

Charles Darwin University Animal Ethics Committee

Standard Operating Procedure:

DPAW SOP 06.2020 First Aid For Animals

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Standard Operating Procedure

FIRST AID FOR ANIMALS

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Prepared for: Animal Ethics Committee

Version 1.1

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Version 1.1


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Version 1.0

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1 Purpose

Encounters with wildlife may result in the requirement to administer first aid. This involves:

- Treating superficial wounds (e.g. scrapes, scratches, minor cuts).
- Providing appropriate temporary containment until further treatment can be provided (e.g. warmth dark environment, minimal disturbance).
- Seeking veterinary treatment for major injuries or conditions (e.g. capture myopathy, disease).
- Euthanasia of animals too seriously injured to recover. Unless there is a strong justification for the value of the individual animal (e.g. threatened species), it may not be in the best welfare interests of the animal to pursue veterinary care.

All human interference will be stressful on an animal. The particular behaviour and responses likely from the animal is dependent on species, sex, age, temperament and size. Additionally the distance and time it may take to reach veterinary care needs to be taken into consideration on the administration of first aid and decisions regarding subsequent courses of action.

The aim of administering first aid is to prevent suffering and, where practical and humane, preserve life.

By providing basic advice this standard operating procedure (SOP) aims to assist in the assessment and treatment of wildlife requiring first aid to ensure the best care available is administered.

2 Scope

This SOP has been written specifically for scientific and education purposes, and endorsed by the Department's Animal Ethics Committee. However, this SOP may also be appropriate for other situations.

This SOP applies to all fauna survey and monitoring activities undertaken across the State by Department of Biodiversity, Conservation and Attractions (hereafter Department) personnel. It may also be used to guide fauna monitoring activities undertaken by Natural Resource Management groups, consultants, researchers and any other individuals or organisations. All Department personnel involved in fauna related activities should be familiar with the content of this document.

This SOP focuses on first aid situations encountered by field personnel involved in fauna survey and monitoring activities. In these situations the following outcomes are decided:

- Basic care is provided and the animal is released
- Animal is taken into care
- Euthanasia

When an animal is taken into care, the advice contained in Parks and Wildlife (2015) *Standards for Wildlife Rehabilitation in Western Australia* should be consulted. Rehabilitators must comply with the requirements of *Regulation 28A Caring for sick or injured fauna* of the *Wildlife Conservation Regulations 1970*. For any animal requiring

euthanasia the advice contained in the Department SOP for *Humane Killing of Animals under Field Conditions* should be reviewed and followed.

Projects involving wildlife may require a licence under the provisions of the *Wildlife Conservation Act 1950* and/or the *Biodiversity Conservation Act 2016*. Personnel should consult the Department's Wildlife Licensing Section and Animal Ethics Committee 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 provisions of 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 broader issues. A copy of the code may be viewed by visiting the National Health and Medical Research Council website (<http://www.nhmrc.gov.au>).

3 Definitions

Ameliorated: A situation is made better or improved.

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.

Closed fracture: A break in a bone, without the skin being broken.

First aid: The initial administration of care for an injured animal until more thorough veterinary attention can be sought (Kahn and Line, 2007).

Hyperthermia: An acute condition which occurs when the body temperature is abnormally high (Kahn and Line, 2007).

Hypothermia: A condition in which body temperature drops below normal levels (Kahn and Line, 2007).

Open fracture: A break in the bone where the skin has also been broken.

Orphan: A young animal whose parents are not there to raise them either through abandonment or death.

Prognosis: A forecast of the likely outcome of a disease or illness.

Rigor mortis: The stiffening of the body after death.

4 Procedure Outline

Animals requiring first aid may be encountered in a variety of situations, however the same decisions or steps are required to assess the situation and determine the best course of action. The key question is whether the injury/condition can be ameliorated by on the spot or short term (<24hrs) first aid treatment and whether it is unlikely to cause significant ongoing pain and/or compromise the animal's ability to heal naturally and survive.

The decision to release/leave, treat, seek veterinary/expert care or euthanase an animal will depend on a judgement of the likely prognosis of the animal. An animal should only be

removed from where it is found if the animal is expected to respond positively to care within 24 hours. The suffering of an animal should not be prolonged if the prognosis is poor.

Assessment levels:

1. Leave the animal
2. Treat the wound (e.g. superficial or marking wound) or condition (e.g. hypothermia, shock etc.)
3. Seek veterinary treatment
4. Euthanase the animal

To make this decision some knowledge about the situation and the seriousness of the animal's injuries or condition is needed. The first step in first aid for animals is therefore an assessment of the situation and making a decision on whether to treat and how to treat. Refer to Appendix 1 for the decision making process. Advice for initial assessment of the situation as well as treatment of common injuries and conditions is contained in the following sections.

4.1 Assessing the situation

(a) Assess the immediate threat to yourself and the animal. Decide if it is safe to approach and take action to minimise or remove any hazards to your own safety and the safety of the animal. This might involve switching on vehicle hazard lights to warn traffic of an incident on the road or keeping birds or other animals away, which may be harassing the injured animal. If capture/handling appears necessary, gather appropriate equipment before approaching the animal. It may be helpful to have a suitable transport box available (e.g. cardboard box) and a blanket/large towel or handling bag.

(b) Observe the animal for signs of injury or illness and abnormal behaviour as outlined in Table 1. Initially, this should be done from a safe distance.

