

## **NATSOP-HOR002 NATIONAL STANDARD OPERATING PROCEDURE: AERIAL SHOOTING OF FERAL HORSES**

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

### **BACKGROUND**

Feral horses (*Equus caballus*) can cause significant environmental damage and losses to rural industries. Although considered pests, feral horses are also a resource, providing products such as pet meat for the domestic market and meat for human consumption for the export market. Control methods include capture (by trapping, mustering or roping), exclusion fencing, ground shooting and shooting from helicopters.

Aerial shooting of feral horses 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 horses and records the number of animals shot.

Aerial shooting can be a humane method of destroying feral horses 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
- wounded animals are promptly located and killed. T (including OH&S) operating in the relevant jurisdiction.

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 coordinated program designed to achieve sustained effective control.
- Aerial shooting is a cost-effective method where horse density is high. Costs increase greatly as horse numbers decrease.
- Aerial shooting is used to control feral horses in remote, inaccessible or rugged terrain where horses cannot be caught or when there is no viable market for them.
- In areas of heavy cover (eg vegetated creek lines, woodlands and forest), effectiveness is limited since horses might 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 horses are forced to congregate around remaining areas of water and feed. Shooting during drought reduces the number of horses that would otherwise die slowly of hunger or thirst.
- For safety reasons, shooting from a helicopter cannot be done in adverse weather conditions (eg strong wind, rain, low cloud, hot days that cause unpredictable thermals).
- Shooting of feral horses 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 (eg 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.

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- Aerial shooting should comply with all relevant federal and state/territory legislation, policy and guidelines.
- In New South Wales national parks, aerial shooting of feral horses is currently banned.
- Storage, use and transportation of firearms and ammunition must comply with relevant legislative requirements.

### **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 done, it can be a humane method of destroying feral horses. On the other hand, if done inexpertly, shooting can result in wounding that can cause considerable pain and suffering.
- Aerial shooting should not be done if the nature of the terrain reduces accuracy resulting in too many wounding shots and prevents the humane and prompt despatch of wounded animals.
- Shooting must be done in a manner that 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 from a distance if an animal is dead, 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 shot 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 horses 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 followed, in which the 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.
- In areas that are accessible, a ground crew of several people walking or on all-terrain vehicles can be used to locate and humanely kill any wounded animals.
- To minimise the animal welfare implications of leaving dependent foals to die a slow death from starvation, it is preferable not to run aerial shooting programs when mares have dependent young at foot. Foaling is concentrated over spring and summer. Apart from the welfare implications, control at times of foaling might be less effective, as females are usually more cryptic (secretive) and tend to leave the group to give birth in isolated and/or sheltered locations.
- If lactating mares are shot, efforts should be made to find dependent foals and kill them quickly and humanely.

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### **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.
- Sensitive livestock such as deer, ostriches and domestic horses are easily frightened by gunshots, helicopter noise, wind and so on and might injure themselves by running into fences and other obstacles. Avoid shooting in areas where these livestock are or organise their removal from the area before the shooting program.

### **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 give a thorough pre-flight briefing to 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 low-level 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 might be necessary to fit a deflector plate to the firearm to make sure 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/territory 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 (SLRs) 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 (eg 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 before any shooting operation.

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### **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 help 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 lace-up 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 horses 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, 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 a moving platform can significantly detract from the shooter's accuracy.
- A feral horse 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 probable. If in doubt, do NOT shoot.
- When shooting feral horses, all animals must receive multiple shots to the vital areas to ensure a rapid death. This is because animals can appear to be dead but might only be temporarily unconscious after a single shot.
- For aerial shooting, the initial shot to the chest is preferred since it is easier to achieve with a moving animal. However, the judgement of the shooter is paramount in determining the optimum initial shot placement for each target animal. In some situations (ie 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.

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- Immediately after delivering the initial shot, the shooter must deliver a second shot to ensure 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 attention to the remainder of the herd.
- The fly-back procedure must then be followed 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 chest and head shots are as follows (see diagrams):

#### **Chest Shot**

##### **Side view**

The horse is shot from the side so that the bullet enters the chest at a point behind the foreleg, slightly above and immediately behind the elbow joint.

#### **Head Shots (this is the preferred point of aim)**

Shots to the head should only be attempted at short ranges and in ideal conditions. The brain is a relatively small target that is well protected by bone. Only the slightest misplacement of the bullet can result in nonlethal and debilitating wounds, such as a broken jaw.

