Standard Operating Procedure

SC24-11 HAND RESTRAINT OF WILDLIFE (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

Department of **Biodiversity, Conservation and Attractions**

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

www.dbca.wa.gov.au

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This document was prepared by Species and Communities Program, Biodiversity and Conservation Science, Department of Biodiversity, Conservation and Attractions.

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

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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 Neil Thomas, Nicole Godfrey, Teagan Johnston, Peter Lambert and David Pearson.

2 Purpose

There are many situations where it is necessary to restrain wildlife by hand. Restraint is usually required to make observations or take measurements.

Handling or restraint should be done in a way that minimises stress to the animal, the time that the animal is restrained and the risk of injury to both the animal and the hander. Hand restraint is about finesse and technique, it has little to do with strength. Handling of an animal can have a significant impact on its welfare, for example increased stress due to prolonged restraint or physical injury to the animal from improper handling technique.

Many species of animals are capable of inflicting serious injury to themselves or those handling them, so it is important to be familiar with the correct handling and restraint techniques during the transfer of animals into appropriate handling bags and during animal processing. For safe and effective handling, the animal handler must have detailed knowledge of the anatomy and physiology of the species being restrained; including the distance the limbs can reach to kick or strike, and the degree of agility and speed (Fowler, 1978a).

This Standard Operating Procedure (SOP) provides general guidelines for the hand restraint 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 hand restraint of wildlife 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.

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 hand restraint 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 and contingencies for managing welfare issues have been identified. All personnel involved in the project should be aware of the range of issues that they may encounter, the options that are available for reducing impacts and improving animal welfare, and the process for managing adverse events.

Department projects involving hand restraint will require approval from the department's Animal Ethics Committee. Key animal welfare considerations that should be considered when employing hand restraint 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

Wild animals are susceptible to stress and injury during hand restraint. There is a high level of impact on animals during hand restraint (Table 1).

It is important to be aware that improper restraint, especially of frightened or stressed animals, can lead to negative welfare impacts, including:

- Hypothermia.
- Hyperthermia.
- Stress.
- Shock.
- Exertional myopathy.
- Physical injury, pain or 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 hand restraint, an animal may also experience other impacts from associated procedures such as capture and handling. Investigators must be aware that the effects of a series of stressors, such as capture, handling, transportation and marking can be cumulative.

5 Procedure Outline

Personnel handling animals should be trained in the procedure as well as in contingency methods of restraint that may be required. Handling techniques are best demonstrated and learnt under supervision in the field. The specific handling characteristics of each taxonomic group is beyond the scope of these guidelines. This SOP provides general advice only.

A number of species may have specialised requirements when it comes to handling and restraint, and general advice may not always provide the correct information; therefore, these species will need to be considered on a case-by-case basis. Personnel need to identify whether the species they are handling has specialised requirements and should seek the appropriate information and guidance before handling these species.

Determining the most suitable hand restraint method for a species will depend on a number of factors. The following are considerations prior to hand restraining an animal.

5.1 Experience and abilities of the handler(s)

It is important to consider the experience and confidence of the handlers with the species in question. Confident handlers are more likely to restrain the animals in an efficient manner that minimises stress.

It may be necessary to involve multiple personnel to restrain an animal or in the case of inexperience, have a back-up handler. The minimum number of people should be utilised to restrain the animal quickly and safely.

5.2 Species involved

Likely behaviours (e.g., flight, attack) and relative agility of the animal will be species dependent and knowledge of each species is important to help guide the most suitable restraint. The size of the animal will determine whether one hand, two hands, or more than one person is required for hand restraint (Table 2).

5.3 Defence mechanisms and delicate structures

Many animals have defence mechanisms or delicate structures which need to be considered when handling them such as:

- Skin: Skin is an important organ. Damage to the skin of an animal leaves it susceptible to possible bleeding and infection. Some species such as the Cane Toad secrete a toxic substance from their skin whilst other amphibians have very delicate skin that is permeable enough to allow the absorption of chemicals; therefore, clean, moist hands that are free of chemicals such as sunscreen or hand sanitiser are required when handling.
- Tail: The tail of some large reptiles (e.g., monitors, crocodiles) can cause injury if not restrained. A defence mechanism of some reptiles (e.g., skinks, geckoes) is tail autotomy which involves the dropping and later regrowing of the tail. The loss of the tail in some species results in a loss of the animal's fat reserves and therefore

decreases their chance of survival. Some rodents and bandicoots have fragile tails that can be broken, or the skin sheath removed if roughly handled or handled by the tail.

