Standard Operating Procedure

SC22-19 SEMI-PERMANENT MARKING OF MAMMALS USING EAR TAGS

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 1.2

August 2022

GOVERNMENT OF WESTERN AUSTRALIA

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Revision History Log

Version	Date	Details	Author/Reviewer	Approved By	Approval
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1.1	22/05/2017	Minor changes	G. Yeatman and M. Page	M. Page	August 2017
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Approvals: Version 1.2

Approved by the DBCA Animal Ethics Committee: Martin Dziminski Digitally signed by Martin Dziminski Date: 2022.09.15 17:35:18 +08'00'

Dr Martin Dziminski
Chair, Animal Ethics Committee
Department of Biodiversity, Conservation and Attractions

Contents

1 Acknowledgements

This standard operating procedure was originally developed by Christine Freegard and Vanessa Richter, with contributions from Neil Thomas, Nicky Marlow and Nicole Godfrey.

2 Purpose

Ear tags are commonly used to mark mammals so that individuals can be monitored. Ear tagging must be matched to monitoring objectives and must be appropriate for the animal's size, future growth, body shape and behaviour. Although tags are sturdy enough to last the lifetime of the animal, they may be lost; and therefore, ear tagging is considered a semi-permanent method of marking.

The ear tag can be applied in each ear and in case one is lost the animal can still be identified by a second; however, the animal might lose both tags and the method does not guarantee long term identification (Diefenbach & ALT, 1998; Oosthuizen, 2010; Belser et al., 2017). Ear tags must not be used on species with delicate ears, as rate of tag loss and injury to animals is high (e.g., bilby).

This Standard Operating Procedure (SOP) provides advice on the safe application of ear tags to mammals.

3 Scope

This SOP has been written specifically for scientific and education purposes, and endorsed 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 ear tags for semi-permanent marking of mammals 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 fauna research and management should be familiar with the content of this document.

Projects involving wildlife may require a licence/authorisation under the *Biodiversity Conservation Act 2016*. Personnel should consult the department's Wildlife Licensing Section and AEC Executive Officer for further guidance. In Western Australia any person using animals for scientific purposes must also be covered by a licence issued under the *Animal Welfare Act 2002*, which is administered by the Department of Primary Industries and Regional Development. This SOP complements the *Australian code of practice for the care and use of animals for scientific purposes* (The Code). The Code contains an introduction to the ethical use of animals in wildlife studies 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 (http://www.nhmrc.gov.au).

4 Animal Welfare Considerations

To reduce the level of impact of ear tagging 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 ear tagging, and to ensure that contingencies for managing welfare issues have been identified. Ensure that all handlers and volunteers involved in the project are aware of the range

of issues that they may encounter, the options that are available for reducing impact and improving animal welfare, and the process for managing adverse events.

Department projects involving semi-permanent marking of mammals using ear tags will require approval from the department's AEC. The key animal welfare considerations that should be considered when semi-permanently marking mammals using ear tags are listed below and are highlighted throughout the document.

4.1 Injury and unexpected deaths

If adverse events including injury, unexpected deaths or 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 Events Form*. Guidance on field euthanasia procedures is described in the department SOP for *Euthanasia of Animals Under Field Conditions*. Where disease may be 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 when ear tagging animals include:

- Distress caused by handling (discomfort, social isolation, separation of mother and young).
- Trauma (possible injury to animal during restraint. e.g., scratching or biting itself).
- Pain during insertion of the ear tag(s), which is usually brief.
- Infection at site of tag insertion.

It should be noted that whilst these impacts are specifically associated with the procedure of ear tagging, an animal may also experience other impacts from associated procedures such as trapping and capture. Investigators must be aware that the effects of a series of stressors, such as trapping, handling, transportation, sedation, anaesthesia and marking can be cumulative.

5 Approved Ear Tags

5.1 Monel self-piercing ear tags

These tags are made of metal and are stamped with numbers which enable individual animals to be identified by reading the tag (Figure 1A and 1B). Most Monel ear tags (Figure 1A) used in Western Australia are sourced from the National Band and Tag Company (USA). Tag numbers can be prefixed with letters to identify sites or study/project names. These prefixes and number ranges can be specified when ordering. It is recommended that all tags for the department use are ordered through the Western Shield Zoologist, to ensure there are no duplications in prefixes and numbers. This is particularly important when, more than one study is being conducted in an area where individual animals may be observed by either study.

