POSSUMWOOD WILDLIFE

Where traumatised wildlife can recover in safety

Macropod Fence Injuries: Rescue, assessment, treatment & recovery

Fence injury success

- 98% of all fence injury cases should be brought into care
- A very high percentage of fence injured macropods can have a successful outcome.
  - Smaller macropods have the highest success
- Just because a fence injured animal cannot get up after being freed does not mean it will never do so.
- Completed around 2000 fence injury rescues over 20 years.

In the beginning

- **Pints**

  Our first fence hanger. Inspired us to treat and rehabilitate fence hangers

What will be covered

- **The rescue**
  - Equipment
  - Plan (types of fences, form of entanglement, mother & joey situation
  - The approach.
  - Safety, on-site medication, transportation, hypothermia, hyperthermia
- **Assessment**
  - Stress, exertional rhabdomyolysis, metabolic acidosis
  - Hip Dislocation, pelvic & spinal injuries, fractures, other injuries
  - Wounds and ischemic damage
  - Nerve palsy: Footdrop, knuckling, leg splaying

Treatment

- Fluids & sodium bicarbonate
- Wounds
- Medication – pain relief, antibiotics

Recovery

Physiotherapy, standing practice, exercise, bedding, dressing changes

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Rescue equipment

- Blankets, nets
- Wire cutters/separators
- Stretcher
- Sedation
- Saline, antiseptic cream, non-adherent dressings (NAD), crepe bandage

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Planning the rescue

- Preferably two rescuers
  - Wrap and hold
  - Inject and cut or prise open tight wire
- Assess the situation at a distance and apportion tasks
- Mother/ joey situations
- Types of fences & likely impacts
- Approach cautiously but deliberately
- Safety






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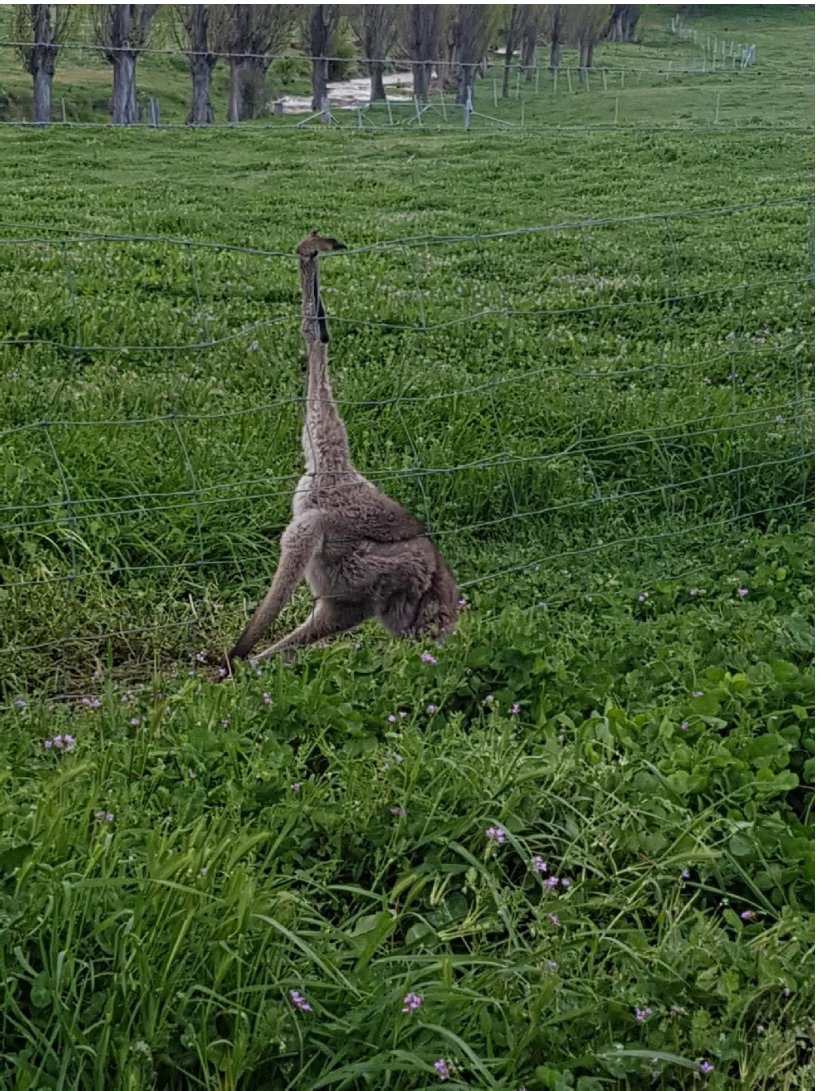
MOPS & fence rescues

Other Fence Entrapments



On-site treatment

- Decide on sedation requirement, if any.
- Treat any significant blood loss from wound (NAD plus crepe bandage).
- Prevent contamination of wounds.
- Flush wounds with saline. Apply antiseptic cream (eg Silvazine) Apply NAD, crepe bandage – not too tight and bandage the foot distal to the wire cut also to prevent swelling .
- Initial treatment for hypothermia or hyperthermia.

