

Charles Darwin University Animal Ethics Committee

Standard Operating Procedure:

Aluminium Box Traps for Capture of Terrestrial Vertebrates (WA DBCA)

Version No:	1.4
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Please note: this SOP has been developed for animal use in WA. Consideration should be taken to the specific conditions of the region in which your work is being conducted, and modifications to procedures made accordingly to ensure the best welfare of the animal and safety of the project participants. Any modifications required should be outlined in the project application. Consideration should particularly be given to the weather conditions of the Northern Territory and the presence of extreme hazards such as crocodiles.

The CDU AEC approves the following SOP with the below amendments/conditions:

- Traps are to be checked within 2 hours of sunrise (not 3 hours as referenced in the SOP).
- Ants can be particularly problematic for animal welfare when confined in traps. Outline your mitigations for ant attack in your project application.

Standard Operating Procedure

SC24-02 ALUMINIUM BOX TRAPS FOR CAPTURE OF TERRESTRIAL VERTEBRATES

Animal welfare is the responsibility of all personnel involved in the care and use of animals for scientific purposes.

Personnel involved in an Animal Ethics Committee approved project should read and understand their obligations under the *Australian code for the care and use of animals for scientific purposes*.

Version 1.4

Last reviewed: August 2024



Department of **Biodiversity,
Conservation and Attractions**

Department of Biodiversity, Conservation and Attractions
Locked Bag 104
Bentley Delivery Centre WA 6983
Phone: (08) 9219 9000
Fax: (08) 9334 0498

www.dbca.wa.gov.au

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Questions regarding the use of this material should be directed to:
Species and Communities Program
Department of Biodiversity, Conservation and Attractions
Locked Bag 104
Bentley Delivery Centre WA 6983
Email: animalethics@dbca.wa.gov.au

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*Previously titled Elliott Traps for Live Capture of Terrestrial Vertebrates.

Approvals: Version 1.4



Approved by the DBCA Animal Ethics Committee:

Dr Jacqui Richards
Chairperson, Animal Ethics Committee
Department of Biodiversity, Conservation and Attractions

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1 Acknowledgements

This standard operating procedure was originally developed by Christine Freegard and Vanessa Richter, with contributions from Nicole Godfrey, Teagan Johnston and Colleen Sims.

2 Purpose

Aluminium box traps (e.g., Elliott traps by Elliott Scientific Company, Upwey, Victoria) are used for the capture of a variety of small to medium sized animals. They operate using a treadle-plate mechanism, which is set off when an animal steps on an elevated trigger plate, and springs the door closed. They are usually placed on the ground but can also be secured in trees to catch semi-arboreal and arboreal mammals.

This Standard Operating Procedure (SOP) provides advice on the use of aluminium box traps for non-lethal trapping of terrestrial vertebrate fauna.

3 Scope

This SOP has been written specifically for scientific and education purposes, and approved by the Department of Biodiversity, Conservation and Attractions (DBCA) Animal Ethics Committee (AEC). However, this SOP may also be appropriate for other situations.

This SOP applies to all fauna survey and monitoring activities involving the use of aluminium box traps (Elliott traps or similar box-type traps) undertaken across Western Australia by DBCA (hereafter department) personnel. It may also be used to guide fauna related activities undertaken by Natural Resource Management groups, consultants, researchers and any other individuals or organisations. All department personnel involved in aluminium box trapping should be familiar with the content of this document.

This SOP complements the *Australian code of practice for the care and use of animals for scientific purposes* (The Code). The Code provides the ethical framework and governing principles to guide decisions and actions of all those involved in the care and use of animals for scientific purposes, and should be referred to for all AEC approved projects. A copy of the code may be viewed by visiting the National Health and Medical Research Council website (<https://www.nhmrc.gov.au/about-us/publications/australian-code-care-and-use-animals-scientific-purposes>).

4 Animal Welfare Considerations

To reduce the level of impact of aluminium box trapping on the welfare of animals, personnel must consider, address and plan for the range of welfare impacts that may be encountered. Strategies to reduce impacts should be identified during the planning stage to ensure that they can be readily implemented during trap set up and trap checking, and contingencies for managing welfare issues have been identified. All personnel involved in the project should be aware of the range of issues that they may encounter, the options that are available for reducing impacts and improving animal welfare, and the process for managing adverse events.