5.2 Two-piece sheep swivel tag

Two-piece swivel tags are manufactured for applying to sheep (Figure 1B); however, they are also useful for marking large mammals such as kangaroos and wallabies. The swivel action means that there is no loop, consequently the chances of the device being caught and ripping the ear is reduced.

The tags can be ordered in a variety of colours, and different colours can be used to identify different cohorts or study groups. Coloured reflective tape can be applied to distinguish individuals and increase visibility when spotlighting. If individual identification is also required, it is recommended to fit a swivel tag in one ear and an individually number metal tag in the other.

This method of tagging has been used on large macropod species that are difficult to re-trap but may be observed via spotlighting.

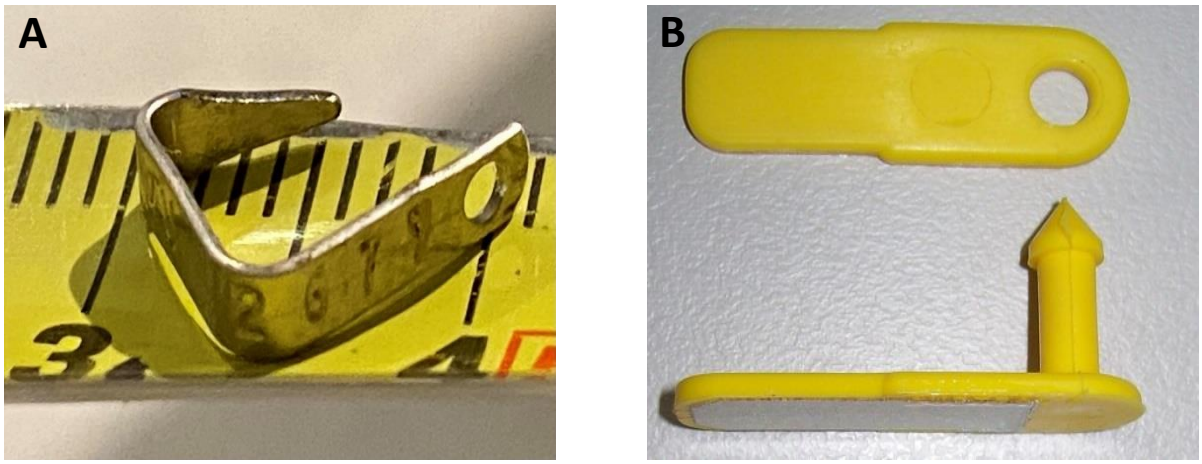

Figure 1 (A) A Monel self-piercing ear tag. Photo: Leticia Povh (DBCA). (B) A two-piece sheep swivel tag, female part on the top and male part on the bottom. Photo: Vanessa Richter (DBCA)

5.3 Choosing an appropriate ear tag

Ear tags of an appropriate material, size and colour must be used to minimise potential negative impacts on the animal (Table 1).

Ear tags are generally not appropriate for species with delicate or small ears. Ear tags should not be applied to rodents, phascogales, dunnarts, small dasyurids, and in particular, bilbies and western barred/Shark Bay bandicoots. Use of ear tags on these species can result in significant damage to the ears. Other marking methods such as microchipping (refer to the department SOP for *Permanent Marking of Vertebrates using passive integrated transponders*) may be better suited to those species.

ANIMAL WELFARE: Care must be taken to use tags that are of an appropriate material, size and colour. Brightly coloured or reflective ear tags may make the animal more obvious to predators and may cause animals to be treated differently by other members of the same species. The physical presence of the tag(s) may also affect the animal's behaviour (e.g., the animal may persistently try and rid itself of the tag). The ear tags must also be appropriate for the animal's size, future growth, body shape and habits (Sharp et al., 2007).