- Feathers: Damage to, severe loss or disruption of the feathers may impact the bird after release and reduce its ability to fly and thermoregulate. Hands should be free of transferable contaminates such as suncream or detergents which may damage the feathers
- Teeth/Beak: Many species will try and bite to defend themselves and it is therefore important to have control of the head at all times. However, birds from the Order Pelecaniformes, which include many large waterbirds, such as herons, have reduced external nostrils. As these birds mostly breathe through their mouths, keeping their bills closed during handling may result in unnecessary stress and breathing difficulty.
- Wings: Most birds will naturally try to fly away when being held. Unrestrained/flapping wings during handling can cause wing strain and damage to feathers resulting in the bird's inability to fly. Some species of birds use wings as defence (e.g., swans, pelicans) and have to potential to injure handlers.
- Talons/Claws: For species whose claws/talons are their main defence (e.g., birds of prey), it is important to have control of these first.
- Legs: Some species utilise their powerful legs in response to being handled (e.g., macropods). Legs cannot only cause injury to the handler but also to the animal if not controlled properly. For example, macropods can traumatise their spines if allowed to kick out with their hind legs while being held by the tail (Fowler, 1978b). Some species such as storks and waders have long delicate legs which will require careful handling.
- Venom glands: Some species are venomous and use their venom to protect themselves (e.g., venomous snakes, cane toads, invertebrates).

ANIMAL WELFARE: Exertional myopathy (EM) or capture myopathy (CM) is a condition which may be seen in many species of mammals and birds. It can result in sudden death, or death up to weeks later due to organ failure and a loss of mobility leading to higher susceptibility to predation. Among Australian species, macropods are particularly susceptible. Although EM is mostly associated with prolonged muscle exertion, it may also be seen in animals experiencing fear or anxiety without physical exertion, due to the prolonged and sustained effects of adrenaline on the circulation, as well as muscle damage and lactic acid build-up. Exertional myopathy may develop in susceptible species as a result of capture and restraint, transport, repeated handling, placing animals in an unfamiliar environment or close confinement, pursuit, or cumulative combinations of these events.

For effects on muscle damage and lactic acid build-up see Portas 2008, and for effects of loss of mobility which increases susceptibility to predation see Abbot *et al*., 2005.

Affected animals may exhibit panting, increased heart rate, shock, hyperthermia, muscle tremors and spasms, collapse, inability to hold the head up and inability to stand.

Exertional myopathy carries a guarded to poor prognosis and management should focus on preventing its occurrence through efforts to minimise stress during all interactions with wildlife. Animals should only be handled for as long as required to identify them and to collect any necessary measurements (usually no more than five minutes). At a maximum they must be released (or reach alternate end point) within 24 hours of capture. Every effort should be made to avoid stressful events during hot or extreme weather conditions.

Records of animals suspected to be suffering from capture myopathy need to be provided to the Animal Ethics Committee as an Adverse Event report. Any animal that dies from exertional myopathy must be submitted for post-mortem examination by a veterinarian, with a copy of the report provided to the department's AEC along with an Adverse Event report.

5.4 Behavioural aspects

Wild animals are not conditioned to being handled and generally stress much faster than captive animals familiar with human presence. Wild animals should therefore be handled as efficiently as possible.

Handlers should be aware that behaviour during handling may vary between individuals of the same species. An animal's response to restraint may also vary with the stage of life they are in (Fowler, 1978b). For example, an animal in oestrus or with young may behave differently to being handled than at other times. Restraint should be avoided in animals which are pregnant, with young or breeding as they will have a decreased ability to cope with more stress (Sharp *et al*., 2007).

