



Department of
Environment and Conservation

Our environment, our future



Standard Operating Procedure

Temporary marking of mammals, reptiles and birds

SOP No: 12.9

Prepared by:

Department of Environment and Conservation, Species and Communities Branch, Locked Bag
104 Bentley Delivery Centre WA 6983

Prepared for:

Department of Environment and Conservation's Animal Ethics Committee

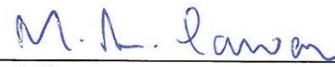
Version 1.0 (April 2013)

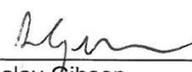
Revision History Log			
Version #	Revision Date	Author	Changes
1.0	21/04/2009	Vanessa Richter & Christine Groom	Created and drafted document
	5/01/2013	Rebecca Kay	Final draft
	24/04/2013	Rebecca Kay	Approved

Approvals

Version 1.0

Approved by:  Date: 12/2/13
 Dr Manda Page
 Principal Zoologist, DEC Species and Communities Branch

Approved by:  Date: 6/2/2013
 Mr Mark Cowan
 Senior Research Scientist, DEC Science Division

Approved by:  Date: 11/2/2013
 Dr Lesley Gibson
 Senior Research Scientist, DEC Science Division

Acknowledgements

Advice for compiling the content of this standard operating procedure was sought from a variety of internal documents including DEC's Animal Ethics Committee Approved Standard Operating Procedures. The authors would like to acknowledge the contributions of the following reviewers in improving the content of this standard operating procedure: Teagan Johnston, Nicole Godfrey, Manda Page, Mark Cowan and Lesley Gibson.

This document has been reviewed by the DEC Animal Ethics Committee.

Table of Contents

1	Purpose	2
2	Scope	2
3	Definitions	2
4	Approved Temporary Marking Methods	3
4.1	Paints, pens and dyes (mammals, reptiles and birds)	3
4.2	Adhesive tapes, streamers and spools of thread (mammals and reptiles)	3
4.3	Hair/fur removal (mammals)	3
5	Procedure outline.....	4
5.1	Animal handling	4
5.2	Applying a temporary marker.....	4
5.3	Hygiene	6
5.4	Marking birds using colour	6
6	Level of Impact	7
7	Ethical Considerations.....	7
7.1	Animal handling	7
7.2	Animal conspicuousness and longevity of markers	7
7.3	Toxicity of glue, paint, dye and powders.....	7
7.4	Stress caused by clippers	8
7.5	Pain/Irritation/infection	8
7.6	Snagging and entanglement.....	8
7.7	Hazards for other animals.....	8
7.8	Altered behaviour.....	8
7.9	Damage to body covering	8
7.10	Spread of disease or parasites	8
8	Competencies and Approvals.....	9
9	Occupational Health and Safety	10
9.1	Animal bites and scratches.....	10
9.2	Zoonoses	10
9.3	Allergies to animal materials.....	11
9.4	Use of sharp equipment.....	11

10 Further Reading 11

11 References 11

1 Purpose

Many monitoring activities require individual animals to be identifiable in the event of recapture during the same trapping period/event, or from a distance (Powell and Proulx, 2003). Temporary markers are useful for short term identification and are often used in conjunction with more permanent, less visible methods (e.g. microchipping etc.).

Temporary markers are usually visible on the animal and generally only last a short time (usually less than 12 months) (Powell and Proulx, 2003, Mellor *et al.*, 2004). The type of temporary marker used must be matched to monitoring objectives and must be appropriate for the animal's size, future growth, body shape and behaviour.

Temporary marking of fauna as described in this SOP can include the use of:

- paints, pens and dyes
- adhesive tapes and streamers
- hair/fur removal

Temporary markers are commonly available, versatile, cost effective, and quick and easy to apply. There is usually no need to recapture the animal to remove markers as they generally wear off over time.

This standard operating procedure (SOP) provides general advice on temporary marking methods of mammals, reptiles and birds. If colour marking (paint/dye) wild birds, this SOP must be used in conjunction with the Australian Bird and Bat Banding Scheme (ABBBS) and Australian Bird Bander's Manual (Lowe, 1989).

