Standard Operating Procedure

Euthanasia of small stranded cetaceans using firearms

SOP No: 15.5

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Prepared for:

Department of Parks and Wildlife Animal Ethics Committee

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1 Purpose

The occurrence of live cetaceans being found stranded is relatively common along the West Australian coastline (Groom and Coughran 2012). The frequency of stranding events is expected to increase over coming decades (Schumann et al. 2013). While some stranded animals can be successfully returned to the ocean if viable, many stranded cetaceans require euthanasia. While operating procedures are in place to use explosive charges to humanely euthanase large (>7m cetaceans; Coughran et al. 2012), the use of firearms has been demonstrated to be the most humane method for euthanasing small (<7m) animals (Blackmore et al. 1995).

This standard operating procedure (SOP) provides instruction on how to humanely euthanase a small (<7m) stranded cetacean with appropriate firearms and ammunition.

2 Scope

This SOP applies to the euthanasia of moribund small cetaceans undertaken by the Department of Parks and Wildlife (DPaW), across the state. DPaW is the designated lead agency for all cetacean stranding events in Western Australia. In isolated situations in which DPaW is unable to respond to stranding events, this SOP may also be used to guide euthanasia of stranded small cetaceans undertaken by other authorised individuals or organisations. All DPaW personnel involved in attending to cetacean stranding events should be familiar with the content of this document.

This SOP applies to the use of firearms for euthanasia of stranded cetaceans up to about 7m in length. Euthanasia methods for larger cetaceans, such as use of explosive charges (Coughran et al. 2012), or chemical injection (Barco et al. 2012; Harms et al. 2014), are not covered by this SOP. General management of cetacean strandings is covered in Draft Marine Animal Stranding Response Plan.

Other euthanasia methods may be more appropriate in some cases and their use is not precluded by this SOP. Euthanasia of cetaceans through chemical injection is an established method but requires specialised equipment (Barco et al. 2012; Harms et al. 2014). Personnel should be appropriately licensed, trained or where necessary, supervised when using any method.

3 Definitions

Cetacea: Marine mammals commonly known as whales, dolphins, and porpoises.

Corneal reflex: An involuntary blinking of the eyelids, stimulated by touching the cornea, commonly used to assess death.

Grain: A term used to measure the weight of bullets or other projectiles.
4 Approved methods

4.1 Deciding when euthanasia is necessary

In most situations the decision to euthanase an animal must be based on the perceived degree of suffering and the chances of recovery. If an animal is severely injured and is suffering, it must be euthanased as soon as possible if it can be undertaken safely and humanely. The goal of euthanasia is to use humane methods to produce a painless, rapid death and to avoid exciting or alarming the animal (Leary et al. 2013). The technique used should be as reliable, simple, safe and effective as possible.

Your safety and the safety of co-workers and volunteers working around stranded cetaceans must take first priority. The procedure should only be performed by competent persons and should not cause undue stress to human observers. It should be conducted away from members of the public wherever possible, but any delays arising from doing so should not add additional distress to the animal. Euthanasia should not be attempted for animals in the surf zone or in deep water. Care should also be exercised to avoid shooting over substrates that carry a high risk of projectile ricochets (stones and rock platforms).

Presentations necessitating euthanasia include the following:

- Orphaned neonates
- Animals in very poor body condition
- Animals with severe wounds or injuries
- Animals displaying an inability to swim

4.2 Euthanasing a cetacean

Euthanasia should be carried out giving due consideration to the following factors in order of priority:

- Human safety
- Animal welfare
- Practicality
- Skill
- Culture
- Aesthetics

Firearms based euthanasia methods have been demonstrated to be humane, rapid, cost-effective, and safe (Øen and Knudsen 2007). However, the aesthetics of the technique may be considered poor by some sectors of the community. In addition, perceptions of poor human safety often accompany the use of firearms, even in professional wildlife management settings (see Caudell et al. 2009). Shooting methods should be restricted to only those described below.
5 Procedure Outline

5.1 Equipment

The following equipment is essential when using firearms for the euthanasia of animals:

- ‘.308 Winchester® or ‘.300 Winchester® Magnum’ calibre bolt action rifle.
- AT LEAST THREE .30 calibre 180 grain hydrostatically stabilised projectiles per animal being euthanased.
- Hearing protection (PPE) rated to Class V.
- Eye protection (safety glasses)
- High visibility clothing.
- Ammunition safe for the storage of projectiles and rifle bolt.
- A locked case, for the transport of firearms.