Department projects involving aluminium box trapping will require approval from the department's AEC. Key animal welfare considerations that should be considered when using aluminium box traps are listed below and highlighted throughout the document.

4.1 Injury and unexpected deaths

If adverse events including injury, unexpected deaths or unplanned requirement for euthanasia occur, then it is essential to consider the possible causes and take action to prevent further issues. Adhering to the guidance in this SOP will assist in minimising the likelihood of adverse events. For projects approved by the department's AEC, adverse events must be reported in writing to the AEC Executive Officer as soon as possible after the event by completing an *Adverse Event Form*. Guidance on first aid for animals and field euthanasia procedures are described in the department SOPs for *First Aid for Animals* and *Euthanasia of Animals Under Field Conditions*. Where infectious disease is suspected, refer to the department SOP for *Managing Disease Risk and Biosecurity in Wildlife Management* for further guidance.

4.2 Level of impact

Potential animal welfare impacts experienced during aluminium box trapping include:

- Stress, injury and/or self-harm resulting from an extended period in confinement.
- Stress and/or survival disadvantage resulting from inappropriate handling and release technique, timing and location.
- Stress resulting from extreme environmental conditions within the trap (i.e., temperature, heavy rain).
- Stress or mortality as result of attack from other species (e.g., ants).
- Trauma (e.g., injury from door mechanism).
- Starvation (e.g., dependent young of captured lactating female).
- Distress (caused by discomfort, social isolation, separation of mother and young, exposure to predators).

If aluminium box traps are properly monitored and preventative actions are utilised, then the risk and overall impact should be low and short-term. Project planning must involve the identification and mitigation of all potential welfare risks to minimise their impacts as much as possible. Note that whilst these impacts are specifically associated with the use of aluminium box traps, an animal may also experience other impacts from associated procedures. Investigators must be aware that the effects of a series of stressors, such as capture, handling, transportation, sedation, anaesthesia and marking can be cumulative.

5 Approved Trap Types

Most aluminium box traps used in Western Australia were manufactured by Elliott Scientific (Upwey, Victoria) and are usually referred to as "Elliotts." Aluminium box traps manufactured by other businesses or with different trigger mechanisms may also be appropriate and their use is not excluded. Care should be taken to select brands that are of high quality and operate correctly. Projects approved by the department's AEC preferring to use alternative aluminium box traps to those mentioned here may do so if they describe in detail the differences in design and are able to report on the survivorship rates and the welfare impacts. The following is a list of commonly approved trap types:

Large Box Trap: Aluminium folding box trap (15 cm x 15.5 cm x 46 cm) with a treadle release mechanism. This trap is designed for small to medium sized mammals such as phascogales

and quenda. However, these traps are not as robust as cage traps, and they are easily damaged by larger animals. While not widely used in fauna trapping, they are useful in situations where large numbers of traps are being deployed in rough terrain.

Medium Box Trap: Aluminium folding box trap (9 cm x 10 cm x 33 cm) with a treadle release mechanism. These traps are designed for small mammals (up to 250 g) and some reptiles. This is the most versatile and therefore most widely used form of box trap.

Small Box Trap: Aluminium folding box trap (8 cm x 9 cm x 23 cm) with a treadle release mechanism. This trap is designed for small mammals (up to 30 g) but has limited application.

Optional modification to traps:

A locking mechanism has been developed to improve capture efficiency of box traps for dexterous arboreal and scansorial mammals such as phascogales (Johnson, 1996). The mechanism comprises a shaped-metal tab centrally fixed to the top of the door. Details of how to make and fit the locking mechanism may be found in Johnson (1996).

Modifications including the placement of box traps inside PVC tubing, secured with pin arrangements, have also been used successfully to manage trap disturbance by non-target species (Page *et. al.* 2012).

Modifications to traps should have no greater impact on the welfare of the target species.



Figure 1: Elliott trap sheltered in a spinifex bush. Photo: Mark Cowan/DBCA

6 Procedure Outline

6.1 Setting and positioning traps

- (a) The location and configuration of trap placement (i.e., transect or grid), as well as the number of traps, will be determined by the purpose of the study and should be planned before commencing the survey. Consider the target species' likely use of habitat and home range, and welfare implications of trap placement when designing trap configuration and layout. Vegetation and habitat mapping may assist in survey design.