2 Scope

This SOP applies to all fauna survey and monitoring activities involving the temporary marking of mammals, reptiles and birds undertaken across the State by the Department of Environment and Conservation (DEC) staff and volunteers, NRM groups, consultants, researchers and any other individuals or organisations monitoring fauna. All personnel involved in monitoring fauna using temporary marking techniques 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 of Practice* contains an introduction to the ethical use of animals in wildlife studies and should be referred to for broader issues. A copy of the Code may be viewed by visiting the National Health and Medical Research Council website (<http://www.nhmrc.gov.au/>). In Western Australia any person using animals for scientific purposes must be covered by a licence issued under the provisions of the *Animal Welfare Act 2002*, which is administered by the Department of Agriculture and Food, Western Australia.

Please note: Projects involving wildlife research require a licence to take (i.e. capture, collect, disturb, study) fauna for scientific purposes (Reg 17) under the provisions of the *Wildlife Conservation Act 1950*. Other licences may also be applicable and care should be taken to ensure that the appropriate licences and permits are adhered to when planning any project.

Note that there are other temporary marking methods not described in this SOP such as staining techniques (e.g. methylene blue staining on amphibians) and application of fluorescent pigments (amphibians and reptiles). All projects involving the temporary marking of fauna must be approved by the DEC Animal Ethics Committee. Other temporary marking methods to those described in this SOP may also be appropriate and their use is not excluded. Projects approved by the DEC Animal Ethics Committee preferring to use alternative temporary marking methods to those mentioned here may do so if they can describe the differences in detail, are shown to be effective and have acceptable levels of impact on animals.

3 Definitions

“A” Class Authority: An authority issued to competent bird banders who have sufficient skills and experience to undertake banding without supervision (Lowe, 1989).

Analgesic: a remedy that relieves or removes pain.

Animal handler: A person listed on an application to the DEC Animal Ethics Committee that will be responsible for handling animals during the project.

Capture Myopathy: A condition associated with the capture and handling of many species of mammals and birds that results in degeneration of skeletal and/or cardiac muscle.

Temporary marker: A method for identifying individuals or cohorts of animals when identification is required to last only a short time, relative to the lifespan of the animal. They tend to be more visible from a distance than more permanent markers (Mellor *et al.*, 2004).

4 Approved Temporary Marking Methods

Marking methods must be selected carefully. Where there is a choice, the type of marker chosen should minimise distress and cause the least interference with the normal functioning of the animal. Markers that require limited or no handling to detect/read should also be given preference (Sharp *et al.*, 2007).

Markers must be appropriate for the species physically (suitable for body covering), physiologically and behaviourally.

4.1 Paints, pens and dyes (mammals, reptiles and birds)

Using paint, pen or dye can be of immense value for short-term studies as it allows identification without repeated recapture of the marked animals where desired. Non toxic paint, pen or dye can be applied to the body covering of the animal (with dyes producing longer lasting results when compared to paint), and is usually lost over time through wear or hair/skin/feather shedding (Mellor *et al.*, 2004). These markers are particularly useful where the body covering of the animal is light in colour, but this also increases the visibility of the animal and therefore its risk of predation.

This method of marking is not suitable for amphibians.

4.2 Adhesive tapes, streamers and spools of thread (mammals and reptiles)

In order to increase an animal's visibility for a short period of time, coloured or reflective tapes can be attached to the animal. The markers are chosen to contrast with the natural colour or texture of the animal and are generally attached to the body covering (e.g. skin, hair, shell or feather) using non toxic glue (Mellor *et al.*, 2004).

Spools of thread are temporary trailing markers, commonly used to track animals. Refer to SOP 13.1 Temporary tracking for more advice.

Some tape, streamer or spool markers can possibly lead to the animal being injured or even dying by becoming entangled in the device or getting snagged. The marker must be attached in a way that if the marker gets snagged, the animal can break free. Adhesive tapes and streamers which will not degrade or drop off the animal must be removed from the animal.

Adhesive tape, streamers and spools of thread will increase the visibility of an animal and increase its risk of predation.

4.3 Hair/fur removal (mammals)

This marker is suitable for animals with sufficient hair/fur. Small patches of hair/fur are removed by shearing or clipping. Groups or individuals may be identified by using combinations of different numbers, patterns and/or mark locations (Mellor *et al.*, 2004).

Electric clippers are permitted as long as their operation does not produce excessive noise and/or vibration. Chemical depilatory pastes are unacceptable due to the irritating nature they have on skin.

