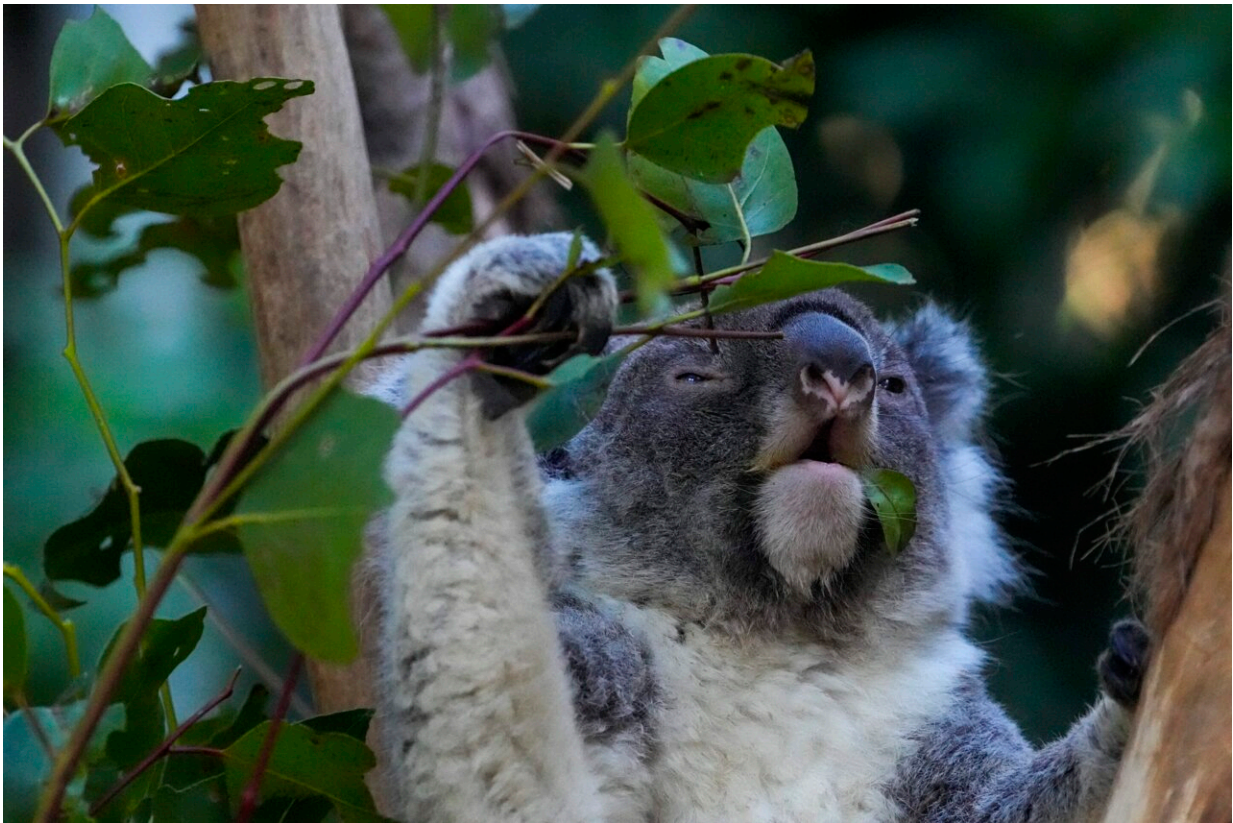


# First wild koalas caught and vaccinated against chlamydia

May 9 2023, by Christina Larson

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A koala eats gum leaves at a koala park in Sydney, Australia, Friday, May 5, 2023. Australian scientists have begun vaccinating wild koalas against chlamydia in a pioneering field trial in New South Wales. The aim is to test a method for protecting the beloved marsupials against a widespread disease that causes blindness, infertility and death. Credit: AP Photo/Mark Baker

Australian scientists have begun vaccinating wild koalas against chlamydia in an ambitious field trial in New South Wales.

The aim is to test a method for protecting the beloved marsupials against a widespread disease that causes blindness, infertility and death.

"It's killing koalas because they become so sick they can't climb trees to get food, or escape predators, and females can become infertile," said Samuel Phillips, a microbiologist at the University of the Sunshine Coast who helped to develop the vaccine.

The scientists' initial goal is to catch, vaccinate and monitor around half of the [koala population](#) in the Northern Rivers region of New South Wales—that means vaccinating around 50 animals.

The safety and effectiveness of the [single-shot vaccine](#), which has been designed specifically for koalas, has previously been tested by vaccinating a few hundred koalas brought to wildlife rescue centers for other afflictions.

Now scientists want to understand the impact of vaccinating a population of wild koalas. "We want to evaluate what percentage of the koalas we need to vaccinate to meaningfully reduce infection and disease," said Phillips.



