Wildlife Rescue: Approach to First Aid

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WILDLIFE

Wildlife includes all non domestic animals and is made up of two distinct groups:

1. **Native species** which have evolved in Australia such as bats, rodents, marsupials, monotremes, birds, frogs, reptiles and aquatic species. Of these native species, a significant number have become threatened, endangered or extinct.
2. **Introduced species** which have become part of Australia's fauna through recent times and include herbivorous mammals (rabbits, goats etc), carnivorous mammals (foxes, cats, dogs), omnivorous mammals (pigs, rats, mice), birds (sparrows, feral pigeons, peacocks), amphibians (cane toads) and fish (European carp, brown trout).

Habitats and Ecosystems

A habitat is the home of wildlife. We can categorise habitats into natural habitats (e.g. wetland, rainforest, woodland, heath land, desert, mangroves, coral reefs etc) and man made habitats (e.g. cities, roads, farming districts, industrial developments like mines). However, rather than being two distinct groups, they merge and interact.

Habitats provide wildlife with food and shelter. In return wildlife controls insect pests, pollinates flowers, disperses seeds, prunes foliage and fertilises soil. This symbiosis is a fragile balance of nature. Interference by man can have profound effects at many different levels. Even a simple interaction such as providing artificial diets has the potential to create ill health through poor diet or unnatural increases in populations.

There are a number of ways that mankind has upset the balance of nature:

Habitat destruction
Pollution
Bushfires
Motor vehicle collisions
Collision with windows

Feral animals
Hunting
Electrocution

The key to protecting wildlife is to conserve their natural habitats and within our man made habitats to learn to live with wildlife. There are a number of ways that we can live with wildlife such as planting flora for fauna, providing bird baths and ponds, nesting boxes, undisturbed vegetation, outdoor lights for insects and resisting the use of chemicals.

The Philosophy of Wildlife Rescue

Wildlife rescuers have an appreciation for the effects of humankind on wildlife. The majority of wildlife rescue cases result from human interference.

Some wildlife rescue efforts have involved dealing with naturally occurring disease outbreaks. There is increasing nation wide awareness of the importance in recognising health and naturally occurring diseases in wildlife populations and this is being addressed through the Australian Wildlife Health Network. It relies on people at the community level, veterinarians and government officials to report on significant events affecting wildlife and these can be entered into a national database for analysis and information sharing.

Wildlife rescuers are also in a unique position to aid in the conservation of threatened and endangered wildlife.

WILDLIFE RESCUE

Principles of Wildlife Rescue

- Transport of wildlife needs to be as stress free as possible
- Seek to return the injured wildlife to the exact place where it was found if possible
- Return it as quickly as possible
- It should be in a survivable condition
- It should not become used to human contact
- Leave all but basic treatment to qualified people
- Humanely kill seriously injured animals if possible
- Some animal diseases can be transmitted to humans (care and hygeine)
- One should not assist the survival of introduced species
- Living with wildlife

Wildlife Rescue Kit

- Cardboard Box with airholes, lined with newspaper
- Petpak

- Pillowcase
- Hessian bag
- Torch
- Blankets / Towels
- Net
- Wipes and Tissues
- Wildlife Identification guides
- Substitute pouch (sock / beanie)
- String / elastic bands / rope to secure bags
- Disposable and thick leather gloves
- Scissors & Pliers
- Phone numbers

Wildlife Rescue Approach

Does the animal need rescuing?

- Is it orphaned or not? If it is nestling fallen from a nest after a storm can it be returned to the nest for the parents to continue their care?
- Is it displaying normal behaviour? An example includes a bush stone curlew basking in the sun or slow moving individuals such as freshwater turtles and blue tongue lizards travelling from one area to another.

If you have decided that the animal needs rescuing:

- Remove any threat to the animal (e.g. dogs and cats should be locked up until rescue is complete)
- Safety comes first
    - Is it a dangerous animal such as a venomous snake? These should be left to experienced handlers.
    - Is there significant risk of disease being transmitted to the rescuer from the animal such as Flying Foxes and Lyssavirus? These animals should be rescued by rabies vaccinated wildlife carers who have had experience in rescuing these animals
    - Is the situation potentially dangerous? Heavy traffic and accessibility need to be approached with caution.
    - Assess the situation and have a clear strategy

When travelling the roads, remove any dead carcasses off the road so as to reduce the risk of further injuries to wildlife attracted to the carcass for a feed.

