WILDLIFE NETWORK TASMANIA

Sarcoptic Mange Disease: Identification, Treatment & Community Guidance 

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Overview & History

Sarcoptic mange is a debilitating skin disease caused by Sarcoptes scabiei, a microscopic burrowing mite that lives in the skin of mammals. More than 100 species of mammals worldwide are affected, including dogs, wallabies, livestock and humans. In humans, the same pathogen is known as scabies; in wildlife and domestic species, it is referred to as mange. Evidence suggests mange was introduced to Australia (including Tasmania) around 200 years ago through European settlement and the introduction of domestic animals. While mange has been recorded in many Australian species, here in Tasmania our bare nosed wombats (*Vombatus ursinus*) are by far the most severely affected due to their burrowing ecology. Wallabies, for instance, may develop mange but are less susceptible because they do not use burrows. Tasmanian devils appear to be largely unaffected by sarcoptic mange, but evidence suggests it is possible.

Mange primarily affects wombats due to their burrowing behaviour: cool, humid burrows provide ideal conditions for mite survival, and burrow sharing allows ongoing reinfection. Mites can live off-host for up to 3 weeks, creating an environmental reservoir that fuels outbreaks. The disease causes intense irritation, hair loss, crusting of the skin, impaired senses and severe metabolic strain. Without intervention, mange progressively compromises the wombat's ability to thermoregulate, forage, and fight infection, resulting in a slow and painful death. Without treatment, mange is fatal in wombats.

Cause and Transmission

The mite responsible for mange burrows deep into the skin, feeding and laying eggs within the outer layers. This triggers intense itching and inflammation, leading to progressive thickening of the skin and the development of heavy, crusted lesions. Because wombats use multiple burrows and often share these burrow systems with other individuals over time, they are continually exposed to mites in the environment, creating a highly efficient cycle of reinfection. In addition to burrow sharing, mange can spread through direct contact between animals, indirect contact with contaminated soil or bedding, and occasionally via other mammals that enter infected burrows.

Clinical Signs & Progression

In the early stages of infection, wombats may show little more than increased scratching and subtle hair thinning, often around the face, flanks and belly. As the disease progresses, patchy hair loss becomes more evident and the skin thickens and forms widespread crusts. Secondary infections and open fissures are common, and crusts around the eyes and ears eventually impair vision and hearing. For wombats in care vets can confirm mange through skin scrapings, but in the field the diagnosis is almost always based on visual assessment and the characteristic pattern of lesions.

By the advanced stages, wombats are often emaciated, dehydrated and weak. They are likely to have deep, foul smelling infected fissures over their body. Their senses are dulled, and their energy reserves are critically depleted. Sick wombats frequently wander during the day and appear unusually approachable. Without treatment, death typically occurs within two to three months of infection due to starvation, dehydration or overwhelming secondary infection.

Not all skin changes in wombats are due to mange. Fighting wounds, particularly to the rump and shoulders, can cause localised hair loss and scabbing, and fungal infections occasionally produce patches of missing fur. Digging abrasions or scratches from vegetation may also mimic early mange. True mange typically begins on the belly and limbs and spreads upward, producing symmetrical hair loss, thickening, and crusting that gradually involves the eyes and ears.

Recent research by the University of Tasmania has provided important new insights into the systemic effects of mange. Hair loss and skin damage result in significant heat loss, forcing wombats to elevate their metabolic rate in an attempt to maintain body temperature. At the same time, mange changes the composition of their fat stores, reducing their ability to store and utilise energy effectively. Although mange-affected wombats spend more time above ground, they actually forage less because much of their time is spent scratching, resting or conserving energy.

Treatment Options

Effective management of sarcoptic mange requires a combination of appropriate acaricide therapy (approved products that kill mites), lawful application methods, and careful consideration of reinfection risks. There is no one-size-fits-all approach, and all treatments must comply with current APVMA (Australian Pesticides and Veterinary Medicines Authority) approvals and any permit requirements from NRE Tasmania. The choice of treatment depends on the severity of mange, the individual wombat's condition, accessibility, and the resources available to the rehabilitator.

Fluralaner (Bravecto®)

Fluralaner is an APVMA-approved spot-on acaricide for wombats and is often the most practical and effective treatment for individual animals. It is applied topically along the midline using a pipette—most commonly via a *pole-and-scoop* method that avoids chasing or handling the wombat. When administered correctly by trained and

authorised persons, Bravecto is rapidly absorbed and often produces visible improvement within weeks.

The typical Bravecto dosing schedule is:

- **Dose 1:** Day 0
- **Dose 2:** 4–6 weeks after the first
- **Dose 3** (if required)**:** a further 4–6 weeks later for severe cases

Depending on the delivery method and the location of treatment, an NRE Tasmania permit may also be required.