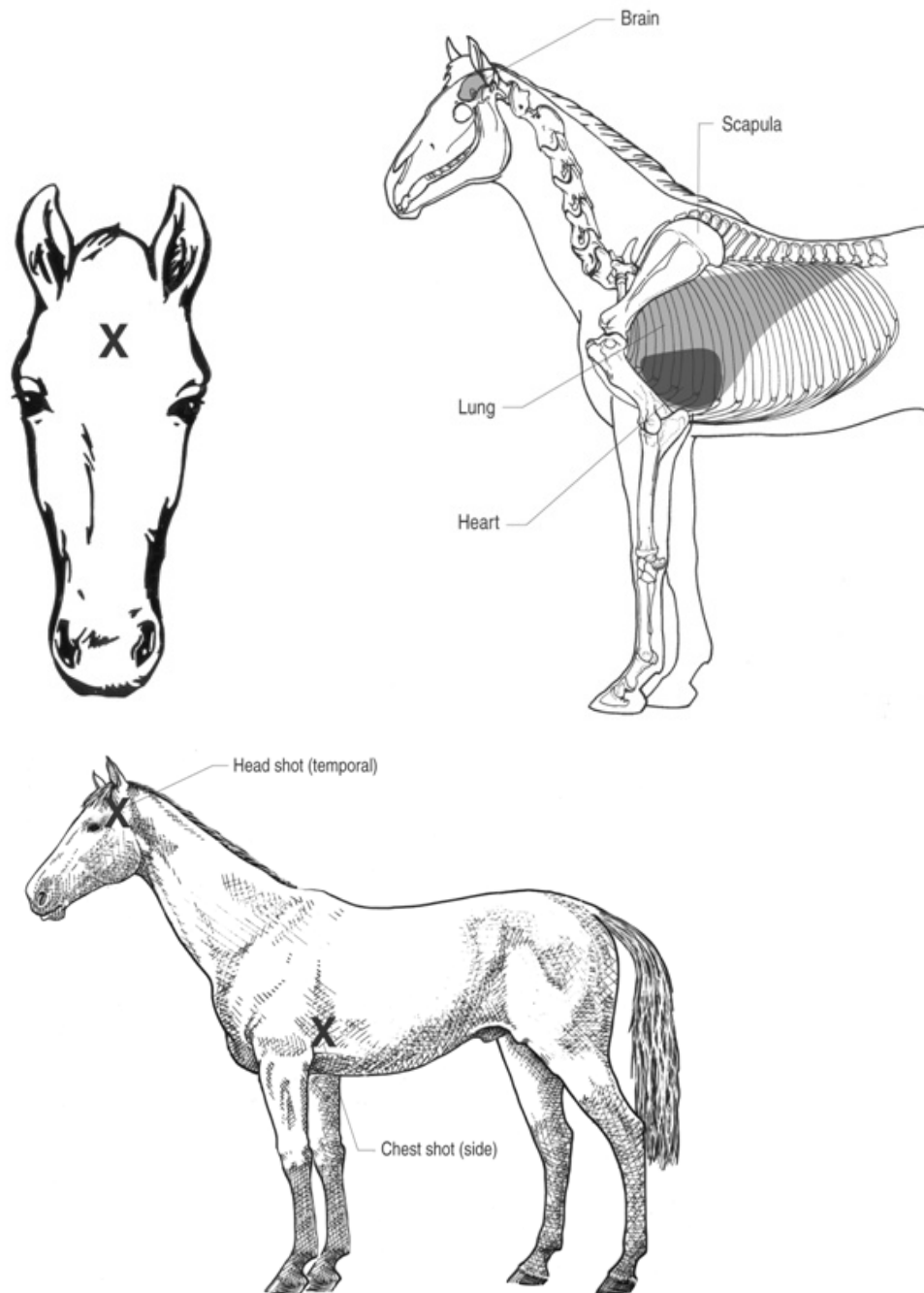
##### **Frontal position (front view)**

- This position is occasionally used when an animal faces the shooter.
- The firearm should be directed at the point of intersection of diagonal lines taken from the base of each ear to the opposite eye aiming at the spine.

##### **Temporal (side view)**

- This shot is occasionally used where a second shot needs to be delivered to an injured animal that is lying on its side.
- The horse is shot from the side so that the bullet enters the skull midway between the eye and the base of the ear.

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Recommended shot placements for feral horses

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