5.2 Personnel

There are two essential people during the euthanasia process:

- The shooter, responsible for the euthanasia of the animal.
- A site controller, to prohibit personnel from entering the vicinity while firearms are used.

5.3 Assessing the animal

Once it is established that euthanasia is required, minimal further assessment is required. If necessary, the animal should be manipulated into a safe position for shooting. This entails a position away from rocks or reef, and out of the surf zone. Ideally, animals should be shot on a sandy substrate. Extreme caution must be exercised if attempting to euthanase an animal that is moving or thrashing.

5.4 Firearm safety

Standard firearm safety practices, as described in the DPaW Firearms Training Manual must be followed. A DPaW Shoot Plan Template (Appendix 1) should be completed prior to any shooting being undertaken.

5.5 Discharging or shooting

The only rifle calibres that should be used are ‘.308 Winchester® or ‘.300 Winchester® Magnum’. Either calibre should only be used to fire 180 grain hydrostatically stabilised projectiles. For occupational health and safety reasons, only factory produced ammunition should be used and reloaded cartridges should not be used, unless there is a compelling reason to do so. Under NO
circumstances should sporting type round nose or soft nose projectiles be used as these types of projectiles have inadequate penetration for this purpose.

Shooting should always be directed to the dorsal surface of the animal, aiming slightly posterior to the blowhole and angled backwards at 45° (Figures 1, 2 and 3) along the midline of the animal. This aim point corresponds to the vital centres of the animals’ hindbrain, which lie midway between the eye and pectoral fin when the animal is viewed laterally (Figure 2). The shooter should be standing 0.5-1.0 metres in front of the animals’ head such that the muzzle of the rifle barrel is also 0.5-1.0 metres from the animals’ blowhole at the time of shooting (Figure 3).

**Figure 1:** Recommended aim points for 3 successive shots relative to the blowhole – dorsal view (photo J. Hampton 21/06/2013).
**Figure 2:** Recommended aim points for 3 successive shots relative to the blowhole – lateral view (modified from IWC 2006).

**Figure 3:** Recommended shot distance – lateral view (photo J. Hampton 29/07/2013).
5.6 Repeat shooting

If there is any doubt about hitting the target with one shot, then consider firing three carefully placed shots in a line through the target area. Three shots should be fired close together along the animals’ long axis (Figure 1). If there are onlookers present then it is vital that you explain BEFOREHAND this is standard practice to ensure a humane death. This will ensure that onlookers will not think an error has been made or that the shooter is not competent.

5.7 Confirming death

Combined, the following checks provide a reliable indication that a euthanased animal is dead (Knudsen 2005):

(a) complete dilation of the pupils;
(b) absence of corneal (closure of eyelid if eye touched) reflex;
(c) onset of a short duration of unprovoked agonal convulsions (violent uncoordinated thrashing); and
(d) slack lower jaw.

If there is ever doubt as to whether the animal is dead, follow-up shooting must always be employed.

5.8 Maintenance of equipment

Clean and check the firearm after use, paying particular attention to the cleaning of the rifle barrel, and secure it in a gun cabinet, as described in the DPaW Firearms Training Manual. When using firearms in a coastal environment, particular care must be payed to removing sand and salt from the firearm’s barrel and action.

5.9 Records

When euthanasing a cetacean, the operator must carry copies of all relevant licenses with them (e.g. either a DPaW Regulation 15 or 17 Licence and a DPaW Corporate Firearms Authority for high calibre firearms).

Record sheets (Appendix 2) detailing the following are also required:

i. Name of the shooter.
ii. Date.
iii. The species of cetacean and number of animals.
iv. The presentation of the animal and reason for euthanasia.
v. The number of shots fired.
vii. The time taken from the first shot being fired to the animals’ death.

Completed record sheets should be forwarded onto the DPaW Senior Wildlife Officer, Marine Wildlife Operations as soon as possible after the shooting program is completed.
6 Level of impact

There is inherent risk associated with the use of high calibre firearms. However, the animals should suffer minimal stress if procedures are followed professionally and rapidly. Potential stressors include:

- Being physically manipulated prior to shooting
- Cohort animals being distressed by audible gunshot noise
- Potential non-lethal wounding if shooting is improperly performed

If the shooter has adequate experience and training in the use of firearms and the knowledge of the effects of ballistic injury, the duration of suffering associated with this technique is very short. If it is necessary to euthanase more than one animal at the same location, every effort should be made to euthanase all moribund animals as quickly as possible to minimize the distress to the cohort animals.