Table 1 Guide to the initial observations that can be made when assessing a sick/injured animal (adapted from Morgan, 2008)

Observation	Assessment
Body symmetry	Are there any obviously damaged or misshapen body parts (indicating fractures etc.)?
Mental status	Is the animal bright, alert and responsive or is it quiet and dull?
Posture	Is the animal standing or up in its normal posture, or is it lying down? Is it balancing normally or is it using another part of its body to help it balance?
Gait	If the animal can move, is it moving as it should?
Respiration	Is the animal breathing with an open mouth or gasping for air? Is respiration loud? Is there any discharge from the nose?
Body covering	Are there any obvious signs of damage to the animal's coat (such as bald patches) or feathers? Are the feathers fluffed up?
Wounds	Are there any obvious signs of injury (blood, wounds)?

(c) Always approach with care. The animal will be scared and may try to run away, bite and scratch you. In particular, Macropods are capable of lashing out with their powerful back legs, even if severely injured. Two people may be required for birds or larger and powerful animals such as wallabies.

(d) If the animal can be handled, safely confine it in a manner that is appropriate for a closer health assessment, treatment and/or transport (e.g. wrap it in a towel or handling bag, covering its eyes and place it in a cardboard box). Ensure the animal can breathe (clear airways and nostrils, and don't constrict the chest). For advice on hand capture and handling techniques of different animal groups refer to the Department SOPs for *Hand Capture of Wildlife* and *Hand Restraint of Wildlife*.

Wild animals do not like to be handled and are likely to defend themselves and try to escape. It is important that the animal is captured and handled in a way to ensure the animal doesn't suffer further injury or additional stress. Handling should be brief and aimed at getting the animal into a warm, dark, quiet enclosed (with ventilation) space as quickly and stress free as possible (QLD EPA, 2005).

Do not try to handle an injured animal if there is a chance you will be at risk (e.g. venomous snakes, bats, animals showing signs of having zoonotic pathogens).

If you are unsure about handling the animal, keep it safe until experienced help arrives

(e) Assess the animal's health - level of consciousness, external injuries/abnormalities, body condition, bleeding, discharges, colour of mucous membranes, swellings, bruising, pain, response to sight/sound, respiratory rate, heart rate, temperature, paralysis, evidence of breeding (e.g. enlarged teats, pouch young).

If an injury does not immediately compromise the survival of the animal and is likely to be able to heal naturally, the animal may be able to be released with just immediate first aid care. In the case of serious, life threatening injuries (those involving the head, chest, abdomen and limbs if it compromises their function), euthanasia may often be the best option.

(f) If possible obtain a weight for the animal to aid in any later administration of drugs.

(g) Take note of where the animal has been found, street name, GPS reading etc., for reporting purposes and so that it can be released back where it came from.

4.2 Treating injuries

Generally, minor injuries can be treated in the field allowing for the animal to be immediately released after treatment. Major injuries require expert care and the possibility of the animal requiring ongoing care or euthanasia. The following sections outline advice for specific kinds of injuries.

To treat minor injuries, field trapping kits should contain basic first aid equipment such as topical antiseptic, swabs/gauze, tweezers, scissors etc. Some knowledge of basic first aid and recommended euthanasia techniques for a variety of animal groups is advised.

4.2.1 Bleeding

It is important to stem any bleeding as soon as possible because blood loss can lead to shock, collapse and death.

Bleeding is classified according to which blood vessel is damaged. Arterial blood is from the pulmonary vein, left chambers of the heart and arteries. It is bright red in colour and it will spurt from the wound because the blood vessels are under high pressure. Venous blood is from the veins, is dark red in colour and flows rather than spurts. Capillary blood is from very thin blood vessels and it is the most common. It is slow flowing because the blood vessels are under low pressure (St John Ambulance Australia, 1998).

Even when an animal has no obvious wounds it may still be bleeding internally. Internal bleeding can be hard to diagnose. Some signs of internal bleeding include coughing up or vomiting blood, a bloated abdomen, and difficulty breathing. If internal bleeding is suspected then the animal is likely to have a poor prognosis.

External bleeding can be treated by applying direct pressure to the wound until it stops. For severe bleeding, a pressure bandage can be applied, and should the bleeding come through the bandage, another bandage should be applied over the top. Never take the first bandage off. If the animal has lost large amounts of blood it is likely to have a poor prognosis.

For internal and severe external bleeding, a decision to euthanase or seek veterinary care will need to be made.

4.2.2 Wounds

Not all wounds will require veterinary treatment. Deciding whether the wound is superficial or deep will determine the appropriate treatment for the wound. Superficial wounds can be cleaned with dilute antiseptic (e.g. Betadine®) but veterinary care should be sought for deep wounds. Some wounds, although they may be considered in a pet to warrant veterinary care, may in wildlife situations need to be weighed against the relative accessibility of veterinary care and the time frame involved. The severity of the injury will determine the most appropriate course of action. In all cases basic treatment and release as soon as possible is the preferred option however seeking veterinary care or euthanasia should be considered if prognosis with basic treatment is poor.

Types of wounds can include abrasions, open wounds (e.g. cuts), and penetrating wounds (e.g. animal bites or due to a foreign object). The biggest problem with wounds is the possibility of infection. A summary of common types of wounds and their management is contained in Table 2.

Table 2 Types of wounds and their management (adapted from St John Ambulance Australia, 1998)

Type of wound	Description and management
Bruise	A closed wound with bleeding below the surface of the skin. If not extensive, or not causing disability, then it's better to release as soon as possible to avoid stress and struggling resulting in further injury and exacerbating bruising.
Abrasion	An open wound with the outer layer of skin and underlying blood vessels exposed. The wound should be cleaned with dilute antiseptic. The animal can generally be released.
Cut	An open wound caused by something sharp, where the skin, soft tissue or muscle is severed. The wound needs to be cleaned thoroughly and generally the animal can be released. If the cut is large or deep it will require veterinary care

Type of wound	Description and management
	or euthanasia.
Laceration	An open wound (e.g. caused by wire, teeth or claws) where the skin and underlying tissue are damaged. The wound should be cleaned thoroughly. If the laceration is extensive it will require veterinary care or euthanasia.
Puncture	An open wound caused by blunt or pointed objects in which the skin and underlying tissue is damaged, as well as possibly organ damage. Wound should be cleaned thoroughly. If the puncture severe it will require veterinary care or euthanasia.
Tear	An open wound caused by something sharp. The skin and other soft tissue will be partially or completely torn away. The skin should be returned to its original position and a pressure bandage applied. The animal may require veterinary care or euthanasia.
Embedded object	An open wound in which an object has embedded itself. Do not try and remove the object. The animal will require veterinary care or euthanasia.