Transport to care centre

- Suspect pelvic or spinal injury or other fractures
- Gently roll the animal on to firm stretcher and lay flat in vehicle
- Dress wounds to prevent contamination
- Cover with blanket or sheet to reduce stress.

Key treatment issues

- Stress
- Fluid treatment & acidosis
- Hip dislocation
- Wounds & ischemic damage
- Neurological injury
- Fractures

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Stress

- Initial assessment: Behaviour (facial, anxiety eg scrambling to escape)
- Other observations: Heart rate, Respiration rate, Temperature can also be stress indicators but vary depending on temperature and hydration status.
- Blood pathology (optional)
  - Cortisol –a hormone released into the blood stream by the adrenal gland in times of stress (serum, faecal).
  - Biochemistry (CK, AST, Urea, Potassium)

- Acute stress and treatment. An anxiolytic medication, e.g. Diazepam (dose variable depending on animal condition and need for sedation) and analgesia, e.g. Painstop (10-15mg paracetamol/kg BD, approx 0.5ml/kg, Tramadol (1mg/kg IM BD). Vit E Selenium 0.05ml/kg IM (if available) or Vit E capsules or liquid or VitE Selenium supplets mixed with pellets.
- On-going stress management
  - Polyvagal (housing, with kin, trust)
  - Haloperidol 2mg/kg IM first dose (up to a max first dose of 50mg)

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Typical blood and other pathology of fence entrapment

- Typically high cortisol (stress)
- High CK and AST/ ALT & Potassium, depends on degree of struggle and consequent muscle damage (exertional rhabdomyolysis)
- Typically high Urea due to dehydration – worse in summer
- Observations such as Respiration Rate, Heart Rate, Blood Pressure are variable depending on temperature, dehydration, medication given at rescue

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Treatment

- Early & intensive fluid treatment is required to treat dehydration and help prevent kidney failure - acute due to dehydration or chronic due kidney damage caused by the myoglobin. Use normal saline 0.9%w/v for infusion.
  - Subcutaneous (3% - 4%) depending on dehydration, warm fluids if hypothermic.
  - Intravenous (great care has to be used when giving IV fluids to prevent fluid overload).
  - If lactic acidosis is suspected ie. elevated respiration rate despite temperature being normal and animal relaxed then give sodium bicarbonate sterile solution for injection at a rate of 1 ml per kg SC. It is likely dose will need to be repeated.

- Vit E/ Selenium and Analgesia, discussed earlier
- Wound treatment – discussed later