5 Procedure outline

5.1 Animal handling

Temporary marking methods require that animals be captured and/or restrained in order to apply the marker.

- (a) Techniques for handling animals vary depending on the species involved and the experience and skills of the personnel. General advice on handling of animals is contained in SOP 10.2 Hand restraint of wildlife. All handling of animals should be done by (or under the guidance of) experienced personnel.
- (b) Use handling bags appropriate for the species and length of containment as advised in SOP 10.1 Animal handling/restraint using soft containment.
- (c) If an animal is injured during temporary marking treat any superficial wounds with a topical antiseptic (e.g. Betadine ®) (refer to SOP 14.2 First aid for animals).
- (d) If an animal is seriously injured, refer to the flowchart in SOP 15.1 Humane killing of animals under field conditions in wildlife management to make the decision on whether or not to euthanase or seek veterinary care. Any serious injuries to animals must be reported to the DEC Animal Ethics Committee Executive Officer.
- (e) Captured animals must be released at point of capture (unless the purpose of the trapping is translocation or other approved reason). Animals must be released, or reach an alternate endpoint approved by the DEC Animal Ethics Committee, within 24 hours of capture (unless otherwise approved). Animals should be released at a time when they are normally active.

5.2 Applying a temporary marker

- (a) Decide on the optimum placement of the mark giving consideration to the purpose of marking as well as the welfare of the animal. This should form part of planning any temporary marking project. If the animal is to be recaptured via trapping, it is preferable to mark the animal in a discrete location where possible to reduce any significant change to its “normal visibility”. This may be achieved by placing marks ventrally. Where identification of an individual by visual means without recapture is central, dorsal or lateral markings may be appropriate.
- (b) Firmly restrain the animal (with larger or difficult animals this is easier with two people, one holding the head and the other the rump), exposing the marker application site and leaving the rest of the body in the handling bag or covered with a towel to keep the animal calm.
- (c) Apply the marker approved by the DEC AEC. Comments on the application of particular markers are as follows:
 1. **Paint, pen and dye:** Apply non toxic paint/dye or xylene free pen to the area of the animal that will be most visible to the observer (see Table 1). Stencils may be used if individual animals are required to be recognised (Sharp *et al.*, 2007). These markers must never be applied to an area containing a wound and care must also be taken to avoid sensitive areas such as the eyes, nose and ears.

Care must be taken not to saturate the animal's fur/feathers in order to avoid hypothermia or matting of feathers/fur.

Table 1: Recommended placement of paint/pen/dye on the body of an animal.

	Recommended area of paint/pen/dye placement
Mammal	Back, upper inside or back of the ear
Reptile	Back or belly (reptiles trapped in pits can be marked on the belly because they must be handled anyway) (Figure 1).

Bird	Tail (Figure 2), back or chest **Paint/dye should not be applied to the wings of birds due to the possibility of it affecting the aerodynamic properties of the wings (Sharp <i>et al.</i> , 2007).
-------------	--



Figure 1 paint mark on the underside of a lizard. Photo by J. Krawiec



Figure 2 using non-toxic pigment based artists ink to mark tail feathers. Photo by C. Groom/DEC

2. **Adhesive tape or streamers:** Secure the marker to the animal by either gluing it directly onto the skin/fur with non toxic glue or by taping it in place by wrapping the tape around a section of the body and then gluing the marker onto the animal (this tape must be removed once the marker has adhered to the animal). For marsupials with pouches, take care that adhesive does not restrict access to pouch.

The attachment of the trailing devices must be weak enough so the device can break free if it becomes caught and must not be tight as to restrict movement.

3. **Clipping hair/fur:** Use blunt-ended, curved blade scissors or clippers to clip hair from a small area of the animal that will be most visible to the observer. Monitor the animal for any sign of stress caused from the noise/vibration of clippers.

- (d) Allow marker to dry or adhere to the animal. For birds, hold painted feathers apart to allow them to dry (this ensures feathers do not stick together and impede flight).

Note - The process to this point should not exceed 5 minutes per animal.

- (e) Release the animal at point of capture unless a suitable alternative is approved by the AEC.

5.3 Hygiene

Precautions must be taken to prevent the spread of infectious disease from one animal to another and all equipment must be cleaned and disinfected between animals. Refer to SOP 16.2 Managing disease risk in wildlife management.