Transporting and trapping animals changes their behaviour. These activities create high stress levels in animals, and they should be given time to settle before carrying out additional restraint (Fowler, 1978b).

5.5 Health status

The health status of an animal will affect the way it is handled. Sick or injured animals may require the use of personal protective equipment such as gloves to protect the handler from disease. Injured animals will be treated with extra caution because of the increased chance of unpredictable behaviour. Species known to carry zoonotic diseases may have specific PPE or preventative requirements for handling (e.g. bats should not be handled by personnel who have not been fully vaccinated against rabies to protect them from Australian Bat Lyssavirus).

5.6 Restraining the animal

Animals should always be approached in a calm and quiet manner (Sharp *et al*., 2007). The handler must know where and how to grasp the animal. When restraining an animal by hand, the force applied, and technique should be appropriate for the species in question (Fowler, 1978b). The animal needs to be grasped firmly enough to prevent struggling, but gently enough to avoid the risk of suffocation, crush injuries or damage to limbs.

Handling animals does not always go as planned so it is necessary to be sensitive, responsive and adaptable. Prolonged, stressful restraint should not be performed. Other forms of

restraint (e.g., anaesthesia) may be more suitable to help prevent injury to the animal and handler.

5.7 Assessing the comfort of restrained animals

Handlers should be familiar with the normal behaviours of the species being restrained and knowledgeable about signs of stress and discomfort (NHMRC, 2013). Animals need to be constantly assessed throughout hand restraint to ensure they are placed under the least amount of stress as possible to reduce the risk of injury and other problems such as hyperthermia and capture myopathy.

The time the animal is restrained must be kept to a minimum, with the animal being released or transferred into an appropriate soft or hard containment method as soon as possible. Refer to the department SOPs *Animal Handling and Restraint using Soft Containment* and *Transport and Temporary Holding of Wildlife* for further advice.

Personnel need to be aware of signs of stress in an animal when assessing the comfort of the animal being restrained (Table 1).

In assessing the comfort of a restrained animal, personnel will need to consider:

1. The animals breathing and whether the pressure you are exerting on the animal is too strong. Personnel must keep an eye on the heart rate and respiration of the animal. Gasping and cyanosis (bluing) of the nose and/or lips are obvious signs that too much pressure is being used.

2. Ensuring that the animal is not forced into awkward or unnatural positions that may cause injury. Exerting too much pressure on limbs can cause fractures, muscle strain or dislocations.

3. The surroundings, this includes what the animal can see, hear, smell and to a lesser extent, taste. Animals must not be exposed to excessive wetness, extremes of temperature, bright light and loud or sudden noises. Handlers should not smoke or eat immediately prior or during hand restraint of animals.

Table 1. Signs of stress in animals during hand restraint (Choy, 2009; N. Thomas, pers. comm. 2009).

Animal Group	Signs of Stress
Birds	• Excessive vocalisation • Excessive struggling • Listlessness • Closing eyes • Increase in heart rate • Gaping • Laboured breathing • Heating or cooling in the hand
Reptiles and Amphibians	• Excessive struggling • Gaping of the mouth • "Swimming" in the air (turtles/tortoises) • Laboured breathing • Self-biting
Mammals	• Vocalisation • Clenching of teeth • Self-biting • Increase in heart rate • Panting • Animal is limp or closes its eyes • Aggression • Urination/defecation • Excessive struggling • Cyanosis (bluing) of the nose and/or lips
Macropods	• Vocalisation • Teeth grinding • Excessive licking • Increase in heart rate • Panting • Excessive salivating

6 Hand Restraint Methods

General advice on suitable hand restraint techniques is contained below, however, training and supervision from experienced personnel in animal handling is required before a person may be considered competent.

ANIMAL WELFARE: Hand restraint is stressful for animals and so it is essential that handling time is kept to a minimum. Animals should be transferred into holding bags as soon as possible. Consider whether animals need to be removed from bags for processing or if they can be processed in the holding bag. If not being processed in a bag, some species (e.g. most mammals) should have their eyes covered.

6.1 One-handed hold

This method is suitable for small to medium lizards, and small rodents and dasyurids (Table 2). It involves the whole animal being restrained in a single hand. The thumb and index finger to restrain the head (Fig. 1).

