NATSOP-DON002 NATIONAL STANDARD OPERATING PROCEDURE: AERIAL SHOOTING OF FERAL DONKEYS

Voluntarily adopted by the Vertebrate Pest Committee 2012 with the Invasive Plants and Animals Committee endorsing minor updates September 2017.

BACKGROUND

Feral donkeys (*Equus asinus)* can damage native vegetation, contribute to soil erosion and compete with stock for pasture and water. Control methods include ground shooting and shooting from helicopters, sometimes aided by the use of a Judas animal, and also exclusion fencing.

Aerial shooting of feral donkeys from a helicopter is used for large scale population reductions in remote and/or inaccessible areas. Teams involved in shooting from a helicopter include a shooter, a pilot and a spotter/counter who locates the donkeys as well as records the number of animals shot.

Aerial shooting can be a humane method of destroying feral donkeys when it is carried out by experienced and skilled shooters and pilots; the animal can be clearly seen and is within range; the correct firearm, ammunition and shot placement is used; and wounded animals are promptly located and killed.

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

- Aerial shooting should only be used in a strategic manner as part of a coordinated program designed to achieve sustained effective control.
- Aerial shooting is a cost-effective method where donkey density is high. Costs increase greatly as donkey numbers decrease.
- In areas of heavy cover (e.g. vegetated creek lines, woodlands and forest), effectiveness is limited since donkeys may be concealed and difficult to locate from the air.
- The optimal period for aerial shooting is during dry seasons or droughts when many groups of donkeys are forced to congregate around remaining areas of water and feed. Shooting during drought reduces the number of donkeys that would otherwise die slowly of hunger or thirst.
- For safety reasons, shooting from a helicopter cannot be undertaken in adverse weather conditions (e.g. strong wind, rain, low cloud, hot days that cause unpredictable thermals).
- Shooting of feral donkeys should only be performed by competent, trained personnel who have been tested and accredited for suitability to the task and marksmanship and who hold the appropriate licences (e.g. NSW Feral Animal Aerial Shooter Training (FAAST) course; NT Parks and Wildlife Advanced Firearms course; QLD Biosecurity Aerial Platform Marksmanship Course).
- Helicopter pilots must hold the appropriate licences and permits and be skilled and experienced in aerial shooting operations.
- Helicopter operators must have approval from the Civil Aviation Safety Authority to undertake aerial shooting operations.
- Aerial shooting should comply with all relevant federal and state/territory legislation, policy and guidelines.
- Storage, use and transportation of firearms and ammunition must comply with relevant legislative requirements.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

ANIMAL WELFARE CONSIDERATIONS

Impact on target animals

- Humaneness of aerial shooting as a control technique depends on the skill and judgement of both the shooter and the pilot. If properly carried out, it can be a humane method of destroying feral donkeys. On the other hand, if inexpertly carried out, shooting can result in wounding which may cause considerable pain and suffering.

- Aerial shooting should not be carried out if the nature of the terrain reduces accuracy resulting in increased likelihood of wounding shots and prevents the humane and prompt despatch of wounded animals.

- Shooting must be conducted in a manner which maximises its effect thus causing rapid death. This requires the use of appropriate shot placements, appropriate firearms, and ammunition as described below.

- Only head (brain) or chest (heart-lung) shots must be used. Shooting at other parts of the body is unacceptable.

- Since it is very difficult to assess if an animal is dead from a distance, it is essential that a deliberate policy of 'overkill' be followed where a minimum of two shots are used per animal. That is, after an initial head or chest shot, another shots/s must be fired into the chest or head to ensure death. If the initial shot is to the head it must be correctly placed to achieve instantaneous loss of consciousness and loss of brain function. A follow-up chest shot (or shots) will ensure death if the initial head shot is not lethal.

- 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 after an interval ranging from a few seconds to a minute or more. If a shot stops the heart functioning, the animal will lose consciousness very rapidly.

- Wounded donkeys must be located and killed as quickly and humanely as possible with further shot(s) directed at the chest or 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.

- A 'fly-back' procedure must be conducted in which the helicopter and shooter is flown back over the shot animals so that follow-up shots to the vital areas can be applied. The cost of ammunition and extra flying time must not deter operators from applying this flyback procedure.

- If lactating females are shot, the dependent calves must be located and killed quickly and humanely.