5.4 Marking birds using colour

The ABBBS is responsible for authorising and coordinating all forms of colour marking of birds in Australia. Wild birds must only be marked by personnel with a Bird Banding Authority (Colour Marking Authority) and in accordance with the Australian Bird and Bat Banding Scheme (ABBBS) guidelines.

Prior to commencing any type of marking, banders are required to apply in writing, stating the reasons for undertaking colour marking (Lowe, 1989). Only personnel with an "A" Class Authority are able to apply for a Colour Marking Authority.

All colour marking must be recorded with the banding details and forwarded to the Banding Office on Type II Data Sheets. Refer to the Australian Bird Bander's Manual (Lowe, 1989) for more information.

6 Level of Impact

Potential animal welfare impacts when temporarily marking mammals, reptiles and birds include:

- Distress (caused by handling, discomfort, social isolation, separation of mother and young)
- Trauma (possible injury to the animal during restraint eg. scratching itself, biting itself)
- Extra weight resulting in a reduction in mobility (e.g. trailing devices)
- Reaction from paints/dyes and glue.
- Increased predation by other animals because of increased visibility.
- Inhibition of normal behaviours (e.g. interference with ability to fly, glide, burrow, etc.).
- Hypothermia and/or sunburn from removing excessive amounts of hair.
- Entanglement/snagging on branches or other objects.

It should be noted that whilst these impacts are specifically associated with the techniques of temporary marking, an animal may also experience other impacts from associated procedures such as trapping and capture.

7 Ethical Considerations

To reduce the level of impact of temporary marking on the welfare of animals there are a number of ethical considerations that should be addressed by personnel throughout projects involving these procedures. DEC projects involving the use of temporary markers on mammals, reptiles and birds will require approval from the DEC Animal Ethics Committee and where appropriate the following ethical considerations must be adequately covered in any application for approval to undertake research involving vertebrate animals.

7.1 Animal handling

To ensure minimal stress to the animals they should only be handled for as long as required to mark them and to collect any necessary measurements (usually no more than five minutes). They must be released within 24 hours of capture (unless otherwise approved). Improper restraint, especially when dealing with a stressed and frightened animal can lead to major physiological disturbances (hyperthermia, stress, shock capture myopathy). It is preferable that handling be done during the cooler periods of the day (dawn/dusk). Refer to SOP 10.1 Animal handling/restraint using soft containment and SOP 10.2 Hand restraint of wildlife.

7.2 Animal conspicuousness and longevity of markers

Visibility of marked animals to predators may be increased and care should be taken to choose a marker that limits this possibility (i.e. avoid highly contrasting colours). Paints and dyes may have unknown effects on an animals cryptic colouration and therefore on predation (Bourne, 2004). The use of excessive amounts of paint on reptiles should be avoided to reduce the impact the mark might have on survivorship (Ferner, 1979).

Animals captured in pitfall traps must be handled to remove them from the trap, so marks are easy to apply, preferably to the underside of the animal. This means that their cryptic dorsal colouration is not disrupted.

This SOP covers marking techniques that are temporary in nature, however, some methods last longer than others. Those that last longer will potentially impact the animal for longer. Those that last for a short period of time may result in the animal requiring recapture and handling more often to reapply the marking technique.

7.3 Toxicity of glue, paint, dye and powders

Caution must be used when selecting paint/dye for use on animals as some paints and solvents may

be toxic and, if absorbed through the skin, could cause illness or death of the marked animal. Non toxic glue, paint, dye, pens and powders must always be chosen to reduce the risk of illness and even death through ingestion or absorption of the product. Any paint/dye used must also be fast drying. Paints and dyes should never be used on amphibians due to their moist and highly absorbent skin.

7.4 Stress caused by clippers

Any clippers used to remove fur from animals must emit minimal noise and vibration to minimise stress to the animals.

7.5 Pain/Irritation/infection

For any tissue anchorage of temporary markers, the appropriate restraint, anaesthetic, analgesic and antiseptic measures must be taken.

Depilatory creams used for hair removal can cause pain and skin irritations and their use will not be endorsed.

Refer to SOP 14.2 First aid for animals for further information.

7.6 Snagging and entanglement

Some tape, streamer or spool markers can lead to the animal being injured or even dying by becoming entangled in the device or getting snagged. The placement and attachment of these markers should be carefully considered to ensure minimal impacts on animals. The attachment of the trailing devices must be weak enough so the device can break free if it becomes caught and markers which will not degrade or drop off the animal must be removed from the animal.

