Charles Darwin University Animal Ethics Committee

Standard Operating Procedure:

ANIMAL HANDLING AND RESTRAINT USING SOFT CONTAINMENT (WA DBCA)

Version No:	Version 1.3
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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.

CHARLES DARWIN UNIVERSITY AUSTRALIA

Standard Operating Procedure

SC24-12 ANIMAL HANDLING AND RESTRAINT USING SOFT CONTAINMENT (DECEMBER 2024)

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 1.3

December 2024

GOVERNMENT OF WESTERN AUSTRALIA

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Revision History Log

Version	Date	Details	Author/Reviewer	Approved By	Approval
1.0	2009	Draft created	C. Freegard and V. Richter	P. Orell and K. Morris	March 2009
1.1	16/05/2017	Changes to type of containment bags used and length of time animals can be held (see Table 1). Other minor revisions including clarification of procedures.	G. Yeatman, G. Anderson, and M. Page	M. Page	August 2017
1.2	30/07/2021	Revision of content & clarification of procedures	B. Palmer, N. Willers, A. Robey and F. Carpenter	M. Dziminski	August 2022
1.3	06/11/2024	Revision of content & clarification of procedures	A. Raycraft, P. Dickins and K. Rayner	J. Richards	December 2024

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Approved by the DBCA Animal Ethics Committee:

Dr Jacqui Richards
Chairperson, 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 Claire Stevenson, Brent Johnson, Neil Thomas, Stephanie Hill and Peter Orell.

2 Purpose

Once an animal has been caught or trapped, it is usually transferred to some form of temporary containment such as a bag until it has been identified and processed. Soft containment aims to minimise stress to the animal whilst protecting it from injury, providing adequate ventilation and maintaining a comfortable temperature during measurement, observation and transport.

This Standard Operating Procedure (SOP) provides advice on how to handle and restrain animals using soft containment for processing in the field. For advice relating to longer term holding and transport of animals, refer to department SOP *Transport and Temporary Holding of Wildlife*.

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 soft containment for animal handling and/or restraint 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 personnel involved in fauna research and management undertaken by the department 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 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(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 animal handling and restraint using soft containment 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 animal handling and contingencies for managing welfare issues have been identified. Ensure that all personnel involved in the project are 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 animal handling will require approval from the department's AEC. All personnel involved in animal handling animals must be identified during the application process. Key animal welfare considerations that should be considered when

handling animals using soft containment 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

How an animal is handled will directly affect the level of impact on the welfare of the animal. If appropriate soft containment methods are used and appropriate care is provided then the level of impact of soft containment can be minimised as far as practical.

Potential welfare impacts of soft containment of animals include:

- Distress
- Physical injury, pain or discomfort
- Hyperthermia
- Hypothermia
- Suffocation
- Capture myopathy (in some species)
- Death

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 handling and restraint using soft containment, an animal may also experience other impacts from associated procedures such as handling and transport. 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 Soft Containment Methods

All soft containment methods described in this SOP are for the restraint of animals during processing in the field. The appropriate containment method depends on the size and comfort requirements of the animal as well as its ability to escape. The method selected should also allow for effective processing to minimise handling time. For example, animals with large claws need to be contained in a bag that will not easily be torn, and animals stressed when eyes are uncovered require a bag made of a dense weave fabric that effectively blocks light. Table 1 summarises the approved methods of soft containment. If restraint time for processing must be longer than the maximum holding time specified in Table 1, this must be

justified in the application to the department's AEC. See SOP *Transport and Temporary Holding of Wildlife* for advice on holding animals for longer periods than immediate processing.

ANIMAL WELFARE: Consider your research question when planning your animal handling. Animals must only be handled, and measurements taken if it forms part of the aims of your project. Do you need to weigh? Do you need to measure body morphometrics?