4.2.3 Fractures, sprains and strains

Fractures are broken bones and they can be open, where the bone is exposed through skin, or closed, where the skin is unbroken. An initial assessment needs to be made to determine if a fracture or dislocation has occurred by feeling for abnormalities and checking for normal range of movement in limbs/pain response etc.

Signs that an animal may have a fracture include not using the limb, pain at or near the fracture site, the limb may be deformed or twisted, swelling around the fracture and shock.

The prognosis is also dependent on the number of bones involved, if the bone is in one or more pieces, the location of the fracture and the length of time the fracture has been broken. Open fractures carry a poor prognosis due to the increased chances of infection. Pressure or splints must never be applied to an open fracture; however they should be covered to prevent dirt entering the wound and loss of body fluid.

Symptoms of sprains and strains are similar to fractures and if in doubt should be treated as closed fractures. A temporary splint and/or bandaging may be applied in the field to stabilise the injury prior to veterinary attention being sought, if the animal will tolerate it with minimal additional stress.

If a fracture is suspected then the animal is likely to have a poor prognosis. A decision to euthanase or seek veterinary attention will need to be made. It must be kept in mind that healing time for fractures is a minimum of 6 weeks with no guarantee of a full return to the wild.

4.2.4 Abdominal injuries

Abdominal injuries usually result from heavy impacts (e.g. car strike, dog attack). Signs of abdominal injury include shock, pain, vomiting and evidence of injury such as swelling, bruising and protrusion of intestines.

If abdominal injuries are suspected then the animal is likely to have a poor prognosis even with treatment. A decision to euthanase or seek veterinary attention will need to be made.

4.2.5 Chest injuries

Chest injuries can range from mild to life threatening. Signs of chest injuries include pain, increased breathing effort or short rapid breaths, swelling at the site and/or pale gums. An animal in severe respiratory distress will have an extended head and gasp for air.

If chest injuries are suspected then the animal is likely to have a poor prognosis even with treatment. A decision to euthanase or seek veterinary attention will need to be made.

4.2.6 Head and spinal injuries

Head and spinal injuries can be serious. Signs include unconsciousness, abnormal behaviour, blood or clear fluid coming from the nose or ears and unequal pupil size.

If an animal is unconscious it must be placed on its side and the airways kept clear. The head should be slightly lower than the neck and chest to allow any fluid to drain from the mouth.

The most common cause of spinal injuries is through collision with a motor vehicle. If spinal injuries are suspected (e.g. weakness in hindquarters, pain, partial or total paralysis) handling must be done very carefully. Euthanasia may be the only option for an animal with spinal injuries.

If head or spinal injuries are suspected then the animal is likely to have a poor prognosis if left untreated. A decision to euthanase or seek veterinary attention will need to be made.

4.2.7 Eye injuries

The eyes are very sensitive and can react negatively to any injury. Foreign objects, smoke and wounds are common causes of eye injuries and may result in infections and can also cause blindness.

A foreign object in the eye can cause discharge and redness, with the animal rubbing or pawing at the eye. The eye can be opened to examine it, and the foreign material can be washed out with clean water. If this doesn't work, further attempts can be made to remove the object but NEVER try and remove if the object is penetrating the globe. Any attempt to remove any foreign material by means other than flushing (using sterile saline or fresh water) in a conscious animal is likely to risk in additional injury to the eye.

Eye injuries resulting from smoke should be treated by flushing the eyes with water or saline.

Wounds to the eyes are more serious than irritation from foreign objects or smoke and can cause bloody discharge or blood in the eye itself. The severity of the injury will determine the most appropriate course of action. In all cases, basic treatment and release as soon as possible is the preferred option however seeking veterinary care or euthanasia should be considered if prognosis with basic treatment is poor.

4.2.8 Burns

Animals with burns require veterinary attention unless the burn is very mild. Without skin, fluid and electrolytes are lost from the animal's body. When assessing burns on animals the depth (superficial, partial thickness or full thickness), extent (percentage of body burnt) and location of the burn(s) needs to be considered (Fowler and Wood, *n.d.*). An animal with burns to over 50% of their body has no positive prognosis and euthanasia is recommended (Fowler and Wood, *n.d.*).

Cold water or a cold compress (i.e. wet cloth) needs to be applied to the burn without overcooling the animal. The animal may also need to be treated for shock, pain and dehydration. If the burns are not mild and the animal is likely to have a poor prognosis and a decision to euthanase or seek veterinary treatment will need to be made.

4.3 Treating conditions

4.3.1 Stress

Stress is one of the most common factors leading to death and disease in wildlife (QLD EPA, 2005). Signs of stress include:

- trying to attack or escape
- reduced activity or listlessness
- grinding teeth
- licking of forearms/shoulders/chest/hind limbs or flanks

The best way to treat stress is by placing the animal in a dark, quiet, warm (but not too warm) environment to allow them to calm down. The use of a pouch/handling bag is recommended where possible for mammals.

4.3.2 Shock

Shock is a result of a collapsed circulatory system and can occur due to stress, blood loss, fluid loss, low blood pressure and a damaged heart. Many animals which are badly injured show signs of shock.