Always check marsupial carcasses for pouch young

Capture & Transport

For most wildlife, human contact, regardless of the intent, is likely to cause stress, and can be fatal in the sick and injured. In order to minimise stress:

- Lightly restrain the animal, provide a warm, quiet, secure and dark environment with access to fresh air.
- Use appropriate equipment
- Strategic approach to animal (avoid sharp teeth, beaks, claws)
- Quickly and efficiently
- Minimise struggling (most animals quieten significantly once head is covered and movement is restricted)

FIRST AID

First Aid Kit

- Sterile Dressings
- Sterile gauze pads
- Cotton wool
- Cotton buds
- Bandages (vetrap and gauze bandages)
- Sterile saline
- Betadine (Povidone Iodine) solution
- Oral rehydration fluids (e.g. Lectade or Vy-trate)
- High energy oral fluids (e.g. Glucodin)
- Thermometer
- Syringes
- Crop needles
- Penlight torch
- Examination gloves
- Towels & Blanket
- Pillow slips
- Socks
- Tweezers
- Scissors
- Pyrethrin spray
- Specimen jars
- Cold packs
- Heat pads, lamps and hot water bottles
- Splint material
- Ambient thermometer
- Digital Scales
- Stethoscope
- Oral electrolyte solution
- Glucose concentrate

Aims of First Aid

1. To preserve life
2. To prevent suffering
3. To prevent situation from deteriorating

Applying good first aid can mean the difference between life and death. The first 24 hours can be critical.

Triage

Triage is the process of prioritising the urgency and level of care required.