- (b) Trap locations must be marked so that no traps are missed when checking or removing them (e.g., with flagging tape which is labelled and using a numbering system so that traps can be uniquely identified). A GPS reading for each trap point should be taken to aid relocation of the trap as well as for later data analysis and any future re-trapping at the site. Permanent monitoring sites should also be marked using a permanent marker (e.g., numbered dropper post). The location information for permanent monitoring transects and their trap points should be recorded on datasheets and in a database.
- (c) If setting traps along roads or vehicle tracks, traps must be placed away from the roadside (generally a distance of 5m or greater on publicly accessible roads and tracks), they should not be readily visible from the road to avoid public curiosity and possible theft and to reduce the disturbance of trapped animals by passing vehicles.
- (d) Trap placement:

ANIMAL WELFARE: Trap placement can greatly affect animal welfare. Consider the climate of the area you are trapping in and the species' biology (e.g., thermoregulation characteristics) when choosing a trap position. Traps need to be placed in suitable locations that provide complete shelter from the sun and protection from rain to reduce exposure of trapped animals.

Good cover is critically important for aluminium box traps to provide insulation and protection for animals in traps. Shade is critical in warm to hot weather. Box traps must never be exposed to full sunlight as animals can easily die of heat stress inside the traps. Consider shade movement when placing traps, particularly early morning sun exposure. Where exposure may be an issue, consider setting traps within or under dense vegetation/thickets and on the southern side of vegetation. Corflute is a twin wall polypropylene material that can be used to provide shade and weather protection for box traps. The material is lightweight, waterproof and can be cut on one wall to shape into a tent over box traps.

In colder weather, box traps should have an insulating material such as a fleece (something that will provide insulation but won't absorb or shed moisture readily) or leaf litter/grass placed inside them to provide protection for captured animals. When using insulating material, ensure that it won't impact on the welfare of the animal, that it will provide good insulation and that the selected insulating material does not impede the treadle or door of the trap.

Temperature logging devices (e.g. i-Buttons) can be useful tools to collect longitudinal recordings of in-trap temperatures, which can help in understanding potential animal welfare impacts.

Additionally, a thick plastic bag or plastic wrap can be secured around two thirds of the trap to provide protection from wind and rain, whilst still permitting adequate ventilation. It is important to ensure the trap is not sloped backwards as this could result in rain draining down toward and pooling in plastic wrap/bag. Hessian of an appropriate size can also be placed on the outside of the traps in dry weather to reduce temperature extremes within the trap.

Avoid placing traps on or in the vicinity of ant nests.

- (e) Traps must be set in level positions using natural cover wherever possible (e.g. Figure 1). Debris can be cleared from under the trap to ensure stability.

- (f) If securing the trap to a tree, check that the branch is solid and that it can support the trap and any possible trapped animal. A wooden gantry can be fixed to a tree using an appropriately sized bracket screwed to the trunk to support the trap and prevent it from falling. Traps must be secured using an appropriate method that ensures that the trap is stable, cannot be dislodged, and is able to function properly.
- (g) Faulty equipment reduces the opportunity to trap animals, and can result in poor data, cause adverse events and reduce the value of the trapping effort. Before the trap is left, it is important to re-check that the mechanism is working properly, the trap cover is effective and secure, and that the trap is positioned to take advantage of shade in the morning.
- (h) All traps must be accounted for after each trapping session.

6.2 Baiting traps

When choosing the type of bait for your traps always consider the target species and possible non-target captures. Bait is intended to lure an animal into the trap and for some species, provides a small amount of food while the animal is trapped.

The standard bait generally used for aluminium box traps is a mixture of peanut paste, rolled oats and sometimes sardines which is also known as “universal bait” (Note: *sardines may increase the attraction of ants and you may want to consider excluding them from the bait if ants are an issue, however this will reduce your capacity to capture dasyurids or other carnivorous species*). Medium box traps require a quantity about the size of a 10-cent coin. Refer to

Appendix I for more information.

ANIMAL WELFARE: Some peanut butters use xylitol as a sugar substitute. There are no data available regarding the toxicity of xylitol to Australian wildlife, but xylitol is toxic to dogs. If using universal bait, please check the ingredient list on the peanut butter and avoid brands containing xylitol.

Other bait types or ingredients may be used if they have been identified as appropriate and approved for use for a particular project or species.

Care must be taken when baiting traps to ensure that the bait does not impede the trigger mechanism or door. To avoid bait rolling underneath the treadle plate and rendering the trap inoperative, it is recommended that bait balls are slightly squashed so that they cannot roll.