Signs of shock include rapid pulse or breathing, hypothermia (e.g. mammals may shiver and birds fluff their feathers) and pale/white gums. The signs of shock are not always obvious and can develop over time. An animal in shock is usually still, quiet and cold.

Treatment for shock should first aim at reducing stress (e.g. covering the animal's eyes), stopping any visible signs of bleeding and then making sure the animal is kept warm and quiet.

Oral fluids should not be given to animals in shock (Morgan, 2008). Once the animal has been warmed up, warm fluids can be given.

4.3.3 Hypothermia

Hypothermia is caused by a lowering of the body temperature. Signs of hypothermia include cold skin, lethargy, bradycardia (slow heart rate).

The animal needs to be gradually warmed with a constant artificial heat source (see Table 3) such as body contact in a handling bag (if no other heat source available), heat lamp or a hot water bottle.

It is preferable that the heat source comes from outside of the holding container and directed at one end so the animal can move closer to or away from the heat source. If the heat source is inside the holding container it must be padded or shielded to avoid the animal burning itself. Care must be taken not to have any electrical connections or wiring within reach of the animal. Place a small dish of water (that cannot be tipped over by the animal) near the heat source. (Choy, 2006). Heat can be lethal so always keep a very close watch as overheating is a danger.

Once the animal has been warmed to its normal body temperature, high energy fluids can be offered (e.g. Lectade®) (Choy, 2006).

Table 3 Suggested air temperatures for shocked and/or injured wildlife (QLD EPA, 2005)

	Animal Type	Recommended Air Temperature
Mammals	Furless young	32°C
	Furred young	28°C
	Adults	28°C
	Echidna	25°C
Birds	Featherless young	36°C
	Feathered young	30°C
	Adults	26-27°C
Reptiles	Snakes	30°C
	Lizards	30°C
	Freshwater turtles	26°C

4.3.4 Dehydration

Dehydration is the excessive loss of fluid from the body. It can be life threatening as it can prevent every system in the body of an animal from functioning properly.

To check for signs of dehydration, in mammals, pinch the skin of the animal to check for elasticity. Generally tenting of the skin will occur in a dehydrated animal (skin will have a loss of elasticity and won't bounce back when you pinch it). Sunken or dry eyes, a glazed look and dry tacky gums are also signs of dehydration.

It is important not to offer fluid therapy to an animal until it is warm and its condition has stabilised.

The best way to offer fluids (e.g. water or Lectade®) to an animal is by placing a shallow container of water in with them as long as they cannot tip it and get wet. If they are unable to drink by themselves, you can wet your fingers and touch the animals mouth, this usually results in a swallow response. **NEVER** pour water down an animal's throat.

Larger animals can go a bit longer without fluids, but smaller marsupials and birds require fluids sooner. Native animals require special food and the wrong food can give them diarrhoea which can lead rapidly to dehydration (e.g. native animals should not be given cow's milk).

Birds have a high metabolic rate and deteriorate rapidly. If you are unable to get the bird to a rehabilitator straight away then the most important requirement is warmth and fluid. If available, offer an electrolyte solution (e.g. Spark®, Hartmanns®) to the bird. Birds have an airway in their throat, so never attempt to pour fluid down a bird's throat as you will drown them.

The severity of dehydration will determine the most appropriate course of action. In all cases, basic treatment and release as soon as possible is the preferred option however seeking veterinary care or euthanasia should be considered if the prognosis is poor.

4.3.5 Hyperthermia

Severe changes (renal failure, hypotensive shock, coma and death) can develop rapidly with hyperthermia. Signs of hyperthermia include:

- Rapid panting
- Holding of wings away from the body
- Hypersalivation
- Licking of limbs/shoulders/chest/flanks (or dried saliva in those same areas)
- Congested mucous membranes
- Tachycardia (rapid heart rate)
- Diarrhoea
- Dehydration.

The animal must be placed in a cool quiet environment, gradually reducing the body temperature with water and wet towels and cool circulating air.

4.3.6 Capture myopathy

Capture myopathy is a condition associated with the capture and handling of many species of mammals and birds that results in degeneration of skeletal and/or cardiac muscle (Shepherd et al. 1988). All ages and sexes are susceptible. The condition can result in sudden death but death may occur weeks after capture as a result of complications including abnormalities to posture and gait and increased susceptibility to predation (Abbott *et al.*, 2005). Signs and symptoms include a drooping head and neck, laboured breathing, tremors, lethargy and lack of coordination or paralysis and collapse.

Prevention of the condition through efforts to minimise stress and especially hyperthermia in animals is better than treatment options. Treatment is usually prolonged and for anything but the mildest of cases prognosis for recovery is poor.

If you suspect an animal has capture myopathy, keep the animal calm, quiet and resting. Do not chase the animal, approach quietly and if possible plan for two or more people to assist in the capture. If capture myopathy is suspected and the animal is likely to have a poor prognosis if left untreated, a decision to euthanase or seek veterinary care will need to be made. Early diagnosis and treatment will make a successful recovery more likely.

The Department's Animal Ethics Committee will require records of any animals suspected to be suffering from capture myopathy.

4.3.7 Concussion

If an animal appears concussed (e.g. from hitting side of net, or flying into car window), it should be placed in a dark environment (do not provide extra heat) and rechecked in 2-4 hours to reassess the situation (e.g. its ability to fly).

It is recommended that animals suffering concussion should not be released until after 24 hours to allow for complete recovery.