Table 1 Approved ear tag types and the species to which they may be applied

Ear Tag Type	Recommended Species
Monel self-piercing ear tag, Size 1 (1005-1)	Woylie, chuditch, western ringtail possum and quenda
Monel self-piercing ear tag, Size 3 (1005-3)	Adult brushtail possum and small wallabies (incl. tammar wallaby, black-flanked rock wallaby and western brush wallaby)
Two-piece sheep swivel tag with reflective tape	Large wallabies and kangaroos

6 Procedure Outline

6.1 Material required

The following materials are needed to undertake ear tagging of mammals:

- Ear tag(s),
- Applicator (e.g., swivel tag applicator pliers or standard tag applicator),
- Vial of 70% ethanol or sterilising solution (e.g., Alconox®) for tags that are not stored in ethanol,
- Topical antiseptic solution (e.g., Betadine®),
- Tissue swab (e.g., Medi-Swab®),
- Gauze swabs or tissues.

If tags are not self-piercing, or to achieve a cleaner result, a sharp hole punch may also be required. If the punched tissue is to be collected for DNA analysis, refer to department SOP for *Tissue Sample Collection and Storage for Mammals*.

6.2 Preparing tagging equipment

(a) Select the appropriate tag applicator.

(b) Metal Ear Tag: Place the ear tag in the plier, keep the side of the tag with the hole flat against the jaw of the applicator with the indentation (Figure 2).

(c) Two Piece Swivel Ear Tag: Place the swivel tag into the tag applicator (the female part of the tag sits on the side of the applicator with the hole and the male part to the solid side of the applicator). Make sure that both parts of the tag are pushed all the way into the applicator.

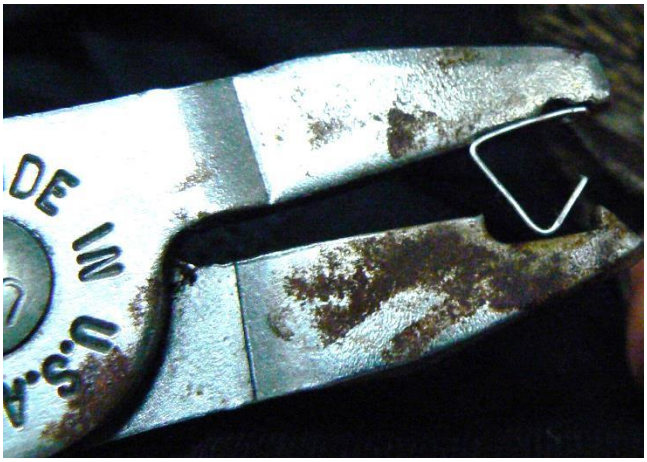

Figure 2 Set up of a metal ear tag in the pliers. Photo: Christine Freegard (DBCA)

6.3 Animal handling

ANIMAL WELFARE: 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). Animals should be released as soon as possible after processing or, if additional holding is necessary, as soon as practicable allowing for animal welfare considerations. 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).

(a) Techniques for handling animals vary depending on the species of mammal involved and the experience and skills of the personnel. General advice on handling of animals is contained in the department SOP for *Hand Restraint of Wildlife*. All handling of animals must be done by (or under the direct guidance of) experienced personnel.

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

(c) The eyes of the animal should remain covered whilst applying ear tags to keep the animal as calm as possible (Figure 3). Animals must be maneuvered into a position that enables easy access to ears for tag application but also securely restrains the animal throughout the procedure. If the animal moves during tag application the ear may be torn.

(d) If an animal is injured during ear tagging, treat any superficial wounds with a topical antiseptic (e.g., Betadine®) and refer to the department SOP for *First Aid for Animals*.

(e) Captured animals must be released at point of capture (unless the purpose of the trapping is translocation, specimen collection or for any other approved reason). Animals must be released as soon as possible, or reach an alternate endpoint approved by the department's AEC. Animals should be released at a time when they are normally active.

Figure 3 Positioning a quenda for tagging. Photo: Christine Freegard (DBCA)

6.4 Applying a metal ear tag

ANIMAL WELFARE: Ear tags should be fitted to animals whose ears have reached adult size. If tags are fitted snugly to ears that are still growing the ear will be distorted and could potentially affect the hearing of the animal. In some cases, ear tags can be fitted to subadults (e.g., recruitment monitoring); however, it is not recommended fitting tags loosely to allow for extra growth because of the risk of the tag getting snagged and being ripped out. If marking juveniles is necessary, alternative methods of marking should be used such as ear notching or fur mark.