Baits should be replaced when their effectiveness as a lure is reduced (e.g., when the odour of the bait is reduced or gone) or if the bait may impact on an animal's health if consumed (e.g., rancid). Baits should be replaced rather than additional baits placed in the trap – more bait in the trap may increase the probability of the treadle being impeded. Collect and remove all old baits entirely rather than leaving on site as to prevent any alternative food source and potential missed captures.

6.3 Checking traps

ANIMAL WELFARE: In determining the duration and frequency of trapping, you should consider the purpose of your study and the potential welfare impacts from recapturing animals on multiple occasions (e.g., limitations on feeding, welfare of dependent young). Consider the duration and frequency that will allow the aim of the activity to be achieved with the minimal impact on animals. Some animals become 'trap happy' (entering traps on multiple consecutive nights) and this can impact their wellbeing by disrupting behaviours such as normal feeding, foraging, breeding and defending territories.

Avoid trapping in breeding seasons where lactating females may be separated from dependent young or when there is an increased likelihood of injury or separation of dependent young. However, many species breed throughout the year making it impossible to completely avoid trapping animals at sensitive times. If captured, lactating animals should be released as soon as possible. If the same lactating female is caught on successive nights, consideration should be given to moving or closing the trap.

Avoid or stop trapping in extreme weather conditions. Close traps if there is excessive rain or heavy rain is forecast. Plan ahead and monitor long-range and daily weather forecasts.

For programs such as *Western Shield* monitoring it is recommended that traps are set for a minimum of four consecutive nights.

- (a) All traps must be accounted for when setting and checking traps. Personnel undertaking the trapping should keep tallies of traps to ensure that all are checked on every occasion. This is the responsibility of the person in charge at the survey location on the day. There is no excuse for leaving traps unchecked.

ANIMAL WELFARE: The timing and frequency of trap checking, and clearing is determined by considering the behaviour and biology of the target species (and potential by-catch species) in association with the environmental conditions at the site. The timing and frequency of trap checks should be reviewed and adapted when and if conditions change or adverse events

occur. Traps may need to be checked more frequently throughout the day and/or night if prolonged trap confinement or environmental conditions are likely to increase the impact on animal welfare and affect survivorship.

- (b) Where nocturnal species may be captured, traps must be checked early in the morning during the period when temperatures will have minimal effect on the trapped animals (no later than 3 hours after sunrise but as early as possible in high temperature conditions). Unless diurnal species are being targeted, traps should remain closed until the following evening. If checking of traps cannot be completed within this timeframe, trap numbers must be reduced, or the number of personnel increased before any further trapping occurs.
- (c) Traps that remain open during the day must be situated in a position that is shaded throughout the day. If reptiles are likely to be trapped, traps should be checked immediately after periods of peak activity (e.g., late morning). If there is a risk of bird or diurnal mammal capture, checking must occur more frequently throughout the day. If traps need to remain open, the Animal Ethics application must provide compelling information to show that leaving traps open during the day will not impact animal welfare of target or non-target animals.

ANIMAL WELFARE: Consider the behaviour of species present at the site. Some 'trap happy' species (e.g., golden bandicoots) will push into an Elliott trap through a closed door (i.e., after it has been checked and closed for the day). If such species are likely to be present, traps should either be positioned in the shade throughout the whole day (even if closed) or removed from the ground.

- (d) An appropriate handling bag must be carried when approaching a trap to ensure efficient removal of the animal from the trap (see the department SOP for *Animal Handling and Restraint using Soft Containment*).
- (e) Bait within each trap should be checked daily and replaced when necessary. Traps without bait reduce the validity of trapping results.
- (f) The presence of ants in the trapping area can lead to detrimental impacts on captured animals. A small amount of surface insecticide (e.g., a liquid-based permethrin product such as Coopex) can be applied around and below traps to discourage ants. Extreme care must be taken to ensure that no free-standing liquid droplets remain when using liquid-based permethrin as absorption/ingestion can be lethal to frogs and reptiles. Always read the Safety Data Sheet (SDS) of chemicals before use. If ants become highly attracted to the trapping area, remove and relocate the traps to a more suitable position. One way to reduce risk of ant infestation is to remove bait each morning when clearing traps and replace when resetting in the late afternoon. Another option is to remove the trap from the ground and place it securely in a bush. Consider, however, how this may impact trap success (e.g. moving the trap could potentially disturb the area around the trap, which might make animals more wary and less likely to enter the trap at night).