Figure 1. A bearded dragon restrained using thumb and index finger with the rest of the hand supporting the body. Photo: Christine Freegard (DBCA).

6.2 Two-handed hold

The two-handled hold is a common method where both hands are used to hold the animal, usually one to restrain the head and the other to support the body and control the legs/wings/tail (Figure 2 and 3). Large birds such as swans and malleefowl are placed under one arm to control the wings, while the legs and head are controlled with the two hands (Figure 4). Due to the proximity of the bird's beak to the head of the handler, safety glasses should be worn to prevent eye injuries from birds striking out. This method is also suitable for medium to large snakes, lizards, and mammals (Table 2).

Figure 1. A carpet python restrained with one hand controlling the head (left). Photo: Christine Freegard (DBCA). A varanid restrained with one hand around the front legs and one hand around the back legs (right). Photo: Astrid Kendrick (DBCA).

Figure 2. A Cockatoo restrained using two hands. The lower hand has a grip of the feet, tail and wing tips. The head is secured with the second hand to prevent biting injuries. Photo: Mark Blythman (DBCA).

Figure 3. A quenda restrained with one hand holding the neck and head, and the other holding the back legs and supporting the body. Photo: Vanessa Richter (DBCA).

Figure 4. A peafowl being restrained using the under the arm method. This bird's wings are secured under the arm and its legs are being held with the claws facing away from the handler. Photo: Kelly Rayner (DBCA)

6.3 Three-finger hold

This method is suitable for reptiles to restrain the head of an animal (Table 2). The thumb and middle finger are placed on either side of the animal's head and the index finger placed on top of the head (Figure 5). If required, the other hand can be used to support the rest of the animal's body.

Figure 5. *The head of a carpet python restrained using a three-finger hold. Photo: Christine Freegard (DBCA).*

6.4 Scruffing

This method is suitable for small to medium rodents (e.g., *Mus musculus* and smaller individuals of *Rattus* spp.), small dasyurids, and for microbats (initial capture only; Table 2).

Using the thumb and index finger, the loose skin on the scruff of the neck is grasped (Figure 6). This technique is not suitable for species which tend to slough skin such as *Zyzomys* spp.

Figure 6. A dunnart restrained using scruffing technique. Photo: Nicole Willers (DBCA).

6.5 Cupping

This method is suitable for most small birds, and small to medium lizards. It involves the whole animal being enclosed in one or two hands (Fig. 6). This technique is not suitable for species that may bite, sting or scratch hands. It is also not suitable for species that may be sensitive to overheating if restrained this way for anything more than a few seconds such as amphibians (Table 2).

Figure 6: A finch cupped in hands. Photo: Vanessa Richter (DBCA).

6.6 Bander's grip (Ringer's hold)

Where possible, this method is suitable for all small to medium birds and can also be used on small rodents and mammals (Table 2). This is generally a one-handed restraint method which involves the animal being caged in the fingers with the head protruding between the index finger and middle finger (Lowe 1989). This combination of grips allows for most measurements and health assessments to be performed whilst controlling the wings, legs and head for small to medium sized birds. (Fig. 7).

Figure 7. A red-tailed phascogale held in one hand between the index and middle fingers (left). Photo: Nicole Willers (DBCA). A rufous whistler being held in the banders grip. Note the fingers are creating a loose cage around the body and not applying excessive pressure (right). Photo: Mark Blythman (DBCA)

ANIMAL WELFARE: If hand restraint is not possible due to excessive struggling which compromises the health of the animal or risks of injury to the handler or animal, other forms of restraint (e.g., anaesthesia, handling bags) should be applied or the animal should be released. Guidance on using soft containment can be found in the department SOP *Animal Handling and Restraint using Soft Containment.*

6.7 Amphibian holds

Small and more delicate species should be held by a foot and the body should be supported. The animal should not be able to kick its legs. Alternatively use the thumb and index finger to hold the hind legs at thigh level, the body and front legs are supported by resting on the same hand or the other hand.