Moxidectin (Cydectin®)

Moxidectin has been used extensively in Tasmania to treat mange in free-living wombats. Because it is a topical pour-on, it requires repeated applications over many weeks and is less easily absorbed through thick crusts. This means that treatment must be consistent, prolonged and carefully monitored—particularly in advanced cases.

A typical moxidectin program involves:

- Application every 7–14 days, based on product type and veterinary guidance
- Treatment continued for 8–12 weeks or longer
- Delivery via burrow flaps, pole syringes, or, in rare cases, direct handling when safe, lawful and authorised

As with Bravecto, moxidectin use must comply with APVMA requirements, and certain methods may require NRE Tasmania approval.

Ivermectin

Injectable or oral ivermectin is rarely suitable for wild wombats. It requires capture and restraint—an extremely stressful and often harmful process for sick animals. For this reason, ivermectin is reserved for controlled settings under direct veterinary supervision and is not recommended as a routine field treatment.

Supportive Care

Some wombats require short periods of managed care while undergoing treatment. Supportive care is not a substitute for acaricide therapy, but it can improve comfort and stabilise animals that are still capable of recovery. Care must be provided in low-stress, appropriate facilities, with release back to the home range as soon as the animal is stable.

Supportive care may include:

- Hydration (oral or subcutaneous under veterinary direction)
- Cetrigen spray - wound treatment
- High-quality, high-energy diet
- Vet-prescribed pain relief
- Antibiotics for secondary infections
- Warm, dry housing with minimal handling

Cetrigen is commonly used alongside chemical treatment for wound management. Its key benefits:

- Antiseptic
- Antibacterial
- Repels insects
- Supports wound healing
- Helps control flystrike
- Contains purple dye to show where it has been applied

Supportive care does **not** replace acaricide treatment, but it improves comfort, stabilises compromised animals, and supports recovery.

Field Application Methods

Successful field treatment requires planning, consistency and accurate monitoring. Burrow flaps are the most scalable method for population-level treatment, delivering repeated doses as wombats enter and exit their burrows. However, burrow systems are often complex, and flap programs require mapping of active burrows, the use of motion-sensor cameras where possible, and regular replenishment of treatment.

For individuals that can be approached safely, pole-and-scoop application is an effective and humane way to deliver Bravecto without restraining the animal. Both flap-based and pole-based methods require appropriate authorisation and must follow chemical-use guidelines.

Reinfection and Resistance

Reinfection is a major challenge in mange management. Mites can persist in burrows for weeks, and untreated wombats will continue to spread the disease. Even animals that initially respond well to treatment may become reinfected if neighbouring wombats are not also treated or if burrow systems remain contaminated.

A further risk is acaricide resistance, which can arise from long-term, inconsistent or incorrect use of treatments. Under-dosing, irregular dosing, or prolonged treatment outside approved schedules may reduce treatment effectiveness over time. For this reason, all mange treatment programs should be clearly planned, time-bound, properly authorised, and carefully documented, with a clear endpoint and ongoing monitoring to ensure humane outcomes.

Human Safety & Biosecurity

Sarcoptic mange is a zoonotic disease. While human infestation is usually temporary and self-limiting, symptoms can include itchiness and rash.

Precautions:

- Wear gloves when handling animals, bedding, or contaminated materials.
- Wash hands thoroughly.
- Launder clothes separately in hot water.
- Disinfect equipment and boots.

Fomites (towels, traps, crates) must be cleaned between animals to prevent spread.

Community Involvement

Early detection and reporting by the public significantly improve welfare outcomes. Members of the community should be encouraged to photograph suspected cases, note precise locations, and contact wildlife organisations rather than attempt treatment themselves. Community groups such as Wombat Rescue Tasmania demonstrate the value of consistent burrow-flap programs and grassroots reporting networks in improving outcomes for wild wombats.

Summary

Mange is a profoundly painful and debilitating disease for individual wombats. Although many can recover with early detection and consistent, well-planned treatment, not all animals are saveable. Wombats that are severely emaciated, blind, heavily fly-struck, or severely compromised often have little realistic chance of full recovery, even with intensive intervention. In these cases, euthanasia performed by a veterinarian or authorised person *(under the Nature Conservation Act 2002 and the Animal Welfare Act 1993)* may be the most humane and ethical outcome, preventing further suffering.

Effective mange management must always place welfare first. Treatment decisions should be lawful, targeted and grounded in sound assessment, recognising both the possibilities and the limitations of rehabilitation. While mange is firmly established in Tasmanian wildlife and cannot be eradicated, collaborative efforts—combining the work of rehabilitators, researchers, community volunteers and government agencies (Parks and Wildlife Service & NRE Tasmania)—continue to improve treatment methods, expand our understanding of the disease, and enhance outcomes for the wombats that can be saved.

Resources/References

- https://nre.tas.gov.au/wildlife-management/fauna-of-tasmania/mammals/possums-kangaroos-and-wombats/wombat/wombat-mange/wombat-mange-faqs
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