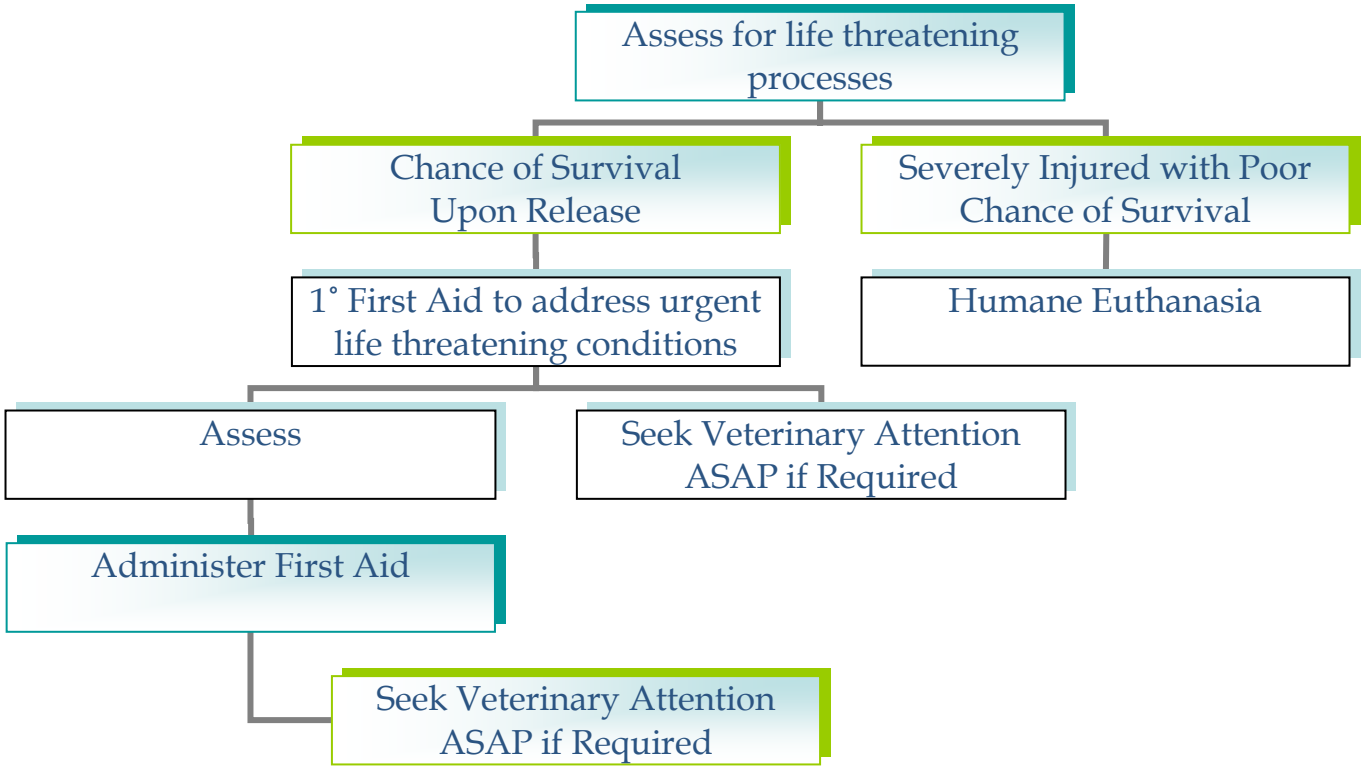

Figure 1: Triage flow chart

The majority of wildlife rescued should not be released just because there are no detectable abnormalities. For them to have been caught is indicative that there is usually a significant problem.

Release and Euthanasia Criteria

- Saving a life for survival in captivity is NOT the goal
- The animal must be capable of:
    - Recognising, obtaining and processing food
    - Recognising or defending against predators
    - Acquiring shelter
    - Acquiring and defending territories
    - Performing normal seasonal movements and dispersal
    - Be capable of normal socialisation with conspecifics
- (Diehl & Stokhaug, 1991)
- Each type of animal has different criteria.

Instances where euthanasia may occur include:

- Compound fractures >48 hours old.
- Complete loss of sight / hearing
- Impaired vision in both eyes (Some species can survive if only one eye is affected)
- Nocturnal owls with hearing impairment
- Amputated wings / legs
- Raptors with impaired function of feet (can't grasp, kill and carry prey)
- Fractures of wing and leg joints
- Fractures with significant piece of bone missing
- Poorly healed wing fractures
- Head trauma resulting in abnormal posture
- Back injuries resulting in loss of limb function
- Animals imprinted on humans
- Animals with a highly incurable infectious disease (e.g. Psittacine beak and feather disease)
- Mammals with two or more nonfunctional legs
- Rodents with fractured jaw or any facial injury leaving permanently unaligned incisors

Occasionally a non-releasable animal can be placed in permanent captivity

- Approved educational facilities
- Approved research facilities
- Approved breeding program

Endangered species – do not euthanase, unless necessary on humane grounds without contacting local authorities first.

First Aid Approach

- Ensure animal can breathe
  - Clear airways and nostrils
  - Don't constrict chest
  - Transport face down & head lower to assist draining
- Prevent heavy bleeding
  - Firm pressure (bandages)
- Maintain body temperature
  - Provide a temperature gradient
  - Monitor ambient temperatures
- Treat for shock
  - Warmth and quiet
  - +/- fluids
- Minimise Stress
  - Leave for a while before further disturbing

Warmth:

- Heat lamp, hot water bottle, heat pad
- Monitor
  - In-out thermometer,
  - signs of being too hot or cold
    - Birds fluff up and appear depressed when trying to conserve heat
    - Panting and appearing distressed with overheating
- Provide a temperature gradient
- Provide humidity with a shallow water bowl near a dry heat source.

Table 1: Air Temperature Guide

Birds	Sick/injured adults	26-27˚C	**Mammals**	Sick/injured adults	28˚C
	Feathered young	30˚C		Furred young	28˚C
	Featherless young	36˚C		Furless young	32˚C
Reptiles	Freshwater turtles	26˚C		Echidnas	25˚C
	Lizards/snakes	30˚C			

Thermoregulation:

- **Echidnas:** Body temperatures increase at ambient temperatures >30˚C and they may die if approach 40˚C. They may enter torpor <10˚C, when food is

scarce and fat reserves are reducing. Torpor can last up to 10 days and spontaneous arousal can take 20 hours for body temperature to return to normal.

- **Juvenile mammals:** thermoregulatory systems are immature; they have relatively large surface areas and little to no insulating fur/subcutaneous fat. Generally shouldn't fast suckling young prior to GA and shouldn't interrupt fluid intake any longer than is necessary.