(a) If tags are stored in ethanol, disinfection of the tag site is not usually needed.

(b) If tags are **not** stored in ethanol, dip in ethanol prior to application.

(c) Record the tag number.

(d) If an assistant is available, they may be able to prepare the tag and tag applicator whilst the animal handler prepares the animal.

(e) Wipe with (e.g., Medi-Swab®) to the section of ear where tag will be placed.

(f) Firmly restrain the animal, exposing the ears and leaving the rest of the body in the handling bag taking particular care to ensure eyes are covered. Small to medium size mammals should be restrained by a single experienced animal handler. When ear tagging larger or difficult animals, restraint may be easier with two people, one holding the head and the other the rump.

(g) Ear tags must be applied close to the head and sit flush with the margin of the ear (Figure 4A).

(h) The ear tag must be inserted with the numbered side on the outside of the ear and positioned on the front edge of the ear, just above the spot where the ear starts to thicken prior to where it attaches to the head and avoiding blood vessels (blood vessels can be located shining a torch through the ear tissue).

(i) When satisfied with the position of the tag, clinch the pliers swiftly but firmly and release before the animal pulls away (Figure 4B).

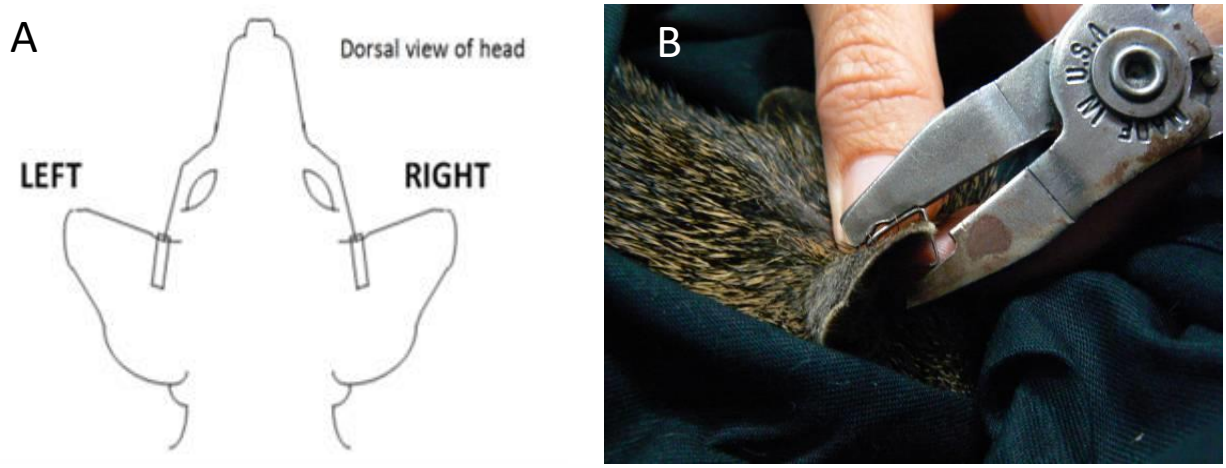

Figure 4 (A) Diagram of ear tag positions (Orell, 1997). (B) Applying an ear tag to a quenda Photo: Christine Freegard (DBCA) .

ANIMAL WELFARE: Equipment should be kept sharp and clean to minimise tearing, bruising, infection and transfer of disease. Appropriate anaesthetic, anti-septic and measures of pain control must be used when/if required.

(j) Check that the tag point has come through the hole and is bent over securing the tag. The tag should sit snugly against the edge of the ear without curling it over. If a tag has been fitted incorrectly it may be necessary to remove it with pliers or metal snips; however, the risk of causing further damage should be weighed against the benefit to the animal of repositioning the tag.

(k) Repeat the procedure for the other ear if required.

6.5 Applying a two-piece swivel ear tag

(a) Two-piece swivel ear tags are usually only applied to one ear, the animal's right ear for males and the left for females.

(b) Write in the data sheet the tag number and/or colour.