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 before an animal has been positively identified.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

HEALTH AND SAFETY CONSIDERATIONS

- The potentially hazardous nature of aerial shooting requires that safety protocols be strictly followed. Each team member must be aware of and trained in all aspects of helicopter and firearm safety.
- The helicopter pilot must perform a thorough pre-flight briefing with all personnel to establish communication protocols between the shooter and the pilot including pre-shot manoeuvre, commands for firing, and emergency procedures.
- Shooting from a helicopter can be hazardous particularly in areas of rugged topography. The combination of lowlevel flight, close proximity to obstacles (trees, rocks, wires) and the use of firearms make this task extremely hazardous.
- It is essential that ejected firearm shells do not interfere with the safe operations of the helicopter. It may be necessary to fit a deflector plate to the firearm to ensure shells are ejected safely.
- Firearm users must strictly observe all relevant safety guidelines relating to firearm ownership, possession and use.
- When not in 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.

EQUIPMENT REQUIRED

Firearms and ammunition

- Self-loading rifles (SLR) with large magazine capacity such as the M14, M1A, L1A1 or Heckler and Koch M19 in .308 calibre are suitable. They should be fitted with a spot on/aim-point/ red dot scope. Factory ammunition loaded with 150 or 165 grain heavily constructed controlled expansion projectiles e.g. Winchester Fail Safe, Barnes X or Nosler Partition is recommended.
- To provide a backup in case of firearm/ammunition malfunction, at least two firearms should be carried by shooters at all times.
- The accuracy and precision of firearms should be tested against inanimate targets prior to the commencement of any shooting operation.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

Aircraft

- Aircraft used for aerial shooting should be manoeuvrable, fast and responsive to allow quick follow-up of any wounded animals. They should also allow for a good shooting position for the shooter. Operating conditions and performance characteristics of the aircraft will determine the most suitable for the job. Robinson 44 or equivalent or turbine-powered helicopters such as the Bell 206 Jet Ranger are recommended.

- GPS (global positioning systems) and computer mapping equipment such as GIS (geographic information systems) should be used to assist in the accurate recording of information (eg where animals are shot) and to eliminate the risk of shooting in off-target areas.

Other equipment

- Flight helmet (with intercom)
- Fire resistant flight suit
- Safety harness
- Other personal protective equipment including laceup boots, gloves and appropriate eye and hearing protection.
- Survival kit (including a first aid kit)
- Emergency locating beacon
- Lockable firearm box
- Lockable ammunition box

PROCEDURES

- Target donkeys should be mustered away from watercourses and areas of dense vegetation before being shot as wounded animals will be difficult to locate if they go down in these locations.
- Once a target is sighted and has been positively identified as a feral donkey, the pilot should position the helicopter as close as is safe to the target animal to permit the shooter the best opportunity for a humane kill.
- The pilot should aim to provide a shooting platform that is as stable as possible. Shooting from an unsteady platform can significantly detract from the shooter's accuracy.
- A feral donkey 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.
- When shooting feral donkeys, all animals must receive multiple shots to the vital areas to ensure a rapid death. This is because animals may appear to be dead but may only be temporarily unconscious after a single shot.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

- The initial shot to the head is preferred since it can render an animal instantaneously insensible. However the judgement of the shooter is paramount in determining the optimum initial shot placement for each target animal. In some situations (i.e. when conditions are ideal) an initial head shot will achieve a quick humane death, in other situations, an initial chest shot will be more appropriate.
- Immediately after delivering the initial shot, the shooter must perform a second chest shot. This is to destroy the heart, lungs and major blood vessels ensuring a humane death.
- In a line of running animals, shoot the animals at the tail end first and then move forward until all animals in the line have been shot. Any wounded animals must be destroyed immediately before returning to the remainder of the herd.
- The fly-back procedure must then be undertaken to ensure death and apply follow-up shots to vital areas if necessary. Any wounded animal in a group should be killed immediately before any further groups are targeted and shot.
- Records should be kept of number, type and location of animals killed, hours flown, ammunition used and details of established fly-back procedures. Aiming points Aiming points for head and chest shots are as follows (see Diagrams 1, 2 and 3):

Head Shots

Frontal position (front view)

The firearm should be directed at the point of intersection of diagonal lines taken from the base of each ear to the opposite eye. The bullet should be directed horizontally.