7 Ethical Considerations

To reduce the level of impact of the use of firearms on the welfare of target individuals, there are a number of ethical considerations that should be addressed throughout the planning and implementation process. Ethical obligations dictate that euthanasia must be performed as soon as possible if appropriately trained staff and appropriate equipment is available, and it is safe to do so. All euthanasia methods should aim to provide the most rapid death possible, and must include repeated measures if any doubt remains over an animals’ continued suffering.

8 Competencies and Approvals

DPaW personnel will need to satisfy departmental competency requirements to be allowed to use corporate firearms. This is to ensure that the personnel involved have the necessary knowledge and experience to minimise the potential impacts on the welfare of the animals. All DPaW personnel attempting cetacean euthanasia should have some experience in cetacean stranding events. This document could be adapted for other agencies and jurisdictions that respond to cetacean stranding events. Other groups, organisations or individuals using this SOP to guide their fauna management activities are encouraged to also meet these competency requirements as well as their basic firearms and animal welfare legislative obligations.

9 Occupational Health and Safety

First aid kits and suitably trained staff should always be available on site. You must be aware of your own safety and the safety of others as well as the animals during handling or shooting firearms.

A DPaW Shoot Plan Template (Appendix 1) should be completed prior to any shooting being undertaken at each stranding where firearms are to be used, to ensure that all relevant issues and safety requirements are considered and all attendant risks adequately managed.
9.1 Firearms
If handled appropriately, there is minimal risk to the operator, the public, or co-workers from firearms injury. Ensure that basic safety standards are observed at all times. Always check the calibre of the rifle and the projectile before loading ammunition, and only load firearms once all members of the public are removed to a safe distance.

9.2 Physical injury from the animal
Extreme care should be exercised when in the immediate vicinity of a live cetacean. Due to their mass and power, even moribund individuals can severely injure staff if they strike with their tail or fins. Any inflicted injuries (even superficial ones) should be appropriately treated as soon as possible to ameliorate possible allergic reaction, prevent infection and promote healing. Professional medical treatment should be obtained if necessary. If DPaW personnel or volunteers are injured an “Incident and Near Hit Notification” form must be completed and forwarded to DPaW’s Risk Management Section as soon as possible after the event.

9.3 Zoonoses
There are few diseases carried by cetaceans that can be transmitted to humans (i.e. zoonoses). All personnel must take precautions to minimise the risk of disease transmission to protect themselves, their families and wildlife populations. Advice on minimising disease risk is contained in DPaW SOP 16.2 “Managing disease risk in wildlife management.”

9.4 Storage of equipment
Due to the danger to humans, as well as animals, associated with the wrongful possession and use of firearms, all equipment must be secured within a locked facility to prevent unauthorised access to the equipment when not in use.

9.5 Disposal of the carcass
In the absence of potent euthanasia chemicals, euthanased carcasses can be disposed of safely in several different ways, depending on the circumstances of the stranding site. Burial in sand dunes or removal via vehicle to refuse burial sites are both appropriate approaches.
Further Reading

The following SOPs have been mentioned in the advice regarding use of firearms and attending to cetacean strandings. It is recommended that these SOPs and other documents listed below are also considered when proposing to perform euthanasia:

SOP 15.1 Humane killing of animals under field conditions in wildlife management

SOP 16.2 Managing disease risk in wildlife management

DPaW Firearms Safety Training Manual

DPaW Draft Marine Animal Stranding Response Plan

Firearms Act 1973

Firearms Regulations 1974

Occupational Safety and Health Act 1984

Occupational Safety and Health Regulations 1996
SOP 15.5 Euthanasia of small cetaceans using firearms

11 References


American Veterinary Medical Association (AVMA) (2013). AVMA guidelines for the euthanasia of animals. AVMA, Schaumburg, Illinois, USA.