If tapes/streamers are to be used, DEC Animal Ethics Committee requires justification of the proposed attachment system and position. It is recommended that the marker should be a maximum of 10% (preferably less than 5%) of the animal's body mass.

7.7 Hazards for other animals

Once markers fall off an animal they have the ability to become a hazard for other animals which may ingest them or get snared/entangled in them. Markers that will not degrade or drop off the animal must be removed from the animal. Wherever it is possible or practical, biodegradable materials should be used.

7.8 Altered behaviour

Some animals will increase the time spent grooming due to the application of paint and care must be taken to place the marker in an area which limits this behaviour (e.g. apply mark to the back of the head which is difficult to reach).

7.9 Damage to body covering

The removal of hair or fur may affect thermoregulation and the ability of the animal to deal with its environment and the weather. Excessive amounts of hair/fur must not be removed (Bourne, 2004; Sharp *et al.*, 2007). Many mammal species have a different coloured undercoat and so it may only be necessary to remove the top layer of guard hairs to make an observable mark.

The application of paint to thickly furred animals is not advised. Paint tends to cause clumping and matting of fur and can lead to fur loss or problems in the underlying skin, or to excessive ingestion due to grooming (Beausoleil *et al.*, 2004).

Over application of paint/dye can leave an animal wet and susceptible to hypothermia. It is recommended that quick drying paint/dyes be used when marking animals to avoid this.

Paints/dyes must be used sparingly on feathers because of the impacts on feather structure and function (Gaunt *et al.*, 1997). Caution is required when applying dyes/paints as the alcohol or detergent base can remove oil from bird's feathers and wetting can lead to hypothermia. All birds must be thoroughly dried prior to release (Gaunt *et al.*, 1997).

7.10 Spread of disease or parasites

Personnel must be aware of the possibilities of transferring disease or parasites from animal to animal as well as from one location to another if handling animals at multiple sites.

Good hygiene practices should be maintained to reduce the risk of spreading pathogens between animals and sites. Refer to SOP 16.2 Managing disease risk in wildlife management for further advice.

8 Competencies and Approvals

DEC personnel, and other external parties covered by the DEC Animal Ethics Committee, undertaking projects that involve temporary marking of mammals, reptiles and birds require approval from the committee and will need to satisfy the competency requirements detailed in Table 2. This is to ensure that the personnel involved have the necessary knowledge and experience to minimise the potential impacts of temporary marking on animals. Other groups, organisations or individuals using this SOP to guide their fauna monitoring activities are encouraged to also meet these competency requirements as well as their basic animal welfare legislative obligations.

It should be noted that the details, such as intensity of the study being undertaken will determine the level of competency required and Table 2 provides advice for basic monitoring only.

Table 2: Competency requirements for Animal Handlers of projects involving temporary marking of mammals, reptiles and birds.

Competency Category	Competency Requirement	Competency Assessment
Wildlife licenses	1.1 Licence to take fauna for scientific purposes (Reg 17) OR 1.2 Licence to take fauna for educational or public purposes (Reg 15) If marking birds will also require 1.4 Licence to capture and mark birds or bats (Reg 23)	Provide SC (DEC personnel only) or SF licence number Provide TF licence number Provide licence number
General licenses/permits	If colour marking birds the following will be required. 2.6 ABBBS Banding Authority A class AND 2.9 ABBBS Colour Marking Authority	Provide permit number Provide permit number
Formal qualifications and course certificates (Note: Suitable levels of skills/experience can substitute for formal training requirements)	3.5 TAFE qualifications in fauna management and handling OR 3.7 CALM Mammal Conservation Course (1992-1995) OR 3.8 CALM/DEC Fauna Management Course (1997-)	Provide course year, TAFE facility Provide course year Provide course year

Competency Category	Competency Requirement	Competency Assessment
General skills/experience	5.1 Relevant knowledge of species biology and ecology	Personnel must be able to correctly identify the likely species to be encountered at the site/s being studied. This knowledge may be gained by sufficient field experience and/or consultation of field guides and other literature. Estimated total time in field: Minimum 1 year involved in similar projects.
Animal handling and processing skills/experience	Any of the following may be required depending on the purpose of the study. 7.1 Experience in handling terrestrial mammal fauna 7.2 Experience in handling terrestrial herpetofauna 7.3 Experience in handling birds 7.5 Experience in measuring and marking non-bird and non-bat vertebrates	Personnel must be confident at handling mammals, reptiles and birds in the application of various temporary marking techniques likely to be used in fauna monitoring and surveying. This experience is best obtained under supervision of more experienced personnel. Estimated total time in field: Minimum 1 year involved in similar projects.