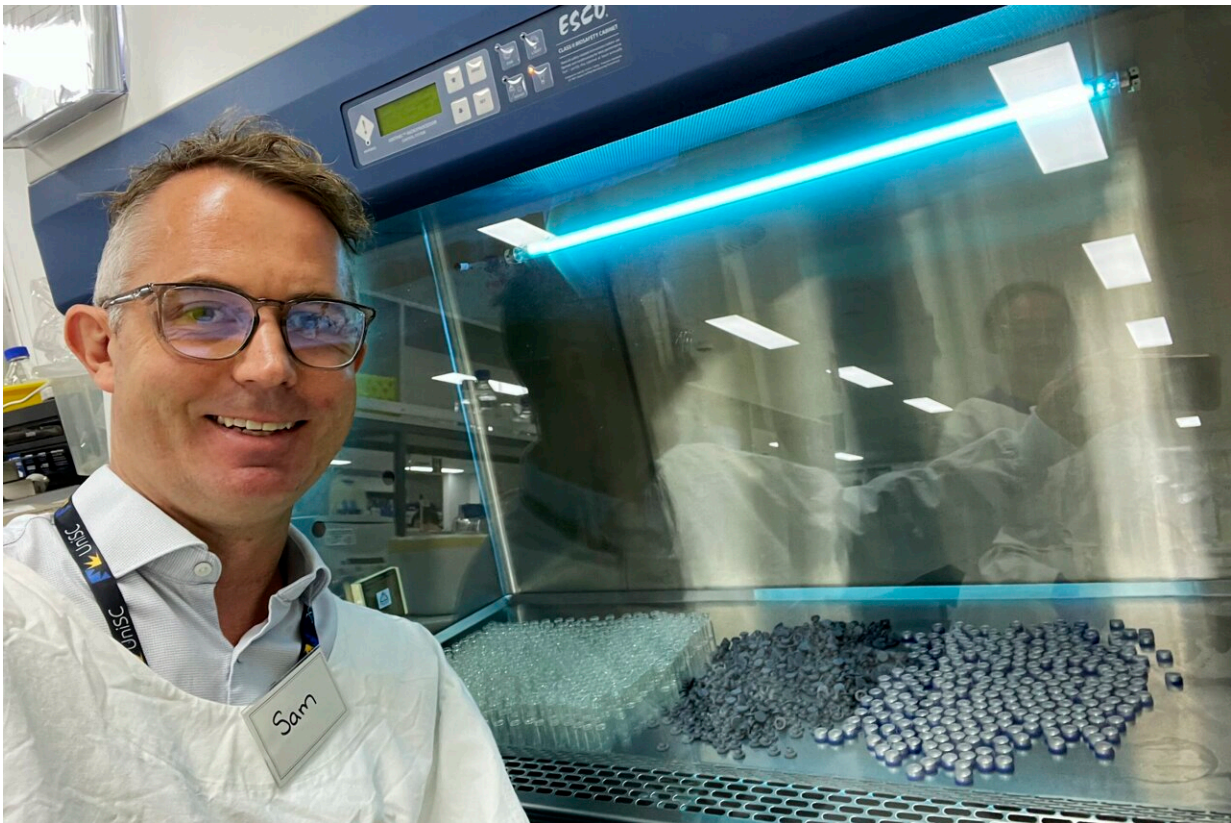
A koala sits in a tree at a koala park in Sydney, Australia, Friday, May 5, 2023. Australian scientists have begun vaccinating wild koalas against chlamydia in a pioneering field trial in New South Wales. The aim is to test a method for protecting the beloved marsupials against a widespread disease that causes blindness, infertility and death. Credit: AP Photo/Mark Baker

The first koalas were caught and vaccinated in March, and the effort is expected to last about three months.

Researchers use binoculars to spot koalas in eucalyptus trees, then construct circular enclosures around the tree bases with doors leading into cages. After a few hours or days, the koalas will eventually climb down from one tree to seek tasty leaves on another, and wander into the harmless traps.

"It's hard to confuse a koala with any other animals—they're pretty easy to spot," said Jodie Wakeman, veterinary care and clinical director at Friends of the Koala, a nonprofit that runs a wildlife hospital where the koalas are being brought for vaccination.

After a check-up to make sure the animals are in good condition, researchers administer anesthesia and shots of vaccine, then keep them under observation for 24 hours after they wake up, to confirm there are no unexpected side effects, said Wakeman.



Samuel Phillips poses for a photo in the Laboratory making UniSC Koala Chlamydia vaccine doses for wildlife vaccine trials at the University of the Sunshine Coast in Sippy Downs, Queensland, Australia, on Nov. 15, 2022. Australian scientists have begun vaccinating wild koalas against chlamydia in an ambitious field trial. "It's killing koalas because they become so sick they can't

climb trees to get food, or escape predators, and females can become infertile," said Phillips, who helped to develop the vaccine. Credit: Ton Stewart/Samuel Phillips via AP

The goal is to vaccinate healthy koalas to prevent them from becoming infected with chlamydia.

Before release, the researchers mark the koalas with a dab of pink dye on their backs, to ensure the same animals aren't caught twice.

When the first vaccinated koala was returned to her habitat on March 9, the scientists placed her cage at the base of a tree and opened the door. She quickly emerged and bounded up the tree trunk.

Koalas are iconic Australian marsupials, like wombats and kangaroos. They spend most of their time eating and sleeping in [eucalyptus trees](#), and their paws have two opposing thumbs to help them grasp and climb up trunks.