ANIMAL WELFARE: If moderate to high numbers of ants are identified at a trap site, or if small numbers of ants cause welfare issues, then the trap must be closed or moved to another location.

- (g) Trapping data should be recorded on an appropriate trapping datasheet and transferred to a suitable database as soon as possible after trapping.

6.4 Removing animals from traps

All animal handling must be done by (or under the direct supervision of) trained and competent personnel. Techniques for removing animals from traps vary depending on the species involved and the experience and skills of the animal handler. This information is provided as a general guide only.

ANIMAL WELFARE: To ensure minimal stress to the animals, animals should only be handled for as long as required to identify them, undertake a brief assessment for any signs of injury, and to collect any necessary measurements (usually no more than five minutes). Animals must be released (or reach alternate end point) as soon as possible.

ANIMAL WELFARE: Ejection of pouch young is common in species of the Potoroidae and Peramelidae families. Personnel that may encounter species of these families whilst trapping must be familiar with the department SOP for *Short-term joey intervention procedures*. Records need to be kept on the care and fate of ejected pouch young for annual reporting requirements for the department's AEC approved projects.

- (a) Use handling bags appropriate for the species and length of containment as advised in department SOP for *Animal Handling and Restraint using Soft Containment*.

ANIMAL WELFARE: All handling bags and equipment should be kept clean to minimise risk of disease, contamination etc. Refer to the department SOP for *Managing Disease Risk and Biosecurity in Wildlife Management* for further guidance.

- (b) Remove animals from the trap as efficiently as possible.
- (c) First, check what kind of animal is in the trap. The first clue will be the weight of the trap when picked up. Gently push in one end of the trap so that you can just see inside but can quickly close the trap if the animal attempts to escape.
- (d) Venomous snakes may be captured in aluminium box traps and removal requires particular care. If no measurements are required, it may be easiest to choose a location where it is possible to place the trap on the ground in a vertical position, pull the pin in the side of the trap allowing the trap to unfold and to release the animal, and quickly move away from the trap.
- (e) To remove small animals from the trap into a handling bag, gently turn the trap upside down, wrap the opening of the bag firmly around the end of the trap, depress the door until it clicks open (or manually hold it open) and then gently slide the animal into the bag. Turning the trap upside down helps to avoid the animal getting caught under the treadle or door. It also helps prevent the door closing on the animal as it exits the trap. Care must be taken to ensure that the occupant of the trap is not crushed when the door is opened to extract the animal. Note that some animals may hold on to the trap mechanism and may not slide into the handling bag immediately.

If the animal is large such that there is little room to open the door (e.g., quenda) then place the entire trap in an appropriate bag and pull the pin on the side of the trap. Ensure that the animal is at the bottom of the bag and extract the trap before securing the top of the bag.

- (f) Once you are sure the animal is in the bottom of the bag, grasp the top of the bag and tie the opening closed.
- (g) Provided there is no risk to personnel safety, captured animals must undergo a brief assessment for any signs of injury.

ANIMAL WELFARE: Repeatedly recapturing individuals, particularly over a short timeframe, may increase the impact on their welfare. Consideration should be given to temporary marking individuals where (semi)permanent marking is not necessary to meet the objectives of a given project. This will aid animal handlers in understanding recapture rates. Recaptured animals should be released immediately when their data are not required. In cases where the same individual is being caught repeatedly, animal handlers should consider if sufficient data have been collected, and close the site/trap.

- (h) Captured animals must be released at point of capture (unless an alternate fate has been approved by the AEC). Animals should be released as soon as possible and at an appropriate time of day or night. Animals must be released, or reach an alternate endpoint approved by the department's AEC, within 24 hours of capture. Animals should be released into good shelter and caution taken to reduce exposure to risks such as predation.

6.5 Picking up traps

- (a) All traps must be counted out upon setting and counted in when removed from the trapping site.. Personnel undertaking the trapping should keep tallies of traps to ensure that all have been collected and that there are no traps remaining in the field. If traps are not being collected immediately after checking (i.e., traps are not being checked and picked up simultaneously), the traps must be closed on checking and remain closed until they are picked up. This is the responsibility of the person in charge at the survey location on the day. There is no excuse for leaving traps set in the field.
- (b) Ensure residual bait is removed from traps and flagging tape is removed from the area.