EXAMINATION

Obvious abnormalities

- Observation prior to handling
- Level of consciousness
- General demeanour and posture
- External injuries / abnormalities
- Defaecation / urination / vomitus

Body weight & condition

Head & Neck

- Injuries
- PLR (pupillary light reflex)
- Bleeding / discharges / lesions in orifices (eyes, ears, nose, mouth)
- Colour of mucous membranes and CRT (capillary refill time)
- Swellings, crepitus, bruising, sc emphysema, pain with palpation
- Responses to sight, sound stimulation

Throat & Thorax

- Injuries and asymmetry
- Respiration (incl. Respiratory Rate)
- Heart Rate
- Pain on palpation
- Body condition

Abdomen

- Injuries
- Pain on palpation
- Expansion of abdomen
- Noticeable swellings on palpation
- Check all female marsupials for pouch young

Extremities & Spine

- Injuries and asymmetry
- Colour and position of extremities
- Palpation for dislocations / fractures of extremities, pelvis and spine
- Temperature

Neurological Examination

- Flaccidity / rigidity of limbs
- Deep pain sensation if suspect paralysis / paresis

FIRST AID PRINCIPLES

Stress

- Two general forms of stress:
    - Immediate stress (eg. HBC)
    - Long term stress (eg. Loss of habitat)
- Helpful to know normal behaviour for the species
- Common general signs of stress:
    - Reduced food intake
    - Reduced activity (listlessness)
    - Weight loss (or in growing animals reduced weight gain & lower body mass plateau)
    - High level of escape behaviour
    - Immunosuppression
    - Stereotypic behaviour

Table 2: Some Species specific Stress Signs

Echidna	Acute stress = > Respiratory rate & depth → 'snuffling' (serous nasal discharge; defensive pose (curl up, limbs withdrawn); defaecation / urination. Chronic stress = <food intake; weight loss; >escape behaviour; stupefaction/inactivity if stress continues long enough.
Macropods	Acute stress = Vocalisation; flinching; escape attempts; thumping ground; body trembling; head shaking; ear flicking; teeth grinding; licking of forearms, shoulders, chest, hindlimbs and flanks; mild-severe myopathy; scratch at abdomen and roll with abdominal pain. Chronic stress = <food intake; weight loss; failure to thrive; bilaterally symmetrical alopeica; diarrhoea; adrenal exhaustion and apparent sudden death.

Possums	Acute stress = Vocalisation; threat & attack; urination/defaecation. Chronic stress = <food intake; weight loss; symmetrical alopecia; immunosuppression → >parasite burdens; exudative dermatitis.
Dasyurids	Acute stress = Vocalisation (hissing); threaten and attack or flee vigorously; defaecation/urination. Chronic stress = >irritability; listlessness and signs of depression; rough fur; alopecia; stereotypic behaviour.
Bandicoots	Acute stress = escape attempts; become immobile when caught Chronic stress = <food intake; weight loss; rough coat; alopecia.

Bleeding

- Apply direct pressure to bleeding wounds for at least 2-3 minutes
- Apply clean bandage to wounds
- Treat animal for shock
- Consult veterinarian

Breathing difficulties

- Observe body movements
    - Laboured breathing (obstructed upper airway, alveolar damage, collapsed lungs, severe blood loss, shock)
    - Rapid shallow breathing (shock, pain)
- Maintain clear airways (vomit/blood/dirt)
- Keep animals head above the level of stomach
- Extend head & neck and tilt mouth & nose downwards slightly to avoid choking on saliva or blood
- Seek veterinary attention

Fractures

- Treat for shock
- Assess fracture
    - Simple or compound
    - Location (affecting joints or near joints carry a poor Px)
    - Motor neuron function distal to fracture
- Stabilisation
    - Vetrap
    - Splints
    - Otherwise especially so for compound fractures (need to be kept clean) – cover area lightly with a clean cloth or gauze bandage (do not apply pressure)
- Seek veterinary attention

Burns

- Burns causing extensive damage to <15% of body have a reasonable prognosis
- Burns to 15-50% body cause severe complications and the prognosis is fair to poor
- Burns involving >50% of body have a very poor prognosis
- Gradually cool burns with cold water / cold compress
- Gently wrap with clean, wet cloth
- Treat for shock and dehydration
- Consult veterinarian
    - Complications can include smoke inhalation and infection

Dehydration

- Dehydration = excessive loss of fluid from the body (ie when >5% of body mass has been lost)
- Can be life threatening, preventing every system in body from functioning properly (food digestion, maintenance of body temperature, perfusion and circulation, toxin excretion)

Table 3: Signs and degree of dehydration

% Dehydration	Skin turgor (seconds)	Clinical Signs
6 %	1-2	Tented skin; slight loss of skin elasticity
8 %	2-3	Eyes slightly depressed; slow CRT; dry tacky mucous membranes
10 %	3-5	Sunken eyes and cere; dry, tented, scaly skin; very slow CRT; wrinkling of foot, cere, eyelid skin; pale oral membranes; dry faeces
12 %	>5	Early signs of hypovolemic shock; easily collapsible peripheral veins