Frogs should be handled as little as possible because handling removes skin secretions and predisposes the frog to skin infections, while continuous holding in the hand can result in overheating. It is preferable for the hands to be wet during restraint as this reduces the risk of trauma to the animal's skin.

Tadpoles and larvae have thin delicate skin that is very easily damaged by the slightest handling. Therefore, direct contact handling of tadpoles and larvae is to be avoided; instead, these amphibian stages should be scooped using nets or similar and examined through clear flexible lightweight plastic bags (e.g., Ziplock or freezer bags) containing water.

6.8 Temporary holds

6.8.1 Pistol grip

This method is a variation of the three-finger hold and is suitable for small to medium mammals. This method is extremely good for pacifying agitated animals and allows easy exposure and measuring of the head. The ring and little fingers are placed under the chin, with the middle and index finger going over the head to cover the eyes and the thumb going behind the head to restrict head movement. This is best done while the animal is still in the bag and then exposing the head once the animal is restrained. For smaller animals just the index finger over the head is adequate to cover the eyes.

Figure 8. A chuditch being restrained and head exposed using pistol grip temporary hold. Photo: Nicole Willers (DBCA).

6.8.2 Tail grab

This method is suitable for temporary hold of medium-sized macropods. It involves grabbing the base of the tail where it is thick and muscular and lifting the animal off the ground directing the legs away from the handler (Fowler, 1978b). The animal can then be placed into an appropriate handling bag, refer to the Department SOP *for Animal Handling and Restraint using Soft Containment*. To minimise the risk of spinal injury when using this technique, the animal should not be restrained in this manner for extended periods of time without supporting the body. This technique is suitable for medium-sized macropods.

Figure 10*. A rock wallaby grasped by the base of the tail using the tail grip. Photo: Nicole Willers/DBCA (left) and Roger Groom (right).*

ANIMAL WELFARE: DO NOT use this hold for rodents or bandicoots as it may cause detachment of the tail or tail sheath.

ANIMAL WELFARE: Ejection of pouch young can occur in some macropods. Personnel that may encounter these species during handling must be familiar with the department SOP for *Short-term joey intervention procedures*. Records need to be kept on orphans, their care and fate for annual reporting requirements for the department's AEC approved projects.

Table 2. A guide to suitable hand restraint methods for different animal groups. Note: Some techniques are not suitable for animals of a particular size. Where this is relevant, an appropriate size range has been included in brackets.

Animal Group	One-handed hold	Two-handed hold	Three-finger hold	Scruffing	Cupping	Bander's grip (Ringer's hold)	Amphibian hold	Temporary holds (pistol grip/tail grab)
Birds	X	✓ (medium to large)	X	X	✓ (flightless birds e.g., chicks)	✓ (small to medium)	X	
Amphibians	Initial capture only	X	X	X	few seconds only	X	✓	
Snakes	X	✓	✓	X	X	X	X	
Lizards	✓ (small to medium)	✓	✓ (small to medium; snakes e.g., pythons)	X	✓ (small)	X	✓ (small e.g., *Pogona*)	
Turtles	X	✓	X	X	X	X	X	
Bats	X	✓ (medium to large)	X	✓ microbats	X	X	X	
Rodents	✓ (small *Pseudomys,* e.g., ash-grey mouse)	✓ (large e.g., *Rattus*)	X	✓ (small (e.g., house mouse), those that do not slough skin)	✓ (small *Pseudomys*)	✓ (medium to large, e.g., *Rattus*, rock-rats, tree-rats)	X	
Other small mammals (e.g., small dasyurids)	✓	X	X	✓ (e.g., dunnarts)	X	✓ (e.g., phascogales)	X	
Medium sized mammals (e.g., brushtail possum, rock wallaby)	X	✓	X	X	X	X	X	Pistol grip (e.g., chuditch, possums), tail grab for transfer (macropods)
Large mammals	X	✓	X	X	X	X	X	

7 Maintaining hygiene

Maintaining hygiene is very important and precautions must be taken to prevent the risk of cross infection between animals and from animals to humans. Sick or injured animals require higher hygiene considerations due to the increased risk of disease transmission.