7 Trap hygiene and maintenance

- (a) Traps must be maintained in good working order.
- (b) Traps must be cleaned and disinfected after each trapping session. The trap release mechanism must be kept clean of bait and scats. Clean traps to reduce the risk of spread of disease to trapped animals and animal handlers. Advice on cleaning and disinfection is available in the department SOP for *Managing Disease Risk and Biosecurity in Wildlife Management*.

The most efficient way to clean box traps involves removing the pin and unfolding the trap to expose the interior, which can then be scrubbed clean with disinfectant and a stiff brush prior to the trap being reassembled. Traps should be rinsed clean with water after disinfection as the smell of chemicals may impact on capture rates.

Take care not to lose the pins. Pins should be reinserted from the trap door end only to avoid them accidentally being caught on vegetation and pulled out when lifting traps.

(c) During cleaning is a good time to check traps for damage; functionality should be checked, and traps should be checked for other damage such as sharp edges or holes/gaps resulting from rodents chewing through the aluminium. Any damaged traps requiring attention should be flagged and labelled in the field when a problem is identified so that it can be attended to and removed from use until repaired.

8 Competencies

A person who is competent has the knowledge, skills, and experiences that allow them to capture and handle animals successfully, and appropriately manage adverse events as required. Department personnel, and other external parties covered by the department's AEC, undertaking box trapping require approval from the committee and will need to satisfy the competency requirements (Table 1). Other groups, organisations or individuals using this SOP to guide their aluminium box trapping activities are encouraged to also meet these competency requirements as well as their animal welfare legislative obligations.

It should be noted that sampling design details such as intensity and scope of the project being undertaken will determine the level of competency required and Table 1 provides advice for standard monitoring only.

Table 1 Competency requirements for Animal Handlers of projects using aluminium box traps to capture fauna

Competency category	Competency requirement	Competency assessment
Knowledge	Broad understanding of the framework governing the use of animals in research and environmental studies in Western Australia	Training (e.g., DBCA Fauna Management Course or equivalent training). In applications, provide details on the course provider, course name and year.
	Understanding species biology and ecology	Personnel should be able to correctly identify the likely species to be encountered in aluminium box traps for the site(s) being studied and understand the species' biology and ecology. This knowledge may be gained through sufficient field experience and consultation of field guides and other literature.

	Understanding environmental conditions	Personnel should be aware of the environmental and seasonal conditions that may be expected on the project and understand location-specific animal welfare considerations. In applications, provide details of time spent undertaking similar work in similar locations.
Fauna survey and capture skills/experience required	Experience installing and checking aluminium box traps	Personnel should be familiar with the animal welfare principles of aluminium box trapping (e.g. appropriate locations for trap installation, frequency of trap checking depending on climatic conditions, considerations for trap closure). In applications, provide details on the longevity, frequency & recency of experience.
Animal handling and processing skills/experience required	Experience handling terrestrial fauna	Personnel should be experienced at retrieving fauna from aluminium box traps and restraint of the range of species likely to be captured. This experience is best obtained under supervision of more experienced personnel. In applications, provide details on experience relating to the expected species or species groups.
	Experience managing disease and biosecurity risk in wildlife management	Personnel should be familiar with hygiene procedures. This knowledge may be gained through sufficient field experience and consultation of literature.

In conjunction with possessing the required understanding and knowledge of aluminium box trapping procedures and animal welfare requirements, a guide to the experience and skill requirements for an animal handler to be considered competent to capture and handle animals is as follows: (noting that some personnel with experience may still require initial supervision in unfamiliar locations or with species that they have not encountered previously):

- Total time in field: minimum 4-8 weeks undertaking aluminium box trapping.
- Recency of time in field: within the past 5 years.
- Minimum 20 individuals of similar species handled.

9 Approvals

In Western Australia any person using animals for scientific purposes must be covered by a licence issued under the *Animal Welfare Act 2002*, which is administered by the Department of Primary Industries and Regional Development.

Projects involving wildlife may also require a licence/authorisation under the *Biodiversity Conservation Act 2016* (examples below). Personnel should consult the department's Wildlife Licensing Section for further guidance. It is your responsibility to ensure you comply with the requirements of all applicable legislation.

- Fauna taking (scientific or other purposes) licence (Reg 25)
- Fauna taking (biological assessment) licence (Reg 27)
- Fauna taking (relocation) licence (Reg 28)
- Section 40 Ministerial Authorisation to take or disturb threatened species.