Fluid Therapy:

- DON'T offer fluids or solids until animal is warm and condition is stabilised
- Severely dehydrated animals will need subcutaneous or intravenous fluids
- Aim to give at least 15% of its body weight (ie 15ml for every 100g) in fluid during the first 24 hours
- Orphaned animals should be given oral rehydration fluids before introducing milk substitutes
- Neonates require 2-3 times adult fluid requirements

Hyperthermia / Hypothermia

- Signs of Hyperthermia: rapid panting; hypersalivation, licking of forearms, chest, flanks, hindlegs or dried saliva in same areas; congested mm; tachycardia; diarrhoea; dehydration; oliguria. Severe changes can develop rapidly with renal failure; hypotensive shock; DIC; coma and death.
- Hyperthermia – place in cool environment gradually reducing temperature with water, towels and fans
- Signs of Hypothermia: cold skin, especially on extremities; lethargy; and bradycardia.
- Hypothermia – gradually warm with a constant artificial heat source. Monitor rectal/cloacal temperature.

- Stop once normal body temperature reached and treat for dehydration
- NIL food / water until normal body temperature

Table 4: Rectal / Cloacal Temperatures

Mammals	35-37˚C
Echidnas	28-32˚C deep body temperature falling to ~12 ˚C during torpor. NB: Cloacal temperatures are several degrees lower
Birds	40-42˚C
Reptiles (PBT)* Chelonians Crocodilians (saltwater) Snakes Lizards	 26˚C 33˚C 29-34˚C (species variations) 28-39˚C (species variations)

*PBT = Preferred body temperature. Reptiles should be kept in a narrow range of temperatures (5-6˚C) either side of their PBT to ensure adequate metabolism of food and medication. Higher temperatures will stress the animal.

Oil Contamination

- Oil contamination destroys the water proofing and insulation of feathers
- Be aware of internal damage if oil is swallowed
- Wipe mouth / nose / eyes clean. Flush eyes with sterile saline 0.9%.
- Wrap animal's body with head clear for transport (prevents further ingestion of oil)
- Treat for shock
- Gently wash in mild dishwashing liquid and warm water. Feathers are gently agitated in the water, repeating a number of times with fresh water and detergent until all oil has been removed. Rinse thoroughly
- Keep animal warm while drying. Dab dry with a towel and blow dry or place in the sun.
- It takes several weeks for feathers to regain water proofing and spraying with water or providing water for bathing can help stimulate preening which restores the fine structure to the feathers.
- Seek veterinary attention

Parasites

- Generally not an emergency situation but presence can significantly hinder animal's abilities to recover and can contaminate environment
- External parasites
    - Fleas – pyrethrin spray
    - Ticks – remove with tweezers
    - Maggots – remove with tweezers (cornstarch is useful)
    - Lice and mites –pyrethrin spray
- Faecal specimen for internal parasites

Poisoning

- Signs = vomiting, inco-ordination, convulsions, paralysis, coma, death.
- Treat as for shock
- Seek veterinary attention ASAP

Shock

- Signs can include glassy eyes, fixed stare, unresponsive pupils, rigidity of limbs, pale mm, litlessness, low blood pressure, increased pulse, low body temperature, unresponsive to stimuli
- Provide warmth
- Place in stress free environment
- Once warm offer high energy fluids
    - Offer small lukewarm drinks frequently
    - Glucodin (1tsp with 250ml pre-boiled water)
    - Helps to stabilise, combat dehydration, maintain body temperature and rest the stomach before milk formulas or solids are introduced.
- Veterinary care for oxygen therapy and medications in severe cases.

Wounds

- Mild wounds – best left alone
- Contaminated wounds – wash thoroughly with saline solution (or warm salty water = ½ tsp salt to 250ml water). Can also rinse with dilute betadine (povidone iodine) solution (1%).
- Maggots – apply cornstarch. A dose of Ivermectin should kill remaining maggots and eggs. If infested and invaded body cavities – euthanasia is recommended.
- Puncture wounds will need to be covered with antibiotics (consult veterinarian)
- Some wounds will need suturing or dressing (consult veterinarian)

Concussion

- Place in dark environment
- Check on animal after 2-4 hours to reassess

- May be able to test a bird's ability to fly
- Don't release until after 24 hours to allow for complete recovery.

