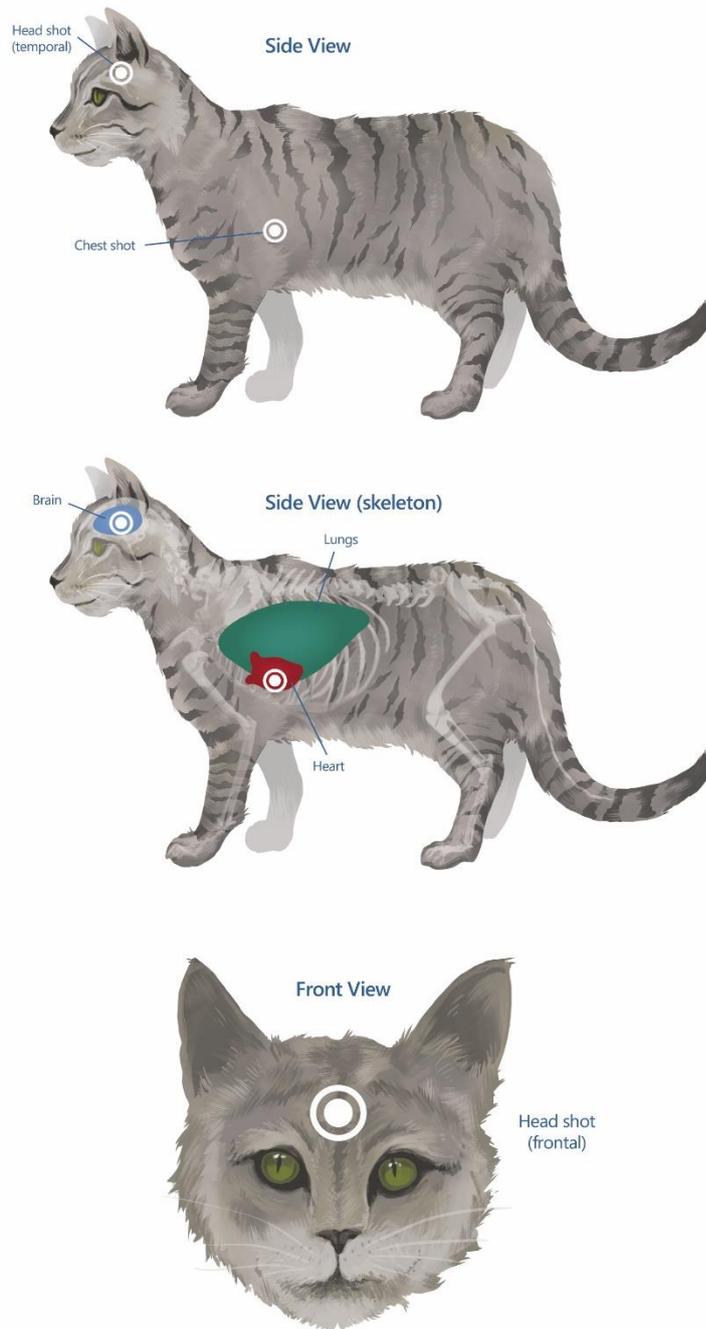
Side view

- The firearm is aimed horizontally at the centre of a line encircling the minimum girth of the animal, immediately behind the forelegs. The shot should be taken slightly to the rear of the shoulder blade (scapula). This angle is taken because the scapula provides partial protection of the heart from a direct side-on shot.
- 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. When targeting multiple cats in a group e.g., mother and sub-adult offspring, a number of animals will need to be shot in rapid succession. In this case, the animals in the group should be checked to ensure they are dead before moving on to the next group.
- Death of shot animals should always be confirmed by observing a combination of the following:
 - no heartbeat
 - no breathing
 - no corneal reflex (no blinking when eyeball is touched)
 - no response to a toe pinch (a firm squeeze of the pad or large toe).
- If death cannot be verified, a second shot to the head should be taken immediately.

Figure 1: Shot placement for feral cats



Note that shooting an animal from above or below the horizontal level as depicted here will influence the direction of the bullet through the body. Adjustment to the point of aim on the external surface of the body may need to be made to ensure that the angled bullet path causes extensive (and therefore fatal) damage to the main organs in the target areas.

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