Personnel must take precautions to minimise the risk of disease transmission. All materials and equipment used in the capture, holding transport and manipulation of animals must be cleaned and maintained in a way that minimises the assessed risk of disease transmission. Contaminated equipment must be disinfected between animals and between locations where the equipment is used.

Refer to the department SOP for *Managing Disease Risk and Biosecurity in Wildlife Management* for further advice.

8 Preventing injuries to animals and handlers

Many animals do not tolerate physical restraint and therefore there is an increased potential for injury to the animal or handler. If the potential for human or animal injury reaches an unacceptable level the animal should not be handled. If handling the animal results in excessive stress to the animal (or handler) then all attempts to restrain the animal should be stopped at once. It may also be necessary to limit all attempts to measure the animal (recording ID and sex only) and immediately releasing the animal to reduce the likelihood of injury to the animal or handler.

Where animals are restrained by hand, injury to animals and handlers can be prevented or minimised by:

- Using personal protection equipment:
    - Long sleeve clothing: to reduce the risk of cuts and scratches to the arms and legs.
    - Goggles/face mask/safety glasses: to protect eyes from birds with sharp beaks at the end of long necks (e.g., herons) or animals which secrete substances (e.g., cane toad).
    - Gloves (leather): can be useful for animals with sharp claws, teeth and spines or venom glands but may reduce dexterity
    - Ear plugs: can protect ears in situations where personnel are exposed to loud/excessive noise for long periods of time (e.g., working with cockatoos).
- Using restraint aids such as towels and bags to minimise the force and effort required to restrain the animal and to reduce stress.
- Knowing the correct restraint techniques.
- Utilising as many people as required to safely restrain an animal with minimal stress.
- Limiting the time, the animal is restrained.

- Using alternatives methods of restraint (e.g., anaesthesia) if an animal is excessively resisting hand restraint.
- If an animal is injured during hand restraint, superficial wounds should be treated, refer to the department SOP for *First Aid for Animals*.
- If an animal is seriously injured, refer to the flowchart in the department SOP for *Euthanasia of Animals Under Field Conditions* to make the decision on whether or not to euthanise or seek veterinary care.

9 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 3). Other groups, organisations or individuals using this SOP to guide their restraint of fauna 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 3 provides advice for standard monitoring only.

Table 3 Competency requirements for Animal Handlers of projects involving the hand restraint of wildlife

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 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 processing skills/experience required	Experience in hand restraint of fauna	Personnel should be experienced at handling and restraint of the range of species likely to be captured. This experience is best obtained under supervision of more experienced personnel. In applications, provide details on experience relating to the expected species or species groups.
	Experience managing disease 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 hand restraint methods and animal welfare requirements, a guide to the experience and skill requirements for an animal handler to be considered competent to restrain animals by hand 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 hand restraint of similar species.
- Currency of time in field: within the past 10 years.

10 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 guidanceA. 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.

11 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*
- *SOP First Aid for Animals*

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

12 Further Reading

The following SOPs have been mentioned in this advice and it is recommended that they are consulted when proposing to utilise hand restraint of wildlife:

- Department SOP *Hand Capture of Wildlife*
- Department SOP *Animal Handling and Restraint using Soft Containment*
- Department SOP *Transport and Temporary Holding of Wildlife*
- Department SOP *Short-term joey intervention procedures*
- Department SOP *First Aid for Animals*
- Department SOP *Managing Disease Risk and Biosecurity in Wildlife Management*
- 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.

First Responders Resource Guide for Seabird Emergencies (2014). New South Wales Environmental Trust. https://seabirdrescue.org.au/wp-content/uploads/2021/05/First-responders-resource-guide-for-seabird-emergencies.pdf

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14 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.

Large bird- A bird that will require at least two hands to restrain e.g. Pelican

Large mammal: Any mammal weighing over 5500 g.

Medium bird: A bird that usually requires two hands for restraint e.g. Australian Raven.

Restraint: Restriction of an animal's movement by hand (Sharpe *et al*., 2007).

Small bird: A bird that can be restrained with one hand e.g. Willy Wagtail.

Small/medium sized mammal: Any mammal weighing up to 5500 g.