

# Disease prevalence and public health risks of wild dogs in peri-urban areas of Queensland



Lana Harriott (PhD student –UQ)

Rowland Cobbold (Public health – UQ)

Matthew Gentle (Biosecurity QLD)

Rebecca Traub (Parasitology – UQ)

Ricardo Soares Magalhaes (Epidemiology – UQ)

---

# General aims

---

- To determine the prevalence of significant public health and economically important diseases of peri-urban wild dogs
- To determine the risk factors associated with these diseases
- Ascertain the level of public health impacts posed from these diseases
- Determine the implications for disease and wild dog management.

---

# Which diseases should we look for?

---

- Significant zoonoses (People and/or livestock)
- Ability to survive in the environment
  - Ectoparasites
  - Endoparasites
  - Bacterial pathogens
  - Vector borne diseases
  - Viruses

---

# Pathogens

---

## Endoparasites

*Echinococcus granulosus*

Hookworms

*Neospora caninum*

*Sarcocystis* spp

*Spirometra erinacei*

*Strongyloides sterocoralis*

*Taenia* spp

*Toxocara canis*

*Trichinella* spp

## Bacterial pathogens

*Brucella suis*

*Campylobacter* spp

*Coxiella burnetii*

*Francisella tularensis*

MRSA

*Mycobacterium* spp

*Salmonella* spp

## Viruses

Hendra

ABLV

## CVBD's

Rickettsia

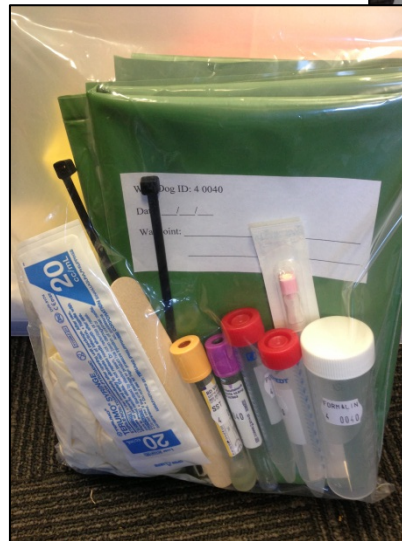
## Ectoparasites

Pathogen	Route of infection	Disease
<i>Brucella suis</i>	Contact with bodily fluids, consumption of infected meat/milk.	sweating, joint & muscle pain
<i>Campylobacter</i> spp.	Food borne ( <i>C. jejuni</i> ) Environment ( <i>C. Upsaliensis</i> )	Diarrhoea, abdominal pain
<i>Coxiella burnetii</i>	inhalation of excreta of infected animals	Fever, sweating, chills fatigue, weakness, endocarditis, hepatitis
<i>Francisella tularensis</i>	Vector borne, consumption of undercooked meat, contaminated water, animal scratch/bite	Chills & fever, joint and muscle pain, cephalalgia, vomiting, necrotic ulceration of lesion site.
MRSA	direct contact, contaminated surfaces, environment	Rash, varying severity of ulceration of skin, pneumonia,
<i>Mycobacterium</i> spp.	Water, soil, dust	high variation - pulmonary disease, lymphadenitis, soft tissue lesions
<i>Salmonella enterica</i>	Food borne	Diarrhoea, abdominal pain, fever, nausea, vomiting

Pathogen	Route of infection	Definitive host	Intermediate hosts	Disease
Hookworms	Faecal-oral (humans) Transmammary/skin penetration (Dogs)	Canids and felids	Humans	Anaemia ( <i>A. ceylanicum</i> ) Cutaneous larva migrans (hypersensitivity) - ( <i>A. braziliense</i> ) Eosinophilic enteritis ( <i>A. caninum</i> )
<i>Echinococcus granulosus</i>	Faecal-oral	Canids	Mammals	Hydatid disease – cyst development, impaired organ function, fatal if undetected
<i>Taenia</i> spp.	Faecal-oral	Canines and felids	Mammals	Sheep measles – cyst development, condemnation at abattoir
<i>Spirometra erinacei</i>	Drinking infected water, consumption of infected meat	Canids and felids	Humans, pigs	Pruritic subcutaneous nodules
<i>Strongyloides stercoralis</i>	Larvae free living - Penetration of skin	Canids	Humans	Diarrhoea, abdominal pains, Cutaneous larva migrans – fast growing lesions
<i>Toxocara canis</i>	Faecal-oral	Canids and felids	Humans	Visceral larva migrans – multiple worms, fever, abdominal pain Ocular larva migrans – single infective worm, blindness
<i>Trichinella</i> spp.	Consumption of infected meat (pork)	Canids, humans	Humans, pigs, rats	Fever, muscle pain, weakness, general discomfort, oedema
<i>Neospora caninum</i>	Faecal-oral	Canids	Cattle	Neosporosis – abortions in cattle. Can cause severe central nervous system disease in dogs
<i>Sarcocystis</i> spp.	Ingestion of contaminated meat, faecal-oral	Canids and Felids	Cattle	lowered production, abortion, carcass condemnation