The flat facial conformation and the extensive sinus structure of the mature donkey skull can make penetration of the projectile into the brain difficult with this shot. It is therefore more suited to younger animals and instances where there is only a short distance between the shooter and animal.

Temporal position (side view)

The donkey is shot from the side so that the bullet enters the skull midway between the eye and the base of the ear. The bullet should be directed horizontally.

Chest Shot

Side view

The firearm is aimed horizontally at the centre of a line encircling the minimum girth of the animal's chest, immediately behind the forelegs. The shot should be taken slightly behind and below the shoulder at the point immediately behind the elbow.

- Shooting of individuals should stop when the flight response of the herd limits further accurate shooting.
- In family groups containing a mature jack with jennies and foals, the jack should be shot first. This tends to confuse the rest of the family group, slows their retreat and increases the chances of culling them. Unweaned foals should be the next targeted to prevent them being separated from the mob and therefore making them difficult to find.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

- The target animals in a group should be checked to ensure they are dead before moving on to the next group of animals. Always approach the animal from the dorsal (or spinal) side to prevent injury from kicking legs. Death of shot animals can 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.

See shooting diagrams on the next page.

pestSMART
Powered by the Centre for Invasive Species Solutions

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

Recommended shot placements — Donkey

Diagram 1

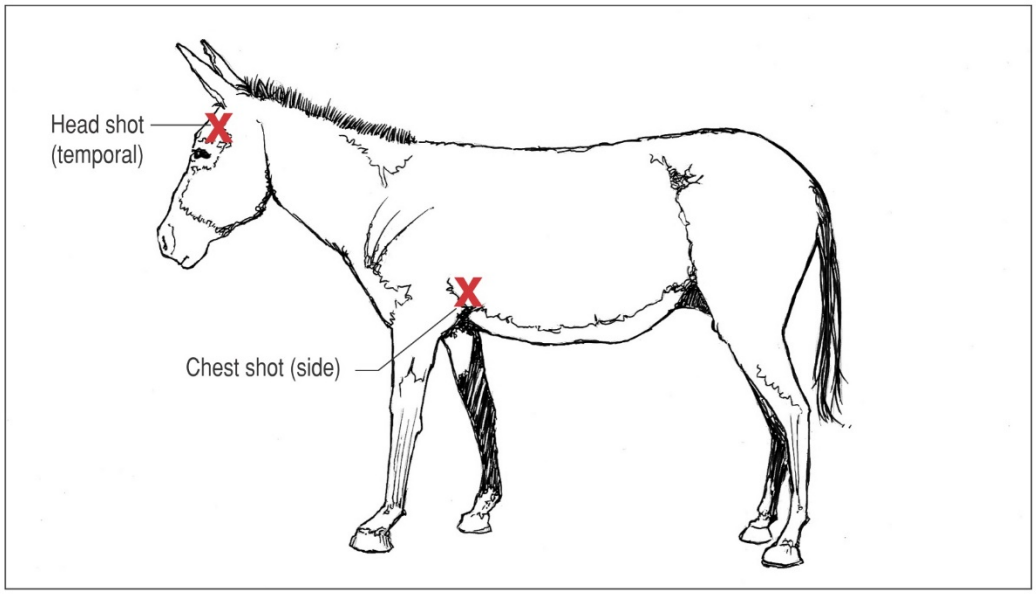


Diagram 2 — Side view (skeleton)