(c) Firmly restrain the animal, exposing the ears and leaving the rest of the body in the handling bag taking particular care to ensure eyes are covered.

(d) Give the ear a good clean with dilute antiseptic solution (e.g., Betadine®) or wipe (Medi-Swab®)

(e) Before you insert the tag into the ear, gently squeeze the applicator together to ensure both parts of the tag are in alignment.

(f) Dip the shaft of the male part of the tag in ethanol and set aside whilst the animal's ear is prepared.

(g) If an assistant is available, they may be able to prepare the tag and tag applicator whilst the animal handler prepares the animal.

(h) Ear tag position is the same as for Section 6.4.

(i) These tags are self-piercing; however, the use of an ear punch first is recommended. For instructions on ear punching for application of the tag refer to the department SOP for *Permanent Marking of Mammals using Ear Notching.*

(j) If the tissue from the punched hole is to be kept for DNA analysis, refer to the department SOP for *Tissue Sample Collection and Storage for Mammals.*

(k) Place the ear between the jaws of the applicator, positioning the male part of the tag with the piercing column (Figure 1B) on the back side of the ear at the location of the freshly punched hole.

(l) Squeeze the applicator to apply the tag and release the tag. This should be performed swiftly before the animal has a chance to pull away.

(m) Inspect the ear to look for any tearing or bleeding caused by the procedure and check that the tag is correctly applied. Treat any wounds or reapply the tag if required.

7 Recording Data

Data should be recorded on the *Western Shield Data Sheet* (Appendix 1) using corresponding codes (Appendix 2) and then entered into Fauna File. Email Threatened (CR, EN, VU) and Priority (P1-4) fauna records to fauna.data@dbca.wa.gov.au

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 fauna-related activities require approval from the committee and will need to satisfy the competency requirements (Table 2). Other groups, organisations or individuals using this SOP to guide their ear tagging 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 study being undertaken, will determine the level of competency required (Table 2).

Table 2 Competency requirements for Animal Handlers of projects involving ear tagging to semi-permanently mark animals for standard monitoring only

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, or experience). 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 at 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.
Animal handling and tagging skills/experience required	Experience handling mammals	Personnel should be experienced at hand restraint of species being ear tagged. This experience is best obtained under supervision of more experienced personnel. In applications, provide details on the longevity, frequency & recency of experience.
	Experience in applying ear tags	Personnel should be familiar with the animal welfare principles of semi-permanent marking using ear tags. Personnel should be familiar with how to operate ear tagging equipment. This experience is best obtained under supervision of more experienced personnel.
	Experience managing disease risk and biosecurity 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 the permanent marking technique and animal welfare requirements, a guide to the experience and skill requirements for an animal handler to be considered competent to ear tag mammals is as follows:

- Recency of time in field: within the past 5 years.
- Minimum 10 individuals of similar species ear tagged under supervision.

Note some personnel with experience may still require initial supervision in unfamiliar locations or with species that they have not encountered previously.

9 Approvals

A licence or authorisation may be required under the *Biodiversity Conservation Act 2016* (examples below). Contact the department's Wildlife Licensing Section for more information. 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 permanently mark mammals using ear notching:

- Department SOP *Animal Handling and Restraint using Soft Containment*
- Department SOP *Hand Restraint of Wildlife*
- Department SOP *Permanent Marking of Vertebrates using Passive Integrated Transponders*
- Department SOP *Permanent Marking of Mammals using Ear Notching*
- Department SOP *Managing Disease Risk and Biosecurity in Wildlife Management*
- Department SOP *First Aid for Animals*
- Department SOP *Euthanasia of Animals Under Field Conditions*

For further advice refer also to:

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

12 References

Belser, E. H., Hewitt, D. G., Reitz, R. L., Gann, K. R., Lewis, J. S., & Hellickson, M. W. (2017). Ear tag and PIT tag retention by white-tailed deer. Wildlife Society Bulletin 41(4), 752-757.

Diefenbach, D. R., & ALT, G. L. (1998). Modeling and evaluation of ear tag loss in black bears. *The Journal of Wildlife Management, 62*(4), 1292-1300.