4.3.8 Parasitic load

Parasites are generally not emergency situations but can significantly hinder an animal's ability to recover (Choy, 2006). A sign that an animal may have internal parasites is that it is extremely skinny. If it is suspected that an animal has a parasite burden care must be taken

to avoid zoonotic diseases (see Section 9). Unless the animal is a particularly valuable individual (e.g. part of a small reintroduced population or remnant threatened species), treatment should not be given as it is not warranted and may be a sign of poor genetics. If the animal is severely debilitated, then euthanasia should be considered for welfare reasons.

Fleas, lice and mites can be treated with a topical insecticide (such as those containing selamectin) and ticks and maggots removed with tweezers, however if an animal is infested with maggots and they have invaded the body cavity, euthanasia is recommended (Choy, 2006).

4.3.9 Infections and diseases

If an animal is known to be infected with an infectious disease that cannot be successfully treated (Psittacine Beak and Feather Disease, Australian Bat Lyssavirus) it should be euthanased. Refer to the Department SOP for *Managing Disease Risk in Wildlife Management* for advice on euthanasia. Care must be taken to avoid zoonotic diseases (see Section 9).

4.4 Other first aid situations

4.4.1 Venomous bites and stings

Bites and stings can be dangerous to an animal if they are allergic to the venom injected. Signs of bites or stings can include drooling, vomiting, muscle weakness, difficulty breathing, convulsions etc.

Pressure immobilisation is used for snake and spider bites. Cold compress can be applied to other bites and stings, however unless threatening the animal's ability to breath or you suspect bite/sting from a venomous animal, treat for shock and reassess regularly before release.

If you suspect a venomous snake or spider bite then the animal is likely to have a poor prognosis if left untreated. A decision will need to be made to euthanase or seek veterinary treatment.

4.4.2 Car strike

Kangaroos, wallabies, possums, bandicoots, reptiles and birds are often found injured beside the road. Injury can vary from shock, fractures to internal bleeding. The severity of the injury will determine the most appropriate course of action. In all cases basic treatment and release is the preferred option however seeking veterinary care or euthanasia should be considered if prognosis is poor.

4.4.3 Dog or cat attacks

Cats often prey on smaller mammals, reptiles and birds. Dogs usually attack larger animals such as possums, wallabies, bandicoots, birds and bobtails. Both dogs and cats have a lot of bacteria in their mouth and it is typical for infections to result from bite wounds (QLD EPA, 2005). Any open wounds should be lightly covered to prevent fly strike. The severity of the injury will determine the most appropriate course of action. If the prognosis is poor a decision will need to be made to euthanase or seek veterinary treatment.

4.4.4 Poisoning

Poisons can be swallowed, inhaled or absorbed through the skin. Poisoning of native animals generally occurs through ingestion of the poison (e.g. Ratsack®), or by eating prey that has been poisoned. Insectivorous mammals may be affected by insecticidal poisons.

Signs that an animal has been poisoned include:

- Vomiting
- Salivation
- Muscle tremors
- Uncoordinated
- Convulsions
- Paralysis
- Coma
- Death

If you suspect poisoning then the animal is likely to have a poor prognosis if left untreated. A decision will need to be made to euthanase or seek veterinary attention. The Poisons Information Helpline (13 11 26) can be contacted for more advice.

4.4.5 Oil contamination

When handling oiled wildlife it is imperative to wear protective clothing, gloves and eye wear (certain bird species are notorious for inflicting eye damage) and ensure that if there are strong vapours emanating from the oiled animal you only deal with it in a well ventilated area.

Animals contaminated with oil will ideally require a veterinary assessment and treatment to enhance survival rates and prevent further illness. The types of wildlife affected during an oil spill event will vary depending on the location of the spill. Birds are usually the predominant type of wildlife affected. However other species may also be affected, including potentially dangerous species (e.g. seals, sea lions, dolphins, sea snakes, crocodiles) and should only be dealt with by persons with the appropriate experience.

Oil destroys the water proofing and insulation of feathers (for birds) and fur (for seals and sea lions) and therefore water penetrates the animal's fur and rapidly results in loss of heat, as well as buoyancy and flight. Birds that are unable to fly are also more vulnerable to predation. Further, the presence of oil on the feathers, and the inability to thermoregulate, stimulate the bird to preen fastidiously to try and restore the integrity of the feathers. Oiled birds will often preen at the exclusion of all other activities, including feeding and resting. Birds can also ingest or inhale oil as they try to preen oil from their feathers or feed on a contaminated food source. While ingestion and inhalation can kill animals immediately, more often it results in lung, liver, gastro-intestinal, neurological and kidney damage. The immune system is also often suppressed making animals more susceptible to other diseases.

Oiled birds generally enter care in a significantly debilitated state. suffering dehydration, hypothermia, nutritional compromise and the stress of capture, transport and handling. It is consequently imperative not to rush into washing the bird immediately. A period of fluid therapy, nutritional support and rest are essential, ideally under veterinary care, in order to enhance the chances of survival through the cleaning process.

Instructions for the initial triage and first aid, washing, rinsing, drying and assessment of waterproofing of oiled animals is available in Appendices F and G of the *Western Australian Oiled Wildlife Response Plan* (Department of Parks and Wildlife and AMOSC, 2014). Further technical advice is available in the *Rescue and Rehabilitation of Oiled Birds Field Manual* (Walraven, 2004).

Once an animal has regained its waterproofing and is in a reasonable body condition, releasing it as soon as possible is the preferred option. If oil has been cleaned off and the animal is healthy but has significant damage to the feathers then flight, insulation and waterproofing function may be compromised. If this is the case, then birds cannot be released until a moult has occurred and new feathers have grown.

4.4.6 Mass casualties

When large numbers of animals require first aid (e.g. oil spills, cetacean stranding, bushfire etc.) it is critical to triage them. Human resources should be allocated to the animals that have the best chance of survival. Effective triage avoids prolonged suffering in animals that require immediate euthanasia.