Table 1 Approved soft containment methods and their uses

Purpose of containment	Material	Dimension (length x width)	Species	Holding Time	Cautions and Notes
Obtaining weight	Lightweight clear, plastic bag (eg ziplock, freezer)	≤ 16 x 10 cm	Frogs, reptiles (< 30 g)	< 30 seconds	Due to their light weight, small plastic bags can be used for increased precision in weighing small vertebrates. This should be done just prior to releasing the animal to reduce handling individuals multiple times. Care should be taken to not expose animals to direct sunlight or heat and time should be extremely short - only as long as it takes to weigh and then immediately release. In windy conditions bags should be shielded to minimise handling time. Bags should be kept clean, dry and replaced as necessary.
Holding for processing in the field.	Lightweight clear, plastic bag (eg ziplock, freezer)	As suitable for species.	Moist-skinned frogs (e.g., *Crinia, Litoria* sp.)	Up to 5 minutes	Bags should remain inflated. Keep animals out of direct sunlight/heat while in a plastic bag. Consider providing some moisture or substrate in the bag as appropriate for the species and situation. Ensure bags are placed in a safe location where they are not at risk of being stood or sat on while awaiting processing. Bags should be kept clean and replaced as necessary.
Holding for processing in the field.	Calico bag	Small, ≥ 30 x 25 cm (to fit opening of medium Elliott trap)	Small birds, mammals (e.g., rodents, small dasyurids), reptiles & dry-skinned burrowing frogs (e.g., *Heleioporus* sp.)	Up to 5 minutes	Animals should be transferred into calico bags upon capture/removal from trap/net. Take care to check bags for holes, weak seams and loose threads. Be aware that mammals, particularly rodents, may chew through bags and escape. See SOP *Mist Net Trapping for Birds* for advice on containment of birds for processing. Be mindful of environmental temperatures – ideally animals should be held and handled outside of direct sunlight but on cold mornings/nights consideration should be given to external sources of warmth (sunlight or body heat) if animals are showing any sign of impacts from the cold
		Large, ≥ 75 x 55 cm (to fit opening of a cage trap)	Larger birds, reptiles and size-appropriate mammals		
Holding for processing in the field.	Dark cotton drill, denim or synthetic (e.g., polar fleece)	≥ 75 x 55 cm (to fit opening of a cage trap)	Medium-sized mammals (e.g., brushtail possums, bandicoots, bettongs,	Up to 5 minutes	Take care to check bags for holes, weak seams and loose threads. Darker bags can quickly calm animals but take care to ensure animals do not overheat.

			quolls)		Take care to ensure bags are not hot before use, i.e. store out of direct sunlight.
Holding for processing in the field.	Dark heavy cotton drill, denim.	Dependant on species size and trap type/size.	Larger macropods (e.g., quokka, wallabies, kangaroos)	Up to 5 minutes	Take care to check bags for holes, weak seams and loose threads. Macropods can have sharp claws that tear bags, fabric must be of suitable strength. Darker bags can quickly calm animals but take care to ensure animals do not overheat.

6 Procedure Outline

6.1 Care and storage of handling bags

Prior to fieldwork, check bags are disinfected, clean and dry, and tie strings are present. Also check for holes, weak seams and loose threads. Wherever possible, have the bags made with both the seams and tie-string on the outside or have the seams pipe-stitched.

After field work, wash and disinfect all used bags, discard or repair damaged bags and arrange replacement bags as required. Refer to department SOP for *Managing Disease Risk and Biosecurity in Wildlife Management* for further guidance on cleaning and disinfecting bags.

Bags must be stored in a clean, dry, pest free location.

6.2 Transferring animals into handling bags

To minimise stress, all animals to be held for processing should be transferred to an appropriate handling bag as soon as possible after capture. Methods used to transfer the animal into the holding bag will depend greatly on the species and the process that was used to capture the animal. Ensure that no part of the animal's body is caught or tangled in the bag when the bag is closed and tied.

Handling animals in bags

ANIMAL WELFARE: All animal handling must only be undertaken by, or directly supervised by, competent and experienced personnel who are familiar with the normal behaviour patterns of the species under restraint.

Always ensure the following when handling animals in bags:

- Avoid excessive noise and sudden movements.
- Smoking and eating is not acceptable immediately prior to, or when handling animals.
- Handling and restraint times should be kept to a minimum.
- Animals can bite and scratch through bags, so be aware at all times of the location of the animals orientation to minimise chances of injury.
- Keep animals in the shade or out of direct sunlight, unless external heat is required to keep animals warm

General advice on hand restraint of different groups of animals can be found in the department SOP for *Hand Restraint of Wildlife*.

Once in the bag, most mammals are best handled by first directing the head into a corner of the bag. Ensure that the animal can breathe and is not forced into awkward or unnatural positions that may cause injury.

Mammals should generally be handled in bags that block visibility and be positioned so that the bag can be opened to only expose the area of interest. Eyes should be kept covered as much as possible during handling to aide in reducing stress, and the chance of escape.

Note: frogs, reptiles and small- to medium-sized birds are generally processed out of the holding bag.

Where multiple animals are being collected and held in bags, processing must be undertaken methodically and as efficiently as possible to ensure that no animals are forgotten and that all animals are released as soon as possible. Keep calm, rushing will often result in stressed animals, more difficult handling and poorer processing outcomes. Be mindful that efficient systems do take time to establish and will be different handler to handler.

Always check the inside of a bag before and after releasing an animal to ensure that no young are left behind. Ejection of pouch young is common in many medium-sized marsupials (e.g. bettongs, wallabies and bandicoots). Also shake out bags of any scats or other debris following an animals release.

