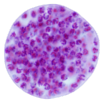
Toxoplasmosis in Wildlife: A Practical Guide for Carers 

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What is Toxoplasmosis?

Toxoplasmosis is a disease caused by the microscopic protozoan parasite *Toxoplasma gondii*. This parasite can infect nearly all warm-blooded vertebrates—humans, wildlife, birds, and domestic or farm animals—who then become intermediate hosts.The parasite can only reproduce by forming oocysts (eggs) in the digestive system of both domestic and feral cats - the definitive hosts. Cats are the only animals that shed the infectious oocysts in their faeces, making them the main source of environmental contamination. In addition to oocysts, two other infective forms are tachyzoites and bradyzoites (tissue cysts). After a cat becomes infected, usually by ingesting tissue cysts from infected prey, it can shed in it's faeces hundreds of millions of oocysts over several days to weeks. Cats typically show no signs of infection. Other animals, including marsupials, birds, and humans, can become infected by ingesting oocysts from contaminated soil, water, plants, or food, or tissue cysts from infected animals. This widespread environmental contamination poses a significant threat to wildlife health.

Where is Toxoplasmosis Found?

Toxoplasmosis is globally distributed wherever cats are present, including urban, rural, and wild areas across Australia. Tasmania has one of the highest recorded rates of *T. gondii* infection, with a 2014 CSIRO study finding over 84% of stray and feral cats carrying the parasite. To reduce the risk to wildlife (it is a significant cause of death in marsupials), it is essential to keep pet cats indoors, especially at night, support feral cat control programs, and avoid releasing wildlife in areas with high cat presence.

It has been detected in:

- Free-living herbivorous, omnivorous, and carnivorous marsupials
- Captive wildlife
- Domestic animals including sheep, goats, pigs, and deer

How Long Does Toxoplasmosis Last in the Environment?

Oocysts are highly resistant and can survive in soil and water for up to 18 months. Sunlight, high heat, and dry conditions reduce their survival. Contaminated areas remain risky for a long time, especially if cats are present.

How Toxoplasmosis Spreads

Wildlife can become infected by:

- Eating contaminated soil, water, or vegetation - oocysts
- Eating infected prey (like birds or rodents) - tissue cysts
- Infected mothers passing it to young in utero
- Consuming infected invertebrates – Omnivorous and insectivorous marsupials may ingest oocysts via earthworms, coprophagic insects, or other soil arthropods.

> "Experimental studies showed eastern barred bandicoots died from toxoplasmosis within two weeks after eating infected earthworms."
> — Taggart et al. (2019), Donahoe et al. (2015)

How Common is Toxoplasmosis in Wildlife?

- **Tasmania**: Up to 80% of wild macropods may have been exposed.
- **Australia-wide**: Bandicoots, wombats, possums, and other marsupials are highly vulnerable.
- Infection rates depend on cat density and environmental contamination. The level of toxoplasmosis in feral and stray cats in Tasmania is some of the highest in Australia and worldwide (Fancourt and Jackson 2014)

> "Some animals show no symptoms despite exposure, while others develop fatal disease." — Dubey (2010), WHA (2023)

Symptoms – What to Watch For

Symptoms vary between species, but common signs include:

- Neurological issues: Head tilt, circling, tremors, seizures, loss of coordination
- Weakness or collapse

- Breathing problems or nasal discharge
- Eye inflammation or blindness
- Being unusually easy to catch or lethargic

Fever is not typically observed. Sadly, many animals decline rapidly once symptoms appear.

Human Health Risks

Toxoplasmosis is zoonotic, meaning it can spread to humans.

People who have not previously been exposed to toxoplasmosis — especially those with weakened immune systems — can be at risk of infection. The most common way humans become infected is by accidentally ingesting oocysts from contaminated cat faeces (eg through gardening, cleaning litter trays, or touching soil). Once you have been infected with toxoplasma, you will have antibodies in your blood for the rest of your life.

Other, less common pathways:

- Eating undercooked or contaminated meat containing tissue cysts
- Handling infected animal carcasses (a potential risk for wildlife carers) - tissue cysts
- Accidental contact with infected material through cuts, broken skin, or mucous membranes (e.g., eyes or mouth)

While most healthy people show no symptoms or experience only mild flu-like illness, it can cause serious complications during pregnancy or in immunocompromised individuals.

Prevention and Control

Reducing exposure is the only effective strategy:

- Regularly clean feeding and watering stations.
- Prevent access by cats to enclosures.
- Limit wildlife access to potentially contaminated open grazing or high-cat-activity areas.
- Avoid releasing wildlife in high-risk areas.
- Support stray and feral cat management.
- Provide extra monitoring for orphaned juveniles transitioning to solid food.

Personal Protective Equipment (PPE)

Always use PPE when handling sick wildlife or cleaning enclosures, especially when toxoplasmosis is suspected.

- **Disposable gloves** – Never handle animals or waste without them.
- **Face mask** – Protect yourself from airborne dust and particles during cleaning.
- **Protective apron or gown** – Use washable or disposable coverings.
- **Eye protection** – Optional, but helpful in dusty areas.
- **Handwashing** – Wash thoroughly after handling animals or cleaning.

Cleaning Enclosures After Suspected Cases

Proper cleaning is essential to prevent further spread:

1. Remove all bedding and waste material.
2. Disinfect all surfaces:
    - Hot water or steam (60°C+)
    - 10% ammonia solution (leave for 10+ minutes)
    - 1:10 bleach solution (also needs 10+ minutes)
    - 1:100 F10 solution (also needs 10+ minutes)
3. Dry and sun-expose cleaned areas — UV light helps destroy oocysts.
4. Replace bedding with fresh materials.
5. Do not reuse soil or organic matter from contaminated enclosures.

Can Toxoplasmosis Be Cured?

- There is no universally effective treatment for wildlife. Treating clinically affected animals is not recommended and is generally unsuccessful.
- In confirmed outbreaks in captive or endangered species, a veterinarian may prescribe prophylactic anti-coccidial medications to reduce losses in exposed, asymptomatic individuals.
- Supportive care may help mildly affected animals, but euthanasia is often the most humane outcome.
- A vaccine is not currently available for marsupials.

“There is no universally effective treatment for toxoplasmosis in wildlife.” — Wildlife Health Australia (2023)

Who Should You Report Cases To in Tasmania?

- If you suspect a wild animal may be suffering from toxoplasmosis, please contact Bonorong Wildlife Rescue on 0447 264 625 for urgent advice and support.

Education & Advocacy

- Raise awareness about how toxoplasmosis harms native species.
- Support efforts for cat containment legislation and feral cat management.
- Advocate for research and monitoring.

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