### SOP 15.5 Euthanasia of small cetaceans using firearms

#### Appendices

**Appendix 1: DPaW Shoot Plan Template**

<table>
<thead>
<tr>
<th>Date</th>
<th>Calibre</th>
<th>Location</th>
</tr>
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**Shoot when:** *safe to do so, target is within range, gun/cartridge combination appropriate for the type/size of animal & confident of ethical kill.*

<table>
<thead>
<tr>
<th>Pre Shoot (SEE OVER PAGE FOR INFORMATION)</th>
<th>Yes / No or N/A</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Objective</td>
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<tr>
<td>Justification</td>
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<td>Category</td>
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<td>Risk Assessment / SWP</td>
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<td>Security</td>
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<td>Map / Danger Zone</td>
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<td>Pre Brief</td>
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<tr>
<td>Notification, Cultural Awareness,</td>
<td>Who/How:</td>
<td>See note over page re marine animal ethics!</td>
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<td>Public Relations</td>
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<td>Access Closure</td>
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<td>Signage</td>
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<td>Legislation</td>
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<td>Ethics (Animal)</td>
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<td>Zoonoses</td>
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<td>First Aid</td>
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<td>PPE</td>
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<td>Communications</td>
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<tr>
<td>Emergency Procedure</td>
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(Note: any exclusions must be justifiable)

**Post Shoot**

| Carcass Disposal                          |                |
| Firesams Logbook                          |                |
| Debrief                                   |                |

*File copy of shoot plan!*  
*Note: For Category 2 and 3 Shoot Plans, forward an electronic copy to Corporate Firearms Officer*

**Always maintain situational & geographical awareness**

All departmental firearm use or private use on DPaW behalf must be pre-planned and requires a shoot plan. It is essential that all appropriate controls be in place before a shoot.

**DPaW Corporate License Holder compiling plan:**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Signature</th>
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13
Support Notes

Objective  What is the desired outcome/s?

Justification  Is there a safer alternative? Do we need to use firearms?

Category  
(1) Single euthanase, single shot, approved & signed off by Corporate Licence Holder.
(2) Project or study, approved and signed off by DM, Section Manager, Project Manager.
(3) Major feral program / aerial shoot, long term, approved/signed off by Regional Manager.

Safe Work Practices (SWP)  Job Description and identification of hazards.

Risk Assessment  Of proposed shoot location, paying particular attention to surrounds within the danger zone.

Security  Firearm and ammunition – including extended field trips.

Map/Danger Zone  GEOGRAPHICAL AWARENESS particularly for Category 1.

A map of the shoot area outlining Danger Zones should be compiled for Categories 2 & 3 and include ‘No Shoot Zones’.

Species and calibre details provide information to help establish Danger Zone perimeters.

Pre Brief  Relevant parties – includes Shoot Plan

Notification  Relevant authorities (especially Police), adjoining landowners, other land managers/authorities and public land users (e.g. 4WD club, bushwalkers, fishermen). Consider using radio, notices, letter box drop etc. Internal notification to District Works Coordinator.

Note: for whale, dugong, dolphin, seal, sea lion euthanasing, notify Nature Protection Branch prior

Cultural Awareness  Consider Native Title, Traditional Landowners and possible ramifications (particularly for remote area shoots).

Public Relations  Consider any potential ramifications

Access Closure  Should be considered if public access is in or adjacent to shoot location. Consider Danger Zones

Signage  At shoot location: prior to and on the day.

Legislation  Compliance with relevant sections i.e. shooters are Corporate License Holders.

Ethics (Animal)  Compliance as per Animal Ethics Guide i.e. right caliber, projectile, point of aim, Zeroed etc.

First Aid  Provision of First Aid kit and trained First Aid person on site.

P.P.E  To be compliant and worn (class 5 hearing & medium impact eye).

Zoonoses  Maintain personal hygiene when handling carcass or body parts.

Carcass Disposal  Ensure disposal is in accordance with DPAW policy.

Communications  Between site and HQ, as well as between shooters etc.

Emergency Procedures  Ensure procedures established in case of mishap (e.g. location of nearest medical help).

Personal Firearms Log  To be completed.

Debrief  Particularly for Categories 2 & 3 including: success of shoot, was aim achieved, possible repeat shoots, how to improve etc. Also applies to Category 1 on a smaller scale.

File copy of shoot plan and for Category 2 and 3 Shoot Plans, forward an electronic copy to Corporate Firearms Officer
Appendix 2: Record Sheet for Cetacean Euthanasia Events

<table>
<thead>
<tr>
<th>Shooter name</th>
<th>Date</th>
<th>Cetacean species</th>
<th>Number of animals</th>
<th>Reason for euthanasia</th>
<th>Number of shots fired</th>
<th>Time to death (seconds)</th>
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