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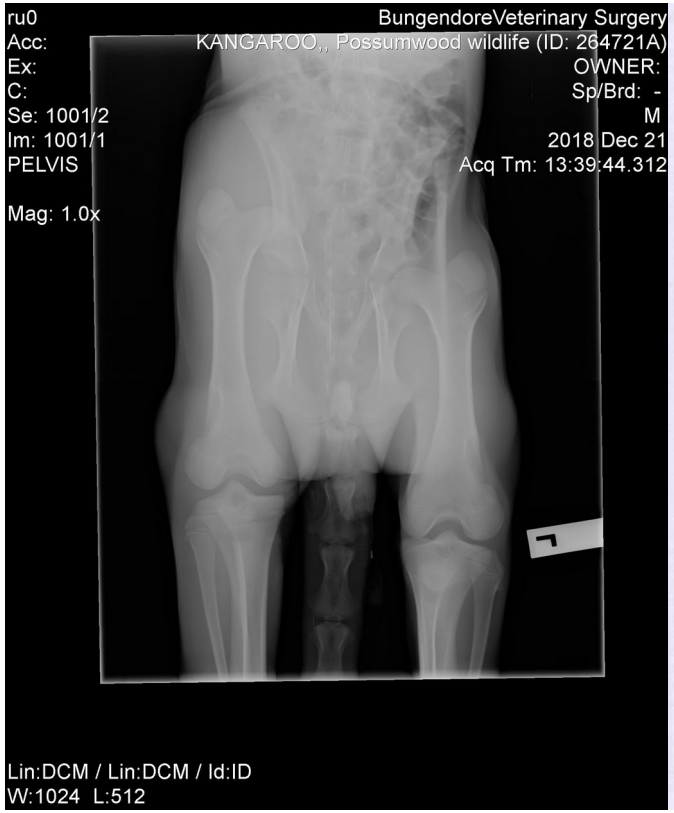
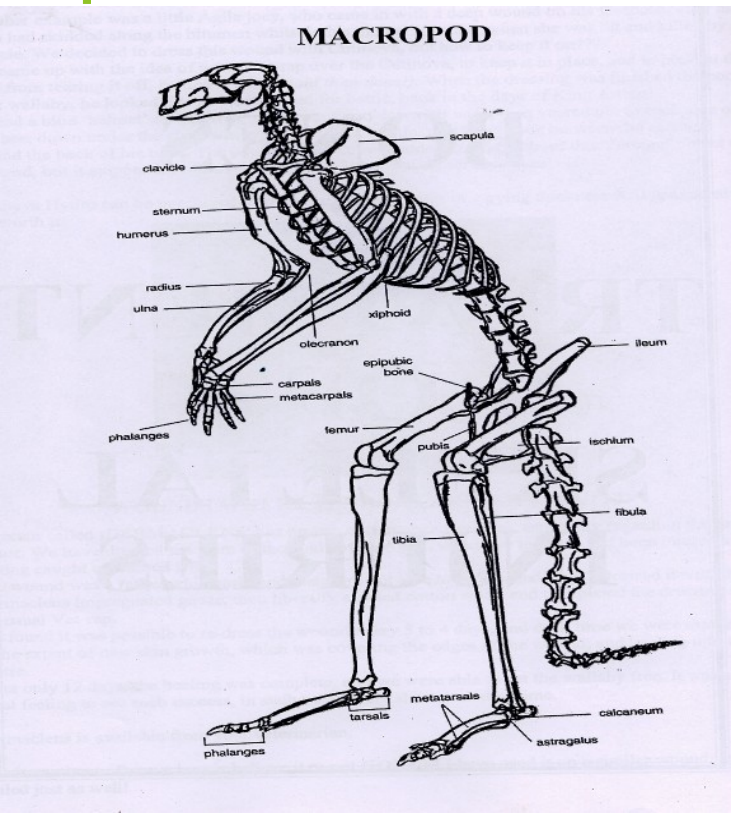
- Ultravac 5 in 1 for Tetanus (1ml SC)
- Piglet Baycox (0.4ml/ kg) in first week of care.
- Ivermectin (1ml/ 10kg pour on).
- VAM or Vit B Complex (helpful for nerve palsy) – discussed later
- Antibiotics (Amoxycillin LA, concentration150mg/ ml, dosage 0.1ml/kg SC, second daily; Oxytetracycline LA, concentration 300mg/ml, dosage 0.1ml/kg IM, every 5 days)

Hip Dislocation





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Hip Dislocation

Normal hip location

Hip dislocation - posterior

Hip Dislocation: Types of treatment

- Non-surgical: Closed manoeuvre.
  To keep it in position, <15kg animals, keep in a bag. Traction & counte
  traction then abduction with external rotation then adduction with interr
  rotation. Traction needs to be maintained during the manoeuvre. Can b
  assisted by upward then downward pressure on greater trochanter

- Surgical procedures.

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Lacerations

- Wounds can vary from a wire mark to extensive and deep soft tissue damage, e.g. barbed wire causes severe lacerations and barbs can puncture the joint capsule.

- Wounds always get worse before they begin to heal. There can be tissue necrosis which can cause an unpleasant odour.

- Suturing is usually not successful because of tissue necrosis at the wound site

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In-situ laceration treatment
(Harry)

Harry – six weeks later

Wound Treatment

- Flush wound well with normal saline (hopefully wound has a dressing from the initial rescue and therefore should not be contaminated.
- Chloramphenicol and Gentamicin compounded gel or either unprocessed or Manuka honey.
- Impregnated gauze (eg jelonet) and NAD.
- Synthetic padding (eg soffban) and vetwrap. Very important to ensure dressing is not too tight. We use rigid sports tape to secure the dressing – prevents contamination of the wound if the dressing comes off.
- Dressing changes twice weekly initially. Once necrotic tissue is removed then once weekly to once fortnightly depending on healing stage

Wound treatment continued

- If wound not healing or animal chewing at wound deeply there could be a piece of necrotic bone preventing healing

April
Deep laceration down to the bone. Necrotic bone preventing healing. Loss of large toenail due to ischemic injury. Also had dislocated hip. Ready for release in Spring.