ANIMAL WELFARE: To ensure minimal stress to the animals, they should only be handled for as long as required for identification, marking and measurements (usually no more than five minutes). Ensure noise and other disturbance is kept to a minimum.

6.3 Care of animals in bags

Note: The following is general advice only. Depending on various factors, including species and weather, a bagged animal may need to be cared for in different ways.

Handling bags should only be used to contain a single animal per bag, except for mothers and large pouch young in marsupials. It may be appropriate to contain female marsupials and their large pouch young in the same bag for soft release, refer to department SOP *Care of Ejected Pouch Young* for further guidance.

Animals in bags must be placed and secured where they cannot be inadvertently injured by the bag moving or other objects constricting or crushing the bag, where they will not be exposed to extreme temperatures (hot or cold), accidentally forgotten or stepped on and will not be threatened by predators or harm each other. Keep bags well-ventilated and monitor temperature status.

ANIMAL WELFARE: Overheating can lead to death. Temperature management is essential; soft containment bags should never be left in direct sunlight, unless to intentionally raise the temperature of an animal, as outlined in section 6.2. If adequate shade is not available, animal handlers should place their back to the sun to cast shade over the animal while processing. Under extreme conditions (e.g., >35°C) additional mitigation measures should be applied.

ANIMAL WELFARE: On cool days, if individuals appear to be suffering from the cold (shaking, unsteady on feet, in torpor) it may be necessary to gently warm small birds and mammals inside the bag, under jumpers or clothing prior to release. Refer to department SOP *Care of Ejected Pouch Young* for further guidance on ejected pouch young.

6.4 Tying and labelling bags

(a) A bag holding any animal must be tied securely but in such a way that the knot can be easily undone when access to the animal is needed (e.g., a firm bow). Ensure the animal is in the bottom of the bag and no part of it can be inadvertently caught when tying the bag.

Small snakes (particularly blind snakes), and even other slender reptiles can escape through poorly tied bags, so it is recommended that the opening of the bag is always folded prior to being tied for these species

(b) Information recorded on labels depends on the purpose for holding the animals. If an animal is only being held for identification and measuring, it may be sufficient to note only the trap number so that the animal can be released at its point of capture once it has been processed. Generally, details should include date, location (site/trap number), species, individual identification (e.g., ear tag, if necessary/available), number of individuals in the bag, and if the animal is venomous.

(c) If an animal is not being processed and released immediately upon removal from the trap then its bag must be labelled. In most circumstances, it is best to write the relevant details in permanent marker on flagging tape and securely tie the tape to the bag. Writing can also be done directly on the bag, or on white cloth tape which is stuck to the bag. It is important to make sure any prior writing is crossed out or tape removed after the animal is released or vouchered so there can be no confusion.

(d) If multiple animals are being captured and held for transport, using different coloured flagging tape to differentiate between males and females can be helpful if this information is required for decision making. This helps sort animals if a particular sex ratio is desired. It also helps to identify which animals are female, as they may require extra care, particularly for species that eject pouch young.

(e) For vouchering: See the department SOP on *Vouchering Vertebrate Fauna Specimens* for more information.

7 Competencies

A person who is competent has the knowledge, skills, and experiences that allow them to successfully capture and appropriately handle animals for the required use, and effectively manage adverse events or mitigate risks as required. Department personnel, and other external parties covered by the department's AEC, undertaking projects involving soft containment of animals 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 animal handling and restraint 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 2 provides advice for standard monitoring only.

Table 2. Competency requirements for Animal Handlers of projects involving soft containment of animals

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 for the site(s) being studied and have an understanding of 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.
Animal handling and processing skills/experience required	Experience handling terrestrial fauna	Personnel should be experienced in handling, restraint and measuring of the range of species likely to be captured whilst minimising stress to the animal. 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 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 animal handling and restraint using soft containment procedures and animal welfare requirements, a guide to the experience and skill requirements for an animal handler to be considered competent to handle and restrain animals using soft containment 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 2-4 weeks undertaking animal handling and restraint using soft containment with similar species.
- Recency of time in field: within the past 5-10 years.
- Minimum 10 individuals of similar species handled.

8 Approvals

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.

Projects involving wildlife may 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.

9 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

10 Further Reading

The following SOPs have been mentioned in this advice and it is recommended that they are consulted when proposing to handle and restrain animals using soft containment:

Department SOP	*Hand Restraint of Wildlife*
Department SOP	*First Aid for Animals*
Department SOP	*Managing Disease Risk and Biosecurity in Wildlife Management*
Department SOP	*Euthanasia of Animals Under Field Conditions*
Department SOP	*Vouchering Fauna Specimens*

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.

11 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.