When mass casualties are found immediately contact the Wildcare Helpline on (08) 9474 9055.

4.4.7 Orphans and evicted pouch young

All records regarding orphans (their care and fate) needs to be kept for annual reporting requirements of the Department's Animal Ethics Committee approved projects. If pouch young are taken into care the rehabilitator must comply with the requirements of *Regulation 28 of the Wildlife Conservation Regulations 1970*.

MAMMALS: If you find a dead marsupial, check the pouch for joeys as they can survive for several days after the mother's death. For advice on evicted pouch young refer to the Department SOP for *Care of Evicted Pouch Young*.

BIRDS: Some birds, especially young fledglings found on the ground generally do not require first aid. Some baby birds are left for a short time while their parents forage for food. Removing a baby bird unnecessarily can be very detrimental to its well-being. Unless the animal is in immediate danger (they should be left or put in a safer place off the ground) just keep an eye on it to ensure a parent returns to care for the baby. If the chick is featherless and you cannot find the nest it fell from it will need to be taken into care.

Orphan birds should be kept warm (especially featherless young). See Table 3 for suggested air temperatures for young birds. Humidity should be maintained at around 50-60%.

Orphan birds need to be taken to a wildlife rehabilitator for rearing within 1-2 hours. Oral fluids can be given to orphans by dropper to the beak if held for a longer period of time

BATS: Australian bats have the potential to be infected with Australian Bat Lyssavirus (see Section 9) and anyone handling bats must be vaccinated and use appropriate protective gear (e.g. gloves)

The baby bat should be offered a folded towel (or any other material such as a jumper) to cling onto as a substitute mum. Once the bat is clinging onto the towel, wrap another towel around it to keep it warm.

Orphan bats need to be taken to a wildlife rehabilitator for rearing.

4.5 Euthanasia

If the prognosis is poor or the animal is unsuitable for release, a decision to euthanase must be made. In some cases this will be obvious and in others a period of observation, assessment and evaluation is required. Refer to the flowchart in the Department SOP for *Humane Killing of Animals under Field Conditions*.

If the animal is an unusual or rare species, it may be of scientific interest. Bag, label and freeze the dead animal. The animal should be passed onto an appropriate organisation (the Department or the Western Australian Museum). Refer to the Department SOP for *Vouchering Vertebrate Fauna Specimens* for more advice.

Where legislation allows and the operator has received appropriate training and endorsement, euthanasia may also be performed by wildlife rehabilitators, wildlife authority personnel, RSPCA officers and police.

4.6 Transport

If possible inform the vet/wildlife rehabilitator receiving the animal, so they can be prepared for its arrival.

All animals must be contained during transport so they cannot escape. Ensure the container/bag is safely restrained within the vehicle (not in the boot or in an area near exhaust fumes). Keep in mind the kicking ranges of animals contained when placing them in the vehicle (e.g. a kangaroo contained in a sack will still be able to kick with force). Minimise noise, light and visual stimuli around the animal and provide adequate ventilation. Care needs to be taken when driving. The duration should be short if possible and the animal checked intermittently (Vogelnest and Woods, 2008).

For advice on transporting animals refer to the Department SOP for *Transport and Temporary Holding of Wildlife*

4.7 Record keeping

Record keeping is important in wildlife rescue/first aid. A detailed history gives rehabilitators or veterinarians information about the situation and also allows the animal to be returned to the exact location of origin if rehabilitation is successful.

5 Emergency contacts

For further advice should you find a sick, injured or orphaned native animal contact Wildcare Helpline on (08) 9474 9055. The Wildcare Helpline operates 24 hours a day, seven days a week, diverting to afterhours numbers at nights and weekends, to provide immediate assistance.

Other numbers you may need to aid in helping the animal (or yourself) include:

- Poison Info 13 11 26
- Electricity 13 13 51
- Water 13 13 75
- Gas 13 13 52
- Police 13 14 44 (non-life threatening situations)

6 Level of Impact

The intention of providing first aid is to have a beneficial positive impact on the welfare of animals involved. There are a range of ways to increase the chance of a positive outcome and some of these are highlighted in the next section. Euthanasia is a possible end point and should be considered if it's in the best interest for the animals involved.

7 Ethical Considerations

To reduce the level of impact of the administration of first aid on the welfare of animals there are a number of ethical considerations that should be addressed.

7.1 First aid equipment

Personnel involved in trapping animals will need to be prepared and have the necessary equipment on hand (e.g. first aid kit, teats, Lactaid, Fixamull tape, hot water bottle, handling bags etc.) in case of injuries or pouch young eviction.

Where first aid equipment is not on hand, improvisations will need to be made in order to administer first aid (e.g. if no hot water bottles are available, body heat will need to be used to warm animals).

7.2 Wildlife rehabilitators

Personnel must ensure that wildlife rehabilitators are notified prior to the commencement of trapping where pouch young evictions are likely to occur (e.g. trapping of woylies and quenda). This ensures that rehabilitators are ready to receive animals and reduces time wasted trying to find rehabilitators if a pouch young is evicted and are in need of emergency care. Rehabilitators will also often assist with transportation of animals to reduce the time required to stabilise pouch young. Refer to the Department SOP for *Care of Evicted Pouch Young*.

Contact the Department's Animal Ethics Committee Executive Officer for recommended rehabilitators.

7.3 Animal handling

To ensure minimal stress to an animal, they should only be handled for as long as required to determine the extent of injury/illness and apply initial first aid. Mammals can be placed in a bag and examined by exposing small portions of the body through the bag opening to reduce stress.

7.4 Veterinary treatment

Personnel are required to treat injured animals during trapping/marketing activities and when appropriate decide whether an animal may require further veterinary treatment. All eye injuries require treatment and an animal should never be released with an eye injury/infection.

