USQ AEC Standard Operating Procedure
Temporary marking of animals

USQ AEC SOP ID: WL023

This Standard Operating Procedure (SOP) is applicable to all USQ Research Workers who care for and use Animals for Scientific Purposes. The procedure must only be performed by those persons who have been deemed competent, and who believe they remain competent to do so. Access to supervision by suitably qualified staff whilst undertaking this procedure is encouraged, where required.

Species

- Various mammal species
- Various reptile species

Purpose

The purpose of this SOP is to describe the procedure of temporarily marking animals of various sizes during fauna surveys. Temporarily marking animals (such as reptiles or short-lived mammal species) allows the identification of individuals and the identification of recaptures from previous days of the surveys (Powell & Proulx 2003; Department of Biodiversity, Conservation, and Attractions 2017). Data on marked animals can be used to estimate population size of that species, record movement between sites, observe behaviour of individuals, and can help to ensure animals are not over-handled by students within teaching practicals. Methods of temporary marking can include paints, dyes, and fur removal (Australian Wildlife Conservancy 2013). The method used for any given individual will be dependent on the species and its life history (Powell & Proulx 2003).

Paint or dye can be applied to the fur, skin, or scales of animals, and different colours or locations of the paint can be used to distinguish between individuals. Non-toxic paints must be used, and could include liquid paper, nail polish, or paint pens (Australian Wildlife Conservancy 2013). This technique can last between days to months, dependent on moulting, wear, and rate of fade of the paint used (Australian Wildlife Conservancy 2013).

Fur removal can be used to mark animals to identify recaptures, and different locations or unique patterns of fur removal can be used to distinguish between individuals (Powell & Proulx 2003). If possible, avoid the use of powered clippers to reduce stress (noise) to the animal (Australian Wildlife Conservancy 2013). The amount of fur clipped/removed should be suitable to the size of the animal. This technique can last between weeks to months, dependent on the rate of hair growth (Australian Wildlife Conservancy 2013).

Definitions

Nil.	

Linked SOPs

SOP ID number	SOP title
WL019	The use of box and cage traps
WL012	Dry pitfall trapping for vertebrates

Potential Hazard to Research Workers

USQ Risk Management Plan ID number	USQ Risk Management Plan title
RMP_2020_4960	Wildlife research and teaching fieldwork

Personal Protective Equipment required

- Appropriate gloves for handling animals

Animal wellbeing considerations

Perceived stressors	Management strategy
Disease risk	Handlers must wash hands thoroughly before and after handling animals.
Stress from a prolonged process	Handlers must be sufficiently trained prior to starting work to ensure the process is done quickly.
Heat or cold stress	Marking should not be undertaken if the animal is likely to be exposed to temperature extremes. Excessive amounts of fur should not be removed.
Handling of animals	Animals should be handled so as to cause minimal stress (such as keeping animals' eyes covered) and under normal circumstances, be released as soon as processing is completed.
Toxicity of paint and dyes	Make sure to select non-toxic paints or dyes for use on animals as some paints may be toxic, and if absorbed through the skin or ingested could cause illness.
Susceptibility to predators	It may be possible that the use of paints or dyes could make the animal more conspicuous, and thereby increase risk of predation. This risk is small, and only applicable for as long as the mark lasts (i.e. temporary). To reduce the risk, the mark could be placed in an area not as visible to predators, such as the ventral surface of the animal (if appropriate).

The overall perceived level of risk to an animal undergoing this procedure is:

	High		Medium	X	Low

Substances to be administered

Substance	Dose	Route	Purpose

Equipment/ materials required

- Datasheet
- Non-toxic paint or dye (unlikely but check it does not contain lead or toxic solvents)
- Scissors (preferably blunt-ended curved scissors)
- Clippers

Site specification or location requirements

N/A

Waste disposal

N/A

Duration of the procedure

	Duration
Pre-procedure and preparation	Less than a minute to prepare materials
Procedure	1-5 minutes to handle animal and mark
Post-procedure and monitoring	Monitoring of marked animals – 1-3 minutes to confirm no adverse effects.

Procedure

Paints and dyes

1. Before handling the animal, decide on the appropriate placement of the mark, taking into consideration the welfare considerations and longevity of the mark (e.g. placing the mark in a spot that is unlikely to rub off within a few days).