10 Occupational Health and Safety

The following departmental SOPs for wildlife survey and monitoring activities are relevant to occupational health and safety:

- SOP *Managing Disease Risk and Biosecurity in Wildlife Management*
- SOP *Hand Restraint of Wildlife*

Departmental personnel, contractors and volunteers have duties and responsibilities under the *Occupational Safety and Health Act 1984* and Occupational Safety and Health Regulations 1996 to ensure the health and safety of all involved. Fieldwork is to be undertaken in line with the department's corporate guidelines, policies and standard operating procedures, including but not limited to, risk management and job safety analyses. Further information can be found at

<https://dpaw.sharepoint.com/Divisions/corporate/people-services/HS/SitePages/SOPs.aspx>

If department personnel or volunteers are injured, please refer to the departmental Health, Safety and Wellbeing Section's 'Reporting Hazards, Near-misses and Incidents' intranet page, which can be found at <https://dpaw.sharepoint.com/Divisions/corporate/people-services/HS/SitePages/Reporting-Hazards,-Near-Misses-and-Incidents.aspx>

11 Further Reading

The following SOPs have been mentioned in this advice and it is recommended that they are consulted when proposing to capture wildlife with aluminium box traps:

• Department SOP	<i>Animal Handling and Restraint using Soft Containment</i>
• Department SOP	<i>Short-term joey intervention procedures</i>
• Department SOP	<i>First Aid for Animals</i>
• Department SOP	<i>Managing Disease Risk and Biosecurity in Wildlife Management</i>
• Department SOP	<i>Euthanasia of Animals Under Field Conditions</i>

For further advice refer also to:

Environmental Protection Authority and Department of Environment and Conservation (2010) *Technical Guide - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (Eds. B.M. Hyder, J. Dell and M.A Cowan). Perth, Western Australia.

National Health and Medical Research Council (2013) *Australian code for the care and use of animals for scientific purposes*, 8th edition. Canberra: National Health and Medical Research Council.

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13 Glossary of Terms

Animal handler: A person listed on an application to the department's Animal Ethics Committee who will be responsible for handling animals during the project.

Arboreal: An arboreal animal inhabits or spends large amounts of time in trees.

Bait: A consumable lure used to attract the target species into a trap.

Scansorial: A scansorial animal is adapted to or specialised for climbing.

14 Appendix I: Universal Bait Recipe

Equipment

- Mixing bowl or bucket
- Mixing spoon (optional: can just use your hands)
- Container with lid to store bait
- Disposable gloves

Ingredients

- 500g Quick cooking oats
- 2 kg (5-6 375g tubs) Smooth peanut butter
- *Optional:* Between 110g (1 tin) and 636g (6-8 tins) Sardines (preferably in oil, or spring water)
- *Optional:* Cooking oil, preferably peanut oil
- *Note: Avoid using ingredients that contain additives, preservatives or artificial colours and flavours.*
- Serves: makes enough bait for approximately 100 cage traps for 4 trap nights.

Methodology

- Ensure personnel mixing bait are not allergic to peanuts.
- Place oats (and sardines if using) into clean mixing bowl or bucket and mix so that the sardines are well distributed though the oats.
- Mix in peanut butter until the oats and sardines are well distributed and the mixture is not too dry or too sticky. Form a ball that is sticky and cohesive. Keep in mind that the mixture will become drier over time as the oats absorb the oil from the peanut butter.
- Store bait in a sealed container.
- Clean bait mixing equipment.
- Add extra peanut butter if mixture becomes too dry. Water or cooking oil can be used if extra peanut butter is not available.

Optional: Bait can be pre-rolled.

Roll bait into balls ready for placing in traps (approx. 20c coin size for cage traps and 10c coin size for box traps). The bait balls can be counted to match the number of traps being set. This will ensure that you have enough bait for all traps being set and will also act as an additional check to ensure all traps have been set and baited.

Animal Welfare

To reduce the risk of impact of the use of universal bait on wildlife ensure that bait is stored for no longer than the specified period of 5 days fresh, or 3 months frozen, to avoid the risk of the components spoiling and being unsuitable for consumption. Where possible do not leave bait in open sun. Any old bait should be disposed of after trapping and not frozen for later reuse. Do not use bait or bait containers which contain mould.

Potential animal welfare impacts of mixing universal bait include:

- Food poisoning
- Changing behaviour by providing a food source