7.5 Injury, unexpected deaths and euthanasia

If an animal is seriously injured, refer to the flowchart in the Department SOP for *Humane Killing of Animals under Field Conditions* to make the decision on whether or not to euthanase or seek veterinary care. If euthanasia is deemed necessary then it needs to be implemented humanely.

For projects approved by the Department's Animal Ethics Committee, adverse events such as injury, unexpected deaths or euthanasia must be reported in writing to the AEC Executive Officer on return to the office (as per 2.2.28 of The Code) by completing an *Adverse Events Form*. Guidance on field euthanasia procedures is described in the Department SOP for *Humane Killing of Animals under Field Conditions*. Where disease may be suspected, refer to the Department SOP for *Managing Disease Risk in Wildlife Management* for further guidance.

8 Competencies and Approvals

Department personnel, and other external parties covered by the Department's Animal Ethics Committee, undertaking projects that may involve applying first aid to animals require approval from the committee and will need to satisfy the competency requirements detailed in Table 4. This is to ensure that personnel involved have the necessary knowledge to apply first basic first aid to animals. Other groups, organisations or individuals using this SOP to guide their fauna monitoring activities are encouraged to also meet these competency requirements as well as their basic animal welfare legislative obligations.

It should be noted that details such as intensity of the study being undertaken will determine the level of competency required and Table 4 provides advice for basic monitoring only.

Table 4 Competency requirements for Animal Handlers of projects using first aid to treat animals

Competency category	Competency requirement	Competency assessment
Wildlife licences	Licence to take fauna for scientific purposes (Reg 17) OR Licence to take fauna for educational or public purposes (Reg 15)	Provide licence number
Formal training <i>Note: Suitable levels of skills/experience can substitute for formal training requirements</i>	Department Fauna Management Course or equivalent training	Provide course year
Animal handling and processing skills/experience	Experience in handling the species likely to be encountered during	Personnel must be confident at hand capture and handling of species likely to be encountered during monitoring

Competency category	Competency requirement	Competency assessment
	monitoring and surveying.	and surveying. They should be familiar with first aid procedures. This experience is best obtained under supervision of more experienced personnel. Estimated total time in field: Min 2 years involved in similar projects.
Euthanasia <i>Note: Any of the following competencies may be required depending on the euthanasia methods chosen for the project.</i>	Training and experience in the use of manual techniques ----- Training and experience in using firearms ----- Qualifications, training and experience in using drugs	Refer to Department SOP for <i>Humane Killing of Animals under Field Conditions</i> for competency requirements.

9 Occupational Health and Safety

Always carry a first aid kit in your vehicle and be aware of your own safety and the safety of others as well as the animals when handling.

A job safety analysis is recommended prior to undertaking any monitoring which involves hand capture. This safety analysis should include the following considerations.

9.1 Animal bites, stings and scratches

Care should be taken when handling animals to avoid bites, stings or scratches. All inflicted injuries (even superficial ones) should be appropriately treated as soon as possible to ameliorate possible allergic reaction, prevent infection and promote healing.

To improve safety, field personnel should be aware of the treatment for snakebite and carry appropriate pressure bandages. Personnel should also have up-to-date tetanus vaccinations. Department personnel must not capture bats unless fully vaccinated against Australian Bat Lyssavirus.

If Department personnel or volunteers are injured, please refer to the Department's Health and Safety Section's 'Report a Hazard, near-miss or incident' intranet page, which can be found at http://intranet/csd/People_Services/rm/Pages/ReportingHazards,Near-MissesandIncidents.aspxZoonoses.

9.2 Zoonoses

There are a number of diseases carried by animals that can be transmitted to humans (i.e. zoonoses such as Toxoplasmosis, Leptospirosis, Salmonella). All personnel must take precautions to minimise the risk of disease transmission to protect themselves, their families and wildlife populations.

Advice on minimising disease risk is contained in the Department SOP for *Managing Disease Risk in Wildlife Management*.

9.3 Allergies

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

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

10 Further Reading

The following SOPs have been mentioned in this advice regarding applying first aid to animals and it is recommended that they are also consulted when proposing fauna related activities.

- Department SOP *Vouchering Vertebrate Fauna Specimens*
- Department SOP *Hand Restraint of Wildlife*
- Department SOP *Hand Capture of Wildlife*
- Department SOP *Transport and Temporary Holding of Wildlife*
- Department SOP *Care of Evicted Pouch Young*
- Department SOP *Humane Killing of Animals under Field Conditions*
- Department SOP *Managing Disease Risk in Wildlife Management*

For further advice refer also to:

- The Department's *Standards for Wildlife Rehabilitation in Western Australia*.
<https://www.dpaw.wa.gov.au/get-involved/wildlife-rehabilitation-and-courses/160-minimum-standards-for-wildlife-rehabilitation-in-wa>
- The Department's *Oiled Wildlife Response Plan 2014*.
<https://www.dpaw.wa.gov.au/management/marine/marine-wildlife/marine-wildlife-response?showall=&start=2>
- Walraven, E. (2004). *Field Manual: Rescue and Rehabilitation of Oiled Birds*. New South Wales: Zoological Parks Board of New South Wales.

11 References

Abbott, C.W., Dabbert, C.B., Lucia, D.R. and Mitchell, R.B. (2005). Does muscular damage during capture and handling handicap radiomarked northern bobwhites? *Journal of Wildlife Management* 69: 664-670.

Department of Parks and Wildlife (2015) *Standards for Wildlife Rehabilitation in Western Australia*, Perth, WA: Department of Parks and Wildlife.

