

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

Endorsed by the Invasive Plants and Animals Committee 2016 with minor updates September 2017.

BACKGROUND

Feral cats prey upon a wide range of mammals, birds, reptiles, amphibians and insects. In some areas of Australia, especially many of the offshore islands, feral cats represent a significant threat to vulnerable and endangered native fauna. They may also have an indirect adverse impact on wildlife and livestock through the transmission of diseases such as toxoplasmosis and sarcosporidiosis.

A variety of control methods have been used including shooting, trapping, poison baiting and exclusion fencing.

Shooting is one of the main methods of control currently used 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, 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 National Standard Operating Procedure (NATSOP) is a guide only; it does not replace or override the legislation that applies in the relevant state or territory jurisdiction. The NATSOP 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.
- 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 suitable where dense cover exists or 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.

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 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.
- Only head (brain) or chest (heart-lung) shots must be used. Shots to the head are preferred over chest shots as they are more likely to cause instantaneous loss of consciousness. Chest

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

shots do not render the animals instantaneously insensible and are likely to result in a higher incidence of wounding. Shooting at other parts of the body is unacceptable.

- 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 dependant kittens to die a slow death from starvation, it is preferable not to undertake shooting when females are lactating eg 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, efforts should be made to find dependent kittens and kill them quickly and humanely. Litters may be found near to the trap site in the base of hollow tree trunks, among boulders etc.

Impact on 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.

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 the 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

- Small bore, high velocity, centre fire rifles fitted with a telescopic sight are preferred eg .22-250, .22 Hornet, .222 Remington, .223 or .243 Winchester. Hollow-point or soft-nosed ammunition should always be used.

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

- Rimfire weapons with lower muzzle energy are not recommended because of the greater risk of non-lethal wounding.
- 12-gauge shotguns with heavy shot sizes of No. 2, SSG, BB or AAA may be effective, but only up to a distance of 20 m 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 (at least 100 watt), or a helmet or headband mounted 12 volt (35 watt) spotlight
- fox whistle (for making artificial rabbit distress calls), if desired
- first aid kit
- lockable firearm box
- lockable ammunition box

PROCEDURES

Identification of feral cats

- Feral cats are similar in appearance to domestic cats; however when in good physical condition, the feral cat has increased overall muscle development, which is especially noticeable around the head, neck and shoulders, giving the animal a more robust appearance.
- Feral cats are predominately short-haired with coat colours ranging between ginger, tabby, tortoiseshell, grey and black. White markings may be present, particularly on the chest, paws and abdomen, but completely white cats are very rare. Ginger cats are more likely to be found in semi-arid and desert areas, while grey and black cats are found in scrub and forests.

Shooting at night

- Most shooting of feral cats is done at night from a vehicle with the aid of a spotlight. 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 or other moving platform. Ensure you are in a firm, safe and stable position before taking a shot.
- 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.
- 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

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

cats from cover, not to capture or attack them. For further information on the use of dogs refer to NATSOP-GEN002 National Standard Operating Procedure: 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

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 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 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):
- **Head Shot (this is the preferred point of aim)**
 - 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 (eg 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 the following:
 - absence of rhythmic, respiratory movements
 - absence of eye protection reflex (corneal reflex) or 'blink'
 - a fixed, glazed expression in the eyes
 - 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.

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

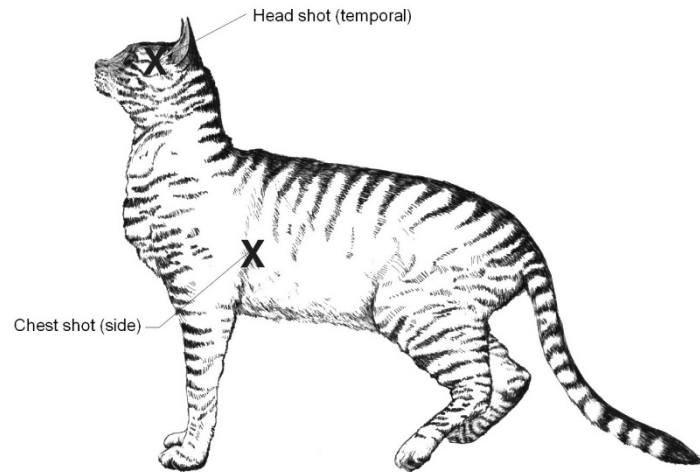


Diagram 1: Recommended shot placements for feral cats Note: Head shots (temporal or frontal) should be used for shooting feral cats caught in traps. See text for details.