9 Occupational Health and Safety

First aid kits should always be carried in vehicles. You must be aware of your own safety and the safety of others as well as the animals during handling.

It is recommended that a job safety analysis is undertaken prior to undertaking temporary marking of mammals, reptiles and birds. This safety analysis should include the following considerations.

9.1 Animal bites and scratches

Most animals will bite and scratch during animal handling and this can result in injuries to handlers. All injuries (even superficial ones) should be appropriately treated as soon as possible to prevent infection and promote healing.

Personnel should have up-to-date tetanus vaccinations.

If DEC personnel or volunteers are injured an "Incident and Near Hit Notification" form must be completed and forwarded to DEC's Risk Management Section.

9.2 Zoonoses

There are a number of diseases carried by animals that can be transmitted to humans (i.e. zoonoses such as Toxoplasmosis, Leptospirosis, Salmonella etc.). 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 SOP 16.2 Managing disease risk in wildlife management.

9.3 Allergies to animal materials

Some personnel may develop allergies when they come in contact with animal materials such as hair and dander. Personnel known to develop allergies should wear gloves when handling animals and long sleeved pants/shirt.

Personnel/volunteers with severe allergies associated with animals, with immune deficiency diseases or on immunosuppressant therapy should not engage in the handling of wildlife.

9.4 Use of sharp equipment

Care must be taken when using sharp implements such as scissors to avoid injury (e.g. cuts).

10 Further Reading

The following SOPs have been mentioned in the advice regarding temporary marking of mammals, reptiles and birds. It is recommended that the following SOPs are also consulted when proposing to undertake temporary marking of mammals, reptiles and birds.

- SOP 10.1 Animal handling/restraint using soft containment.
- SOP 10.2 Hand restraint of wildlife
- SOP 13.1 Temporary tracking
- SOP 14.2 First aid for animals
- SOP 15.1 Humane killing of animals under field conditions in wildlife management
- SOP 16.2 Managing disease risk in wildlife management

11 References

Beausoleil, N.J, Mellor, D.J, Personnelord, K.J (2004). Methods for marking New Zealand Wildlife: amphibian, reptile and marine mammals. New Zealand Department of Conservation.

Bourne, D. (2004.). Mammal husbandry and management. Wildpro module. Wildlife Information Network, United Kingdom.

Chapman, T., Sims, C. and Mawson, P. (2008). Minimising Disease Risk in Wildlife Management. Standard Operating procedures for fauna translocation, monitoring and euthanasia in the field. 2nd edition. Department of Environment and Conservation, Perth.

Ferner, J.W. (1979). A review of marking techniques for amphibians and reptiles. Society for the Study of Amphibians and Reptiles.

Gaunt, A.S, Oring, L.W., Able, K.P, Anderson, D.W, Baptisa, L.F, Barlow, J.C and Wingfield, J.C. (1997). Guidelines to the use of wild birds in research. The Ornithological Council, Washington

Lowe, K.W. (1989). The Australian Bird Bander's manual. Australian Bird and Bat banding schemes and Australian National Parks and Wildlife Service.

Mellor, D.J., Beausoleil, N.J. and Personnelord, K.J. (2004). Marking amphibians, reptiles and marine mammals: animal welfare, practicalities and public perceptions in New Zealand. New Zealand Department of Conservation.

NHMRC (2004). Australian code of practice for the care and use of animals for scientific purposes. National Health and Medical Research Council, Commonwealth of Australia 7th Edition.

Powell, R.A. and Proulx, G. (2003). Trapping and marking terrestrial mammals for research: integrating ethics, performance criteria, techniques and common sense. ILAR Journal 4 (44): 259-276.

Sharp, T., Saunders, G. and Mitchell, B. (2007). Model standard operating procedures for the humane research of pest animals in Australia. New South Wales Department of Primary Industries.