2. While the animal is in a bag, gently manipulate the animal such that the animal has its head pointing towards the opening of the bag. Grip the animal as appropriate for the species (e.g. behind the jawbone and holding the rump for possums, a two-finger grip for rodents, etc.). Once firmly held, open the bag to expose the required body part of the animal, but keeping the eyes covered.
3. Apply the mark to the animal using the non-toxic paint or dye. A stencil, different location of the mark, or different colour mark may aid in individually identifying animals (see Figure 1). Take care not to get the paint or dye in sensitive areas such as eyes, nose, ears, mouth, or wounds. Avoid saturating the animal with the paint or dye.
4. Allow the mark to dry before covering the area with the bag.
5. Make note of the mark location, colour, and shape on a datasheet.
6. Allow the animal to rest in the bag, and monitor the animal's behaviour briefly for no adverse effects.

Figure 1: Examples of different individual marks using non-toxic paint on a reptile

Fur removal

1. Before handling the animal, decide on the location and size of the fur removal. This should be appropriate to the animal being marked (e.g. approximately 5 mm square of trimmed fur on a mouse sized animal; 3 cm square of trimmed fur on an adult brushtail possum sized animal. Gather equipment (such as scissors or clippers).
2. While the animal is in the bag, gently manipulate the animal such that the animal has its head pointing towards the opening of the bag. Grip the animal as appropriate for the species (e.g. behind the jawbone and holding the rump for possums, a two-finger grip for rodents, etc.). Once firmly held, open the bag to expose the required body part of the animal, but keeping the eyes covered.
3. Trim or clip the fur from a small area of the animal that will be easily visible to observers (see Figure 2).
4. Make note of the location, size, and shape of the trimmed fur on a datasheet, or take a photograph.
5. Allow the animal to recover in the bag and monitor the animal's behaviour briefly for no adverse effects.

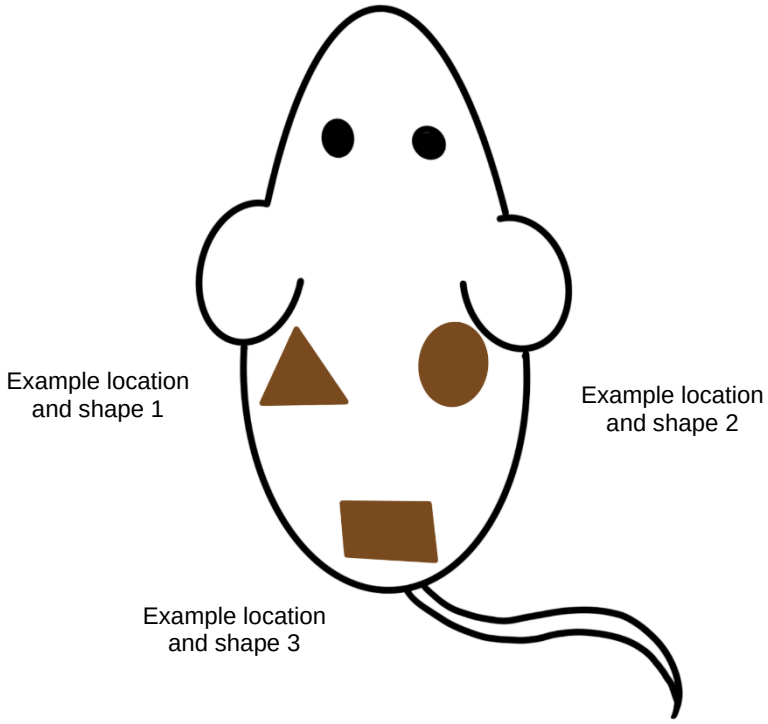

Figure 2: Example of different shape or location fur removal marks on a small mammal

Training, qualifications or competencies required

Researchers with relevant experience or qualifications may undertake this SOP to complete the required procedures. Student researchers must receive appropriate training and supervision prior to undertaking procedures.

References

Australian Wildlife Conservancy (2013), *Animal trapping, handling, sampling and photographing guidelines,* AWC trapping, handling and sampling guidelines (environment.gov.au).

Department of Biodiversity, Conservation, and Attractions (2017), *Standard Operating Procedure – Temporary Marking of Mammals, Reptiles, and Birds*, Version 1.1.

Powell, RA, Proulx, G (2003), 'Trapping and marking terrestrial mammals for research: integrating ethics, performance criteria, techniques, and common sense', *ILAR Journal,* vol. 44, pp. 259-276.

Licences and permits

As this SOP involves the capture and handling of native Australian wildlife ensure any required licences and/or permits to undertake the procedure(s) under this SOP are obtained before undertaking this SOP.

SOP approval and review history

Date	Version	Review pathway	Notes
3 November 2021	0.0	**07/10/2021** USQ AEC "Subject to Modifications." **03/11/2021** Reviewed and approved by the USQ AEC Executive.	N/A