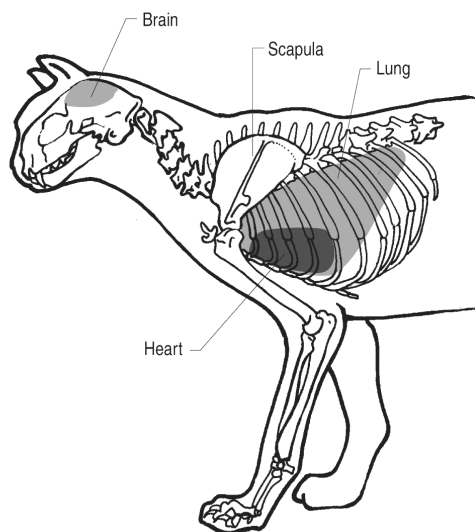


Diagram 2: Side view (skeleton)

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

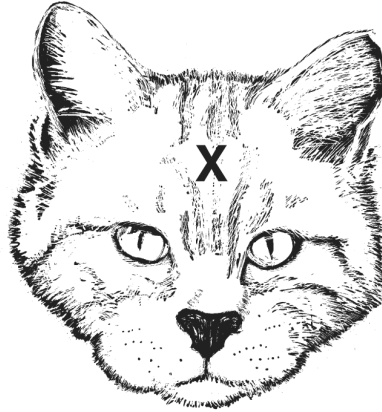


Diagram 3: Head shot (frontal)

NATSOP-CAT001 NATIONAL STANDARD OPERATING PROCEDURE: GROUND SHOOTING OF FERAL CATS

REFERENCES

1. Department of Natural Resources and Mines (2003). NRM facts. *Feral cat ecology and control*. Department of Natural Resources and Mines, Queensland.
2. American Veterinary Medical Association (2007). *AVMA Guidelines on Euthanasia* (formerly The Report of the AVMA Panel on Euthanasia).
3. Denny EA and Dickman CR (2010). *Review of cat ecology and management strategies in Australia*. Invasive Animals Cooperative Research Centre, Canberra.
4. Environment Australia (1999). *Threat Abatement Plan for Predation by Feral Cats*. Biodiversity Group, Environment Australia, Canberra.
5. 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. Royal Society for the Prevention of Cruelty to Animals Australia, Canberra. Pp 65-84.
6. Longair JA, Finley GG, Laniel MA, MacKay C, Mould K, Olfert ED, Roswell H and Preston A (1991). Guidelines for euthanasia of domestic animals by firearms. *Canadian Veterinary Journal* 32:724-726.
7. Mawson P (1991). *Ethics, animal welfare and operational guidelines for the humane shooting of pest animals*. Agriculture Protection Board of Western Australia Infonote.
8. Molsher RL (2001). Trapping and demographics of feral cats (*Felis catus*) in central New South Wales. *Wildlife Research* 28:631-636.
9. NSW Agriculture, NSW National Parks & Wildlife Service, Rural Lands Protection Boards and NSW Police (2003). *Feral Animal Aerial Shooting Team (FAAST) Management and Training System*.
10. Smith G (1999). *A guide to hunting and shooting in Australia*. Regency Publishing, South Australia.
11. Twyford KL, Humphrey PG, Nunn RP and Willoughby L (2000). *Eradication of feral cats (Felis catus) from Gabo Island, south-east Victoria*. *Ecological Management & Restoration* 1:42-49.
12. UFAW (1976). *Humane destruction of unwanted animals*. Universities Federation for Animal Welfare, Potters Bar, England.
13. UFAW (1980). *The ecology and control of feral cats: Proceedings of a symposium held at Royal Holloway College, University of London, 23—24 September, 1980*. Universities Federation for Animal Welfare, Potters Bar, England.

The Centre for Invasive Species Solutions manages these documents on behalf of the Environment and Invasives Committee (EIC). The authors of these documents have taken care to validate the accuracy of the information at the time of writing. This information has been prepared with care but it is provided “as is”, without warranty of any kind, to the extent permitted by law.

If you have printed this document please ensure you regularly check <https://pestsmart.org.au> for the latest updates of these documents.