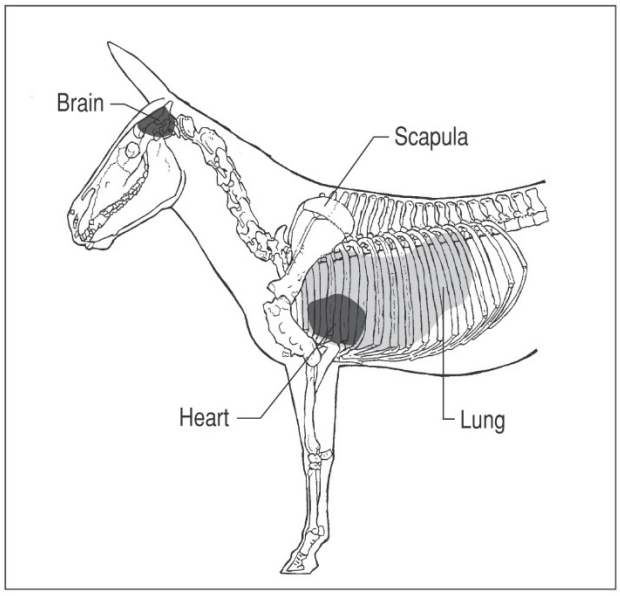
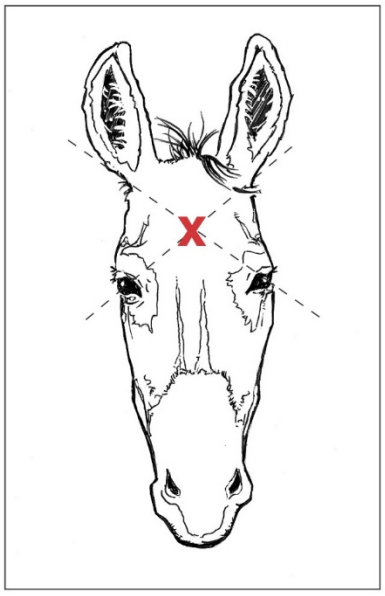


Diagram 3 — Head shot (frontal)



Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/

AERIAL SHOOTING OF FERAL DONKEYS (DON002) STANDARD OPERATING PROCEDURE

REFERENCES

1. American Veterinary Medical Association (2007). *AVMA Guidelines on Euthanasia* (formerly The Report of the AVMA Panel on Euthanasia).
2. Department of Sustainability, Environment, Water, Population and Communities (2011). *Feral horse (Equus caballus) and feral donkey (Equus asinus)*. Natural Heritage Trust, Department of the Environment and Heritage, Canberra.
3. Choquenot D (1988). *Feral donkeys in northern Australia: population dynamics and the cost of control*. M Applied Sci. thesis, Canberra College of Advanced Education, Canberra.
4. Choquenot D (1991). Density-dependent growth, body condition and demography in feral donkeys: testing the food hypothesis. *Ecology 72:805-813*.
5. Freeland WJ and Choquenot D (1990). Determinants of herbivore carrying capacity: Plants, nutrients and Equus asinus in Northern Australia. *Ecology 71:589-597*.
6. 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, Canberra, 25 February 2003. Royal Society for the Prevention of Cruelty to Animals Australia, Canberra. Pp 65-84.
7. 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*.
8. Mawson P (1991). *Ethics, animal welfare and operational guidelines for the humane shooting of pest animals.* Agriculture Protection Board of Western Australia, Infonote 8/91 Agdex 670.
9. NSW Department of Primary Industries, NSW National Parks & Wildlife Service, Rural Lands Protection Boards, NSW Police (2003). Feral Animal Aerial Shooting Team (FAAST) *Management and Training System.* NSW DPI, Orange.
10. McCool CJ, Pollitt CC, Fallon GR and Turner AF (1981). Studies of feral donkeys in the Victoria River-Kimberleys area: Observations on behaviour, reproduction and habitat and some possible control strategies. *Australian Veterinary Journal 57:444-449*.
11. Ramsay BJ (1994). *Commercial use of wild animals in Australia*. Australian Government Publishing Service, Canberra.
12. Senate Select Committee on Animal Welfare (SSCAW) (1991). *Culling of large feral animals in the Northern Territory*. Senate Printing Unit, Parliament House, Canberra.
13. Smith G (1999). *A Guide to Hunting and Shooting in Australia*. Regency Publishing, South Australia.
14. Standing Committee on Agriculture, Animal Health Committee (1991). *Model Code of Practice for the Welfare of Animals: Feral Livestock – Destruction or Capture, Handling and Marketing*. CSIRO, Australia.
15. UFAW (1976). *Humane Destruction of Unwanted Animals*. Universities Federation for Animal Welfare, Potters Bar, England.
16. Woolnough AP, Gray GS, Lowe TJ, Kirkpatrick WR, Rose K and Martin GR (2005). *Distribution and abundance of Pest Animals in Western Australia*: *A Survey of Instiutional Knowledge.* Department of Agriculture, Western Australia.

Reference me as: Trudy Sharp 2012. Aerial shooting of feral donkeys. Standard Operating Procedure. PestSmart website. https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-donkeys/