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

Oosthuizen, W. C., De Bruyn, P. J. Nico, Bester, M. N., & Girondot, M. (2010). Cohort and tag-site-specific tag-loss rates in mark-recapture studies: A southern elephant seal cautionary case. *Marine Mammal Science, 26*(2), 350-369.

Orell, P. (1997). Western Shield Operational Fauna Monitoring Protocols. Perth, WA: Department of Conservation and Land Management.

Sharp, T., Saunders, G. and Mitchell, B. (2007). Model standard operating procedures for the humane research of pest animals in Australia. NSW: Department of Primary Industries. Retrieved from www.dpi.nsw.gov.au/pubs/humane-research.

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.

Ear tag: A type of marker made from metal or plastic, fitted to the ear of an animal. They can be self-piercing or inserted through a punched hole.

Permanent marker: A marker designed to stay with an animal for its lifespan.

Semi-permanent marker: A marker designed to last for months to years on animal. Most semi-permanent marks are lost during the animal's lifetime or are removed at the end of the monitoring (Sharp et al., 2007), however the removal of ear tags at the end of monitoring activities does not occur.

Sterilising solution: A solution that sterilises equipment in one step (e.g., Alconox®).

Appendix 1: Western Shield Data Sheet

TRAPPING DATA SHEET Transect/Grid/etc NAME:_____ DATE:_____/_____/_____ ☐ *Animal welfare was considered at all times*

Site		Date ____ /_____/_____	Trap type	Small cage	Elliott trap	Pitfall trap	Other	Bait
Area		Transect / Grid / Other:	# Traps set for this date/event					

Session dates:

Personnel	Animal handling (initials)	Data recording (initials)	Start time	End Time	Weather (rain/wind)	First day (Date)	Last day (Date)
			___:___	___:___			

Trap No.	Trap type	Recently burnt Y/N	Species/ Trap status (OB/ON/CB/CN/ SHUT)	Total wt Bag wt	Animal wt (g)	Implant or Ear Tag N° (record both if both present) L Ear	Implant or Ear Tag N° (record both if both present) R Ear	N/R/ RT*	Sex	Age	Head L / TL	Pes S/L OR SVL	Pouch/ Repro Status	PY/ CR	Comments
				_____											
				_____											
				_____											
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				_____											
				_____											
				_____											

Appendix 2: Codes for trapping

Trap status

Trap status label	Trap status Code	Notes
Closed with bait	CB	Trap is closed, but still has bait and no animal
Closed with capture	CC	All animal captures, including captures in pitfalls
Closed with no bait	CN	Trap is shut, bait has been removed, no animal
Open with bait	OB	Open traps with bait
Open with no bait	ON	Use this code for any open trap with no bait, this includes pitfalls with no captures
Trap deliberately shut	SHUT	Deliberately closed traps (for safety, etc.) and permanent points on transect that were not set

Capture Code

Capture label	Capture code
escaped before id checked or marked	E
new capture	N
not tagged	NT
recapture, previous trapping session	R
recapture, all new tags	RN
recapture, no prior record of tags	RP
recapture, same trapping session	RT

Age/sex

Age	Age code
Adult	A
Infant	I
Juvenile	J
Subadult	S
Sex	**Sex code**
Female	F
Male	M

Pouch Young

Pouch Young	Description	Code
embryonic, attached	jellybean stage, attached to teat	EMBRYONC
fully furred	fully developed pelage	FUR_FULL
fur covering, short	complete but light covering of fur	FUR_SHRT
hairless, ears attached	limbs developed, no hair, ears folded onto head	HLS_EARA
hairless, ears free	limbs more developed, no hear, external ear free	HLS_EARF
hair emerged, eyes open	hair visible, protruding from skin	HR_EMERG
hair not yet emerged, closed eyes	dark skin colouration from growing hair	HR_NEMER