Department of Parks and Wildlife and Australian Marine Oil Spill Centre (2014) *Western Australian Oiled Wildlife Response Plan*, Perth, WA: Department of Parks and Wildlife. Available at: <https://www.dpaw.wa.gov.au/management/marine/marine-wildlife/marine-wildlife-response?showall=&start=2>

Fowler, A. and Wood, C. (n.d.). *Treating burnt wildlife*. Available at: <http://www.fourthcrossingwildlife.com/TreatingBurntWildlife-Anne%20Fowler.pdf>

Kahn, C.M. and Line, S.(Ed.). (2007). *The Merck/Merial Manual for Pet Health Home Edition*. New Jersey, USA: Merck & Co.

Morgan, K.J. (2008). *Kiwi first aid and veterinary care*. New Zealand: Department of Conservation. Available at: <http://www.doc.govt.nz/upload/documents/science-and-technical/sap245entire.pdf>

NHMRC (2004). *Australian code of practice for the care and use of animals for scientific purposes* (7th ed.). Canberra: National Health and Medical Research Council.

QLD Environmental Protection Agency. (2005). *Carer's Kit*. Available at: http://www.epa.qld.gov.au/nature_conservation/wildlife/caring_for_wildlife/

Shepherd, N.C., Hopwood, O.R. and Dostine, P.L. (1988). Capture myopathy: two techniques for estimating its prevalence and severity in red kangaroos, *Macropus rufus*. *Australian Wildlife Research* 15: 83-90.

St John Ambulance Australia. (1998). *Australian First Aid*. Canberra, ACT: St John Ambulance.

Vogelnest, L. and Woods, R. (2008). *Medicine of Australian Mammals*. Australia: CSIRO Publishing.

Walraven, E. (2004). *Field manual: rescue and rehabilitation of oiled birds*. New South Wales: Zoological Parks Board of New South Wales.

12 Appendix 1

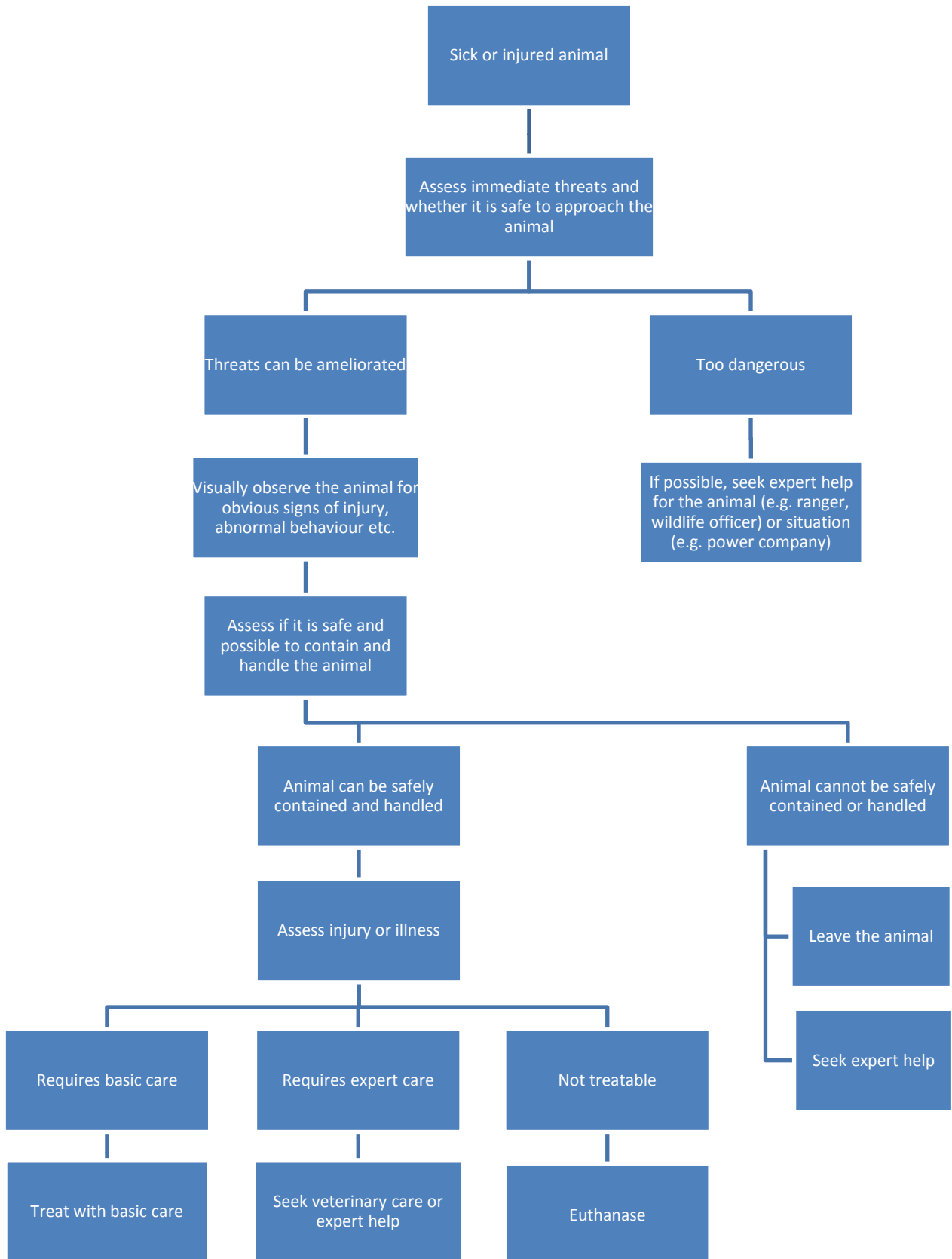


Figure 1 Decision-making process for treating wildlife with first aid.