Ischemic damage

The most common sites to be caught in a wire fence are distal to the ankle joint (foot or toe). The degree of ischemic damage can be mild to severe (see next slide). You can apply some form of external heat to stimulate blood supply to the extremity – especially if the animal is hypothermic and therefore there will be distal vasoconstriction.

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Severe ischemic damage

- Severe ischemic damage distal to the metatarsophalangeal joint is not inconsistent with a good outcome This was Sunny's foot 5 years ago as a joey. Essentially, it autoamputated at the metatarsophalangeal joint, He was seen several weeks ago at the release site and is now a very large, happy and healthy kangaroo.
- At the release site is also Valley who had an amputation at this joint and she has successfully carried joeys

Valley & Joey at release site

Neurological injury: Sciatic nerve palsy

- For knuckling strap in dorsiflexed position
- For footdrop will need a splint to prevent ankle ligament injury

Violet.

Unfortunate consequence of foot drop at rescue

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Neurological damage: Obturator nerve palsy

- Causes difficulty with adduction, ie. bringing leg in towards the body
- Can have mildly abnormal hop
- Often misinterpreted as a dislocated hip
- Vit B Complex can help a nerve palsy (can take up to 6 months to settle)

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Fractures & other injuries associated with wire entrapment

- Metatarsal fractures are common
- Ligament damage - ankle & knee
- The initial hard ground hit and thrashing can cause a foreleg fracture, broken teeth, concussion and spinal injury

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Lizzie.
Four kg when rescued in 2004. Dislocated hip. The foot deformity developed after release likely due to a growth plate injury. A foot deformity is not inconsistent with a long happy life at a safe release site

Recovery: Bedding

- Bedding & pressure sores. The ability to roll over is variable. Some fence hangers cannot roll over when first rescued. These animals are at risk of pressure sores. Roll and provide dry bedding twice daily. Bedding can vary from lounges as shown in the photos to a mattress or straw.

- Can cut an oval foam piece with a hole in the middle like a tyre tube to reduce pressure effect.

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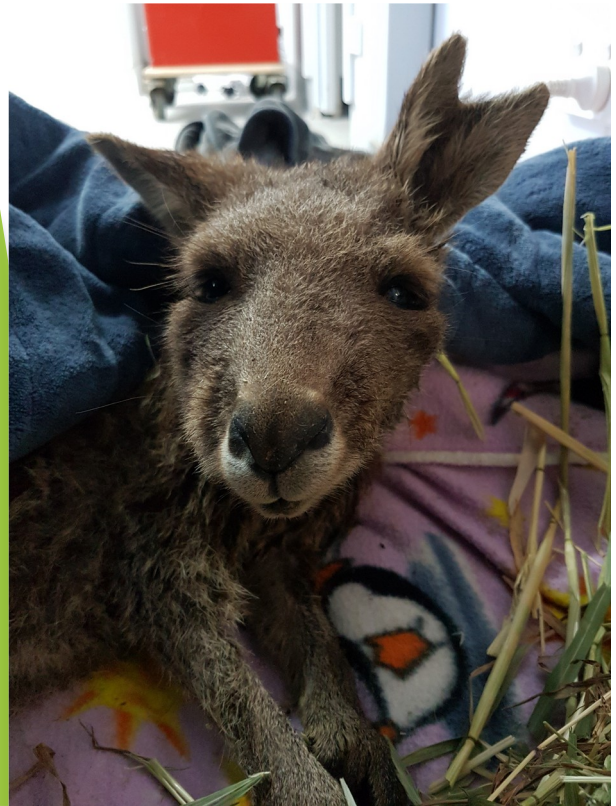
Recovery: Physio

- Flexing and extending leg at hip and knee joint when animal is lying down.
- Standing practice. Animals recover more quickly when they are cooperative and will stand still without trying to hop. Repetition.
- Next movements gained are hopping, then getting up from a lying position, and lastly punting.

Ghia

Other fence injuries

- Loose wire eg. old fencing wire left on ground, electric fencing tape, MOPS cutting wire either side of trapped leg.
- Jumping fences awkwardly can cause lower back and pelvic injuries
- Running into a fence can cause cervical spine injury.



Andy

Didi

Digby