Emaciation

- Can tell looking at body weight and body condition
- Require slow introduction onto solid foods
- First offer oral rehydration fluids with 2.5% Dextrose
- Provide warmth and stress free environment
- Then start a high calorie liquid diet (e.g. Isocal)
- Probiotics to help re-establish normal healthy gut flora
- Vitamin supplementation may promote appetite
- Once hydrated and passing normal looking stools, introduce solids to diet
- Keep meals small and frequent
- Underlying causes need to be ruled out such as parasites (consult veterinarian)

Stress Free Environment

- Provide dark and cosy housing (a safe retreat)
- House away from:
  - draughts
  - domestic animals
  - Loud and unfamiliar noises (TV or radio)

Record Keeping

Record Keeping is paramount to successful wildlife rescue. A detailed history allows an animal to be returned to its exact original location and keeps track of progress, first aid and medical attention administered. It's a great learning / training tool for improving care (gives an idea of what works and what doesn't).

Refer to Appendix 1 for an example of a record sheet that is used by WILDCARE AUSTRALIA.

Appendix 1: WILDCARE AUSTRALIA Wildlife rescue record sheet

www.wildcare.org.au/forms/wildlife_rescue_examination_record.pdf

WILDCARE AUSTRALIA

WILDLIFE RESCUE EXAMINATION RECORD

Animal ID No.		Date:	
Species:		Time:	
Sex:		Age:	

RESCUE DETAILS

Caller Details: _____

Exact location of rescue: _____

Animal history: _____

_____

_____

INITIAL (DISTANT) ASSESSMENT Weight _____

Demeanour: bright / alert / depressed / moribund / distressed / other _____

General body condition: excellent / good / fair / poor / very poor / emaciated

Coat / feather condition: _____

Breathing: normal / rapid / slow / shallow / laboured / open-mouthed / noisy

Gait / mobility: _____

Obvious injuries: _____

_____

Discharges/exudes/diarrhoea etc _____

Abdomen: normal / distended / sunken / eviscerated / other _____

Lumps, bumps, asymmetry _____

Other findings: _____

_____

Assessment summary or diagnosis _____

Initial prognosis: good / fair / guarded / grave / not determined

Is immediate first aid required ? Yes ☐ No ☐

Is immediate veterinary care required? Yes ☐ No ☐

Is immediate euthanasia required? Yes ☐ No ☐

THOROUGH PHYSICAL ASSESSMENT

Veterinarian assisting? Yes ☐ No ☐

Sedation / anaesthesia used? Yes ☐ No ☐ Drug / Dose _____

Head: Symmetry: Normal / Abnormal _____

Eyes: _____

Ears and Nares _____

Mouth/Teeth/Jaw _____

Other: _____

Limbs: Paws/claws/digits _____

Lameness: _____

Tail: _____

Right fore/wing: _____ Left fore/wing _____

Right hind: _____ Right fore/wing _____

Other: _____

Body: Skin/coat/feathering _____

Body condition _____

Musculoskeletal _____

Abdominal palpation _____

Auscultation heart/lungs _____

Vent/cloaca: _____

Pouch/scrotum _____

Lymph nodes _____

Vital signs: T:_____ HR:_____ RR:_____ MM:_____ CRT:_____ Pulse: _____

SUMMARY OF GENERAL PHYSICAL EXAMINATION FINDINGS:

_____
_____
_____
_____
_____

Diagnosis: _____

Prognosis: _____

Is veterinary assistance required ? Yes ☐ No ☐ Time of vet check _____

Is euthanasia required? Yes ☐ No ☐

Details of euthanasia: Time _____ Method _____

By: _____

Disposal of carcase: _____

DETAILS OF VETERINARY EXAMINATION

_____
_____
_____
_____
_____

Diagnostic aids: radiography ☐ blood ☐ faecal ☐ other _____

Findings: _____

Veterinary diagnosis: _____

Prognosis: _____

Treatment/Management _____

_____
_____
_____

Follow-up required _____

Veterinarian: _____

Time: _____ Date _____

FINAL OUTCOME Time _____ Date _____

_____
_____
_____
_____
_____

Time from call to rescue: _____ Rescue response time

Time from rescue to vet care _____ Veterinary response time

Time from rescue to final outcome _____ Action response time

Animal welfare issues?

_____
_____

Recorder _____

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