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# Advanced Macropod Course 2019

Stress Myopathy, Lactic Acidosis & Renal Failure; Fence Injuries;  
**Crystalluria**; Herpes Virus

" Where is the knowledge we have lost in information? Where is the wisdom we have lost in knowledge? " —T.S. Eliot.

# Welcome

- ▶ Welcome to Country: We recognise the Yuin people as the traditional owners of this land we are on today and we respect their elders past, present, and into the future for managing the land and its animals for thousands of years.
- ▶ Welcome to the historic town of Braidwood.
- ▶ We thank the Native Animal Rescue Group (NARG) for hosting this course for us today.

# Program

10.00. Welcome

▶ 10.15. *The emotional lives of animals*

▶ 10.30.

▶ *myopathy & lactic acidosis*

▶ 11.15

▶ 11.30

▶ *failure*

▶ 12.00.

▶ *Crystalluria*

▶ 12.30.

▶ 1. 00.

▶ *injuries*

2.15.

*Stress*

*Break  
Renal*

*Lunch  
Fence*



# Views of Possumwood: Enclosures







## Inside the Possumwood Centre

# Treatment room





# Pre-release enclosure



- ▶ 9 acres of grassy woodland opening on to 1800 acres of private wildlife sanctuary.

# Who we are

- ▶ **Self-funded charity with 70 members**
- ▶ **Lake George escarpment on southern tablelands**
- ▶ **A treatment & recovery facility for native mammals**
- ▶ **Three recovery enclosures**



# What we do

- ▶ Rescue native mammals, all ages and sizes, from stressful situations
- ▶ Treat difficult injuries and illnesses:
  - ▶ 1/3 fence hangers; 1/3 MVA; 1/3 dog/ fox attack, human harassment & misadventure
- ▶ Manage their recovery
- ▶ Release them into safe habitat
- ▶ Undertake and publish research to enhance wildlife wellbeing
- ▶ Training courses in wildlife rehabilitation

# Our values

- ▶ **Human exceptionalism has no place**
- ▶ **Do no harm**
- ▶ **Love & respect them**
- ▶ **A 'being-for' relationship ('teacher/ teacher')**
- ▶ **Wildlife knowledge systems**
- ▶ **Tran-species learning through engagement**



# The emotional lives of kangaroos

- ▶ *Emotions are not spontaneous upwellings of arbitrary feelings. They are reactions to events. So if we can correlate emotional reactions with the events that trigger them, we can use these reactions as sources of information to help in recovery.*
- ▶ **Emotional life of an animal is just as important for recovery as the physical life.**
  - ▶ The veterinarian can't help you with that. It's your job to engage with it.

# Trans-species psychology

- ▶ Humans and other animals share a common capacity to think, feel and experience situations.
- ▶ Animals experience complex emotions and are psychologically susceptible to stress as are humans.



# Emotional Behaviour

- ▶ Six neural markers identified for kangaroos (joy, separation, anger, relaxation, nurturance, sexuality)
- ▶ Two emotional behaviour situations:
  - ▶ Opportunity seeking & capability realisation in a reinforcing environment
  - ▶ Fear-induced escaping from a restrictive environment. Failure to escape may give rise to PTSD and psychological extinction

# Emotional Behaviour Markers in the Kangaroo

Neural states	Outward indicators (kangaroo)
Joy (play)	Hooning, kicking legs into the air, boxing with kin, chasing kin, eye expression.
Separation, distress (panic)	Vocal, running into objects in panic, eye expression, erect posture, licking forearms, rapid respiratory rate, flared nostrils.
Nurturance (care)	Preening, embracing kin, body contact, protective behaviour by dominant males
Sexuality (lust)	Courtship behaviour, pairing, long-term male/female friendships
Anger (rage)	Vocal, eye expression, posture
Relaxation	Lying on back asleep, mothers relaxing pouch muscle, mothers allowing small infants to exercise outside pouch



# Measuring emotional stress in the wild

- ▶ **Observation**
- ▶ **Cortisol**
- ▶ **Microbiome**

# Stress & PTSD

- ▶ Brain processing of a fear- inducing trauma results in dysfunctional emotional and physical behaviour (aggression, anxiety, self-harm, non-engagement)
- ▶ Inability to distinguish current circumstance with past trauma event.
- ▶ Assessment tools
  - ▶ *Diagnostic & Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-V-TR).*
  - ▶ *WHO Management of Mental Disorders Treatment Protocol*

# Emotional stress and its treatment in a wild animal

- ▶ Acute and chronic stress
- ▶ Tests: neurological behaviour markers, biochemical (cortisol tests using blood, saliva, faecal), microbiome.
- ▶ PTSD Evidence (DSM V, WHO), eg wild fires, separation anxiety. (Bradshaw, Garlick & Austen)
- ▶ Treatment to address underlying symptoms of stress: environment context (safe & supportive, kin), medication (anxiolytic eg Diazepam and/ or antipsychotic, eg Haloperidol), 'being for' (Bauman) engagement (love & understanding)



Sparkles – burns victim 2017 Carwo fire. Treated and rehabilitated at Possumwood.



# Fight or Flight Response