Reproductive activity

Reproductive condition	Description	Code
abdominal testes	testes not visible	ABD_TEST
Active pouch (stained, Moist)	pouch empty but ready for young	ACTV_PCH

elongated teat, not lactating	teat elongated but not lactating	ELO_TEAT
inactive or dormant	no signs of reproductive activity	INACTIVE
lactating, dets of YAH separate rec	lactating, with young at heel present, details of young at heel recorded as a separate record	LAC_INDV
lactating, offspring absent	lactating with offspring absent	LAC_NOO
Lactating with offspring present	lactating with offspring present	LAC_OSP
uncertain if PY or YAH, dets sep rec	uncertain whether offspring is pouch young or young at heel (fully furred), offspring details recorded as a separate record	LAC_UNC
lactating	female with lactating teats - any mammal	LACTATNG
repro status not recorded	reproductive status was not recorded	NOT_REC
oestrus	oestrus, female reproductively active or receptive	OESTRUS
parous, not active (stained, dry)	marsupial female of breeding age, no pouch activity	PAR_NOAC
scrotal testes	testes visible in scrotal sac	SCR_TEST
suckling, dets of PY separate rec	suckling, with pouch young, details of PY recorded as a separate record	SUC_INDV
suckling PY attchd, lact teat, YAH absnt	suckling young attached, spare lactating teat, young at heel absent	SUC_LACA
suckling PY attchd, lact teat, YAH prsnt	suckling and lactating with pouch young and young at heel present	SUC_LACP
suckling, lact, YAH prsnt, YAH sep rec	suckling and lactating with pouch young and young at heel present, details of young at heel recorded as a separate record	SUC_LACY
suckling PY attached	young attached to mother's teat(s)	SUCKLING
suckling, lact, YAH absnt, PY sep rec	suckling and lactating with pouch young present and young at heel absent, details of pouch young recorded as a separate record	SUCP_LAC
undefined pouch activity	cannot determine pouch activity or activity does not fit any standard codes	UNDEFIND
undeveloped	female not yet reproductively mature	UNDEVLPD
developd pouch, no signs of use virginal	developed pouch but no signs of use - virgin mammal	VIRGINAL

ID method (insert in comments)

Identification method	DESCRIPTION	ID CODE
capture marked	For temporary marks or non-unique marks - Marked to identify recaptures for this session only	CPMARKED
individual id marked	Use the animals body to provide the id by physically marking it (i.e. ear notch, digit removal, scale clip)	IDMARKED
microchip implant, tags added	Animal already has a microchip at capture, external tags have been added in this event	IMPL_TAG
microchip implant	No previous unique mark, implanted with microchip in this event	IMPLANT
none	No identification is taking place	NONE
tagged, microchip implanted	Animal already has an external tag at capture a microchip was implanted in this event	TAG_IMPL
tagged (metal/plastic)	Physically affix metal/plastic tag	TAGGED

All fate codes to be listed in comments section of data sheet

Fate released*

Fate	DESCRIPTION	Data sheet code
released	**released**	**RELEASED**
minor casualty, released	minor casualty, released	REL_CSLT

Fate — Unexpected death*

Fate	DESCRIPTION	Data sheet code
died during handling procedures	died during handling procedures	DIED_HND
deceased in trap	deceased in trap	DIED_TRP
euthanised, welfare, sharp blow to head	euthanised for welfare reasons by sharp blow to back of head	EUW_BLOW

Fate — implants radio tags*

Fate	DESCRIPTION	Data sheet code
i-device surgically implanted, released	i-device surgically implanted, released	REL_IDVS
radio tag removed, released	radio tag removed, released	REL_RTXR

Fate — Pouch Young*

Fate	DESCRIPTION	Data sheet code
mother + PY left in bag, failed	mother + PY left in bag, failed	MPY_BAGF
mother + PY left in bag, successful	mother + PY left in bag, successful	MPY_BAGS
PY taped in pouch, released, failed	PY taped in pouch and released, failed	PCH_TAPF
PY taped in pouch, released, successful	PY taped in pouch and released, successful	PCH_TAPS
PY taped + bagged, failed	PY taped + bagged, failed	TP_BAG_F
PY taped + bagged, successful	PY taped + bagged, successful	TP_BAG_S

Fate — translocations*

Fate	DESCRIPTION	Data sheet code
translocated	translocated	TLOC_STD
translocated, after held in captivity	translocated, after held in captivity	TLOC_CAP
translocated, fitted with radio tag	translocated, fitted with radio tag	TLOC_RTX