# Sample collection process

- 250 dogs (+ foxes trapped as a bi-product of wild dog trapping)
- Field collection
  - Blood
  - Faeces



# Sample collection process

- Necropsy
  - Nose swab
  - Diaphragm
  - Tongue
  - Mucosal scrape

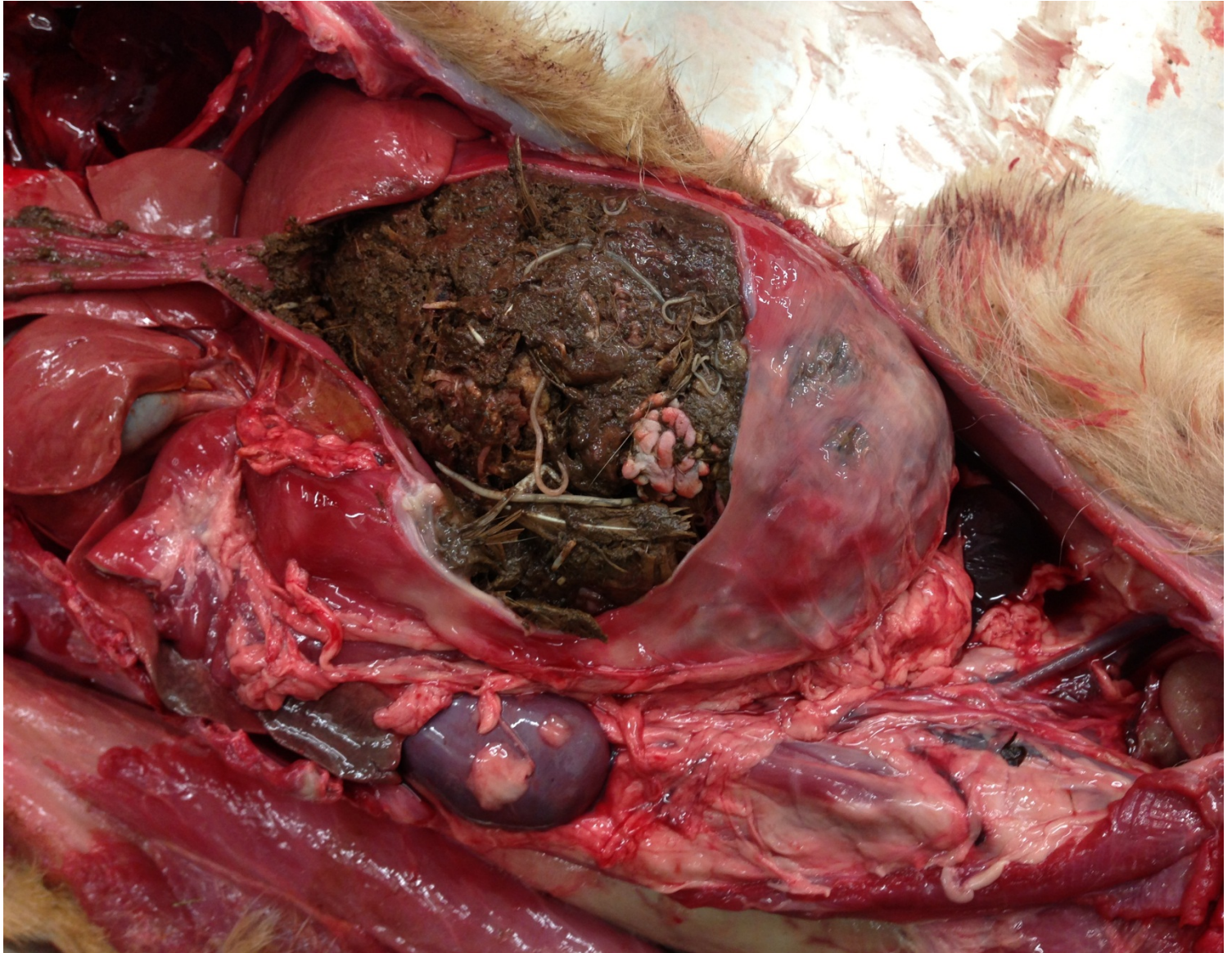












---

# Microbiology and molecular analyses

---

- Faeces
  - Faecal floats, microscopy
  - PCR
  - Culture
  
- Blood
  - PCR
  - ELISA
  - Rose Bengal

---

# Where to from here?

---

- Start collecting samples – trapper packs ready to go
- Gather GIS data
- Future aspects of study depend on initial findings

# Disease prevalence and public health risks of wild dogs in peri-urban areas of Queensland



Lana Harriott

PhD student, School of Veterinary Science, UQ Gatton

Mobile: 0420 599 898

Email: [l.harriott@uq.edu.au](mailto:l.harriott@uq.edu.au)