Australia's wild koala populations have declined steeply in the past two decades.

Last February, Australia's federal government declared koalas "endangered" in the eastern regions of New South Wales, Queensland and the Australian Capital Territory.



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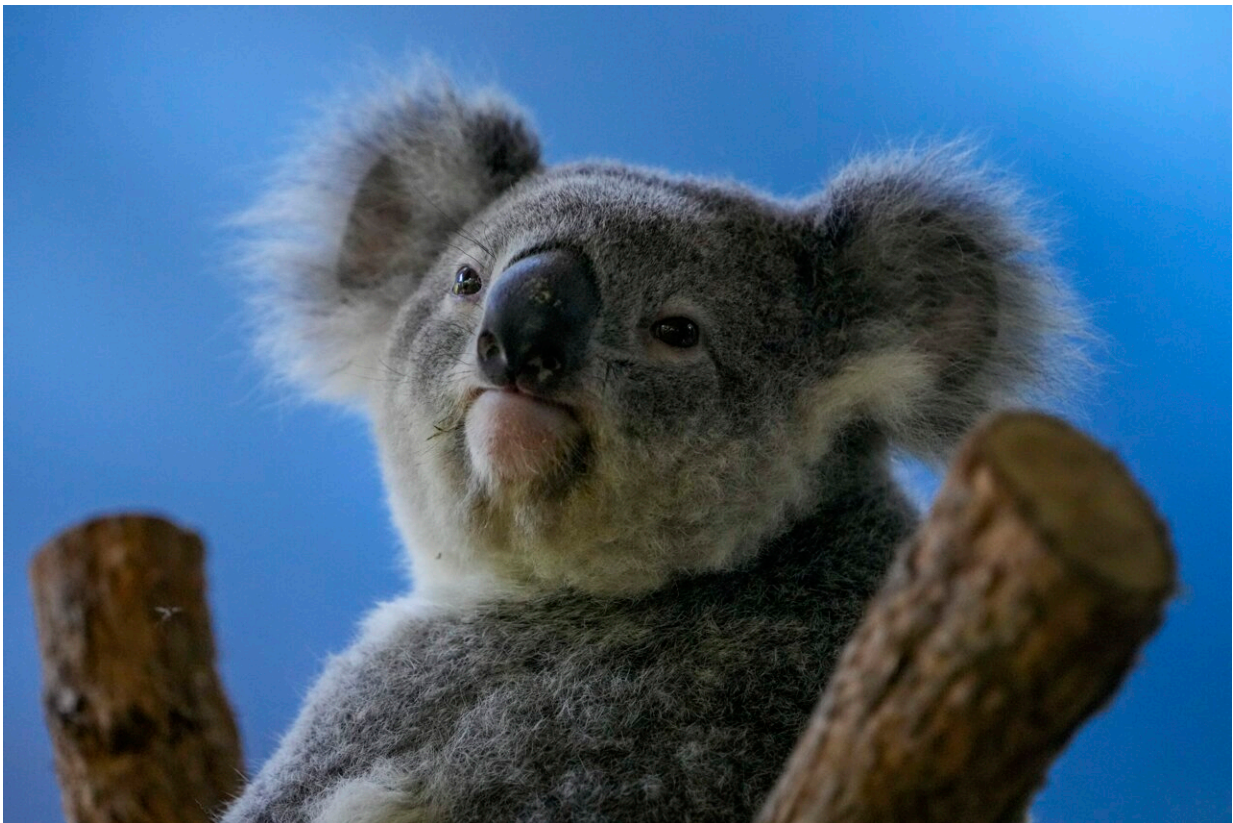
Facing compounded threats from disease, [habitat loss](#) and road collisions, koalas could become extinct by 2050, according to a [2020 assessment](#) from the New South Wales government.

Around half of wild koalas in Queensland are already infected with chlamydia, scientists estimate.

In deciding to vaccinate, the scientists are balancing the risk of

disturbing the animals against the danger of allowing the disease to spread. The trial was approved by multiple government bodies, including Australia's agriculture department and New South Wales' planning and environment department.

The origins of chlamydia in koalas aren't confirmed, but scientists believe it's likely the marsupials initially caught the disease from exposure to the feces of infected sheep and cattle. Then it's spread sexually, or passed from mother to offspring.



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While humans and livestock infected with the bacteria that causes chlamydia can be treated with antibiotics, it's not so simple for koalas.

The "complex" microbes inside the stomachs of koalas are designed to neutralize toxins in eucalyptus leaves that are their main food source, said Mathew Crowther, a conservation biologist at the University of Sydney. But their digestive systems can also neutralize some medicines so "that means they don't respond well to antibiotics treatment," he said.

Crowther has been monitoring a population of koalas in northern New South Wales for more than a decade. In 2008, 10% of animals tested there were infected with chlamydia. Today that rate is 80%.

"It's been devastating—there's very, very low fertility," he said. "You hardly see any babies."

The other threats koalas face—including [habitat destruction](#) from [land clearing](#) and climate-enhanced wildfires—may increase their stress levels, weakening their immune systems and making them more susceptible to diseases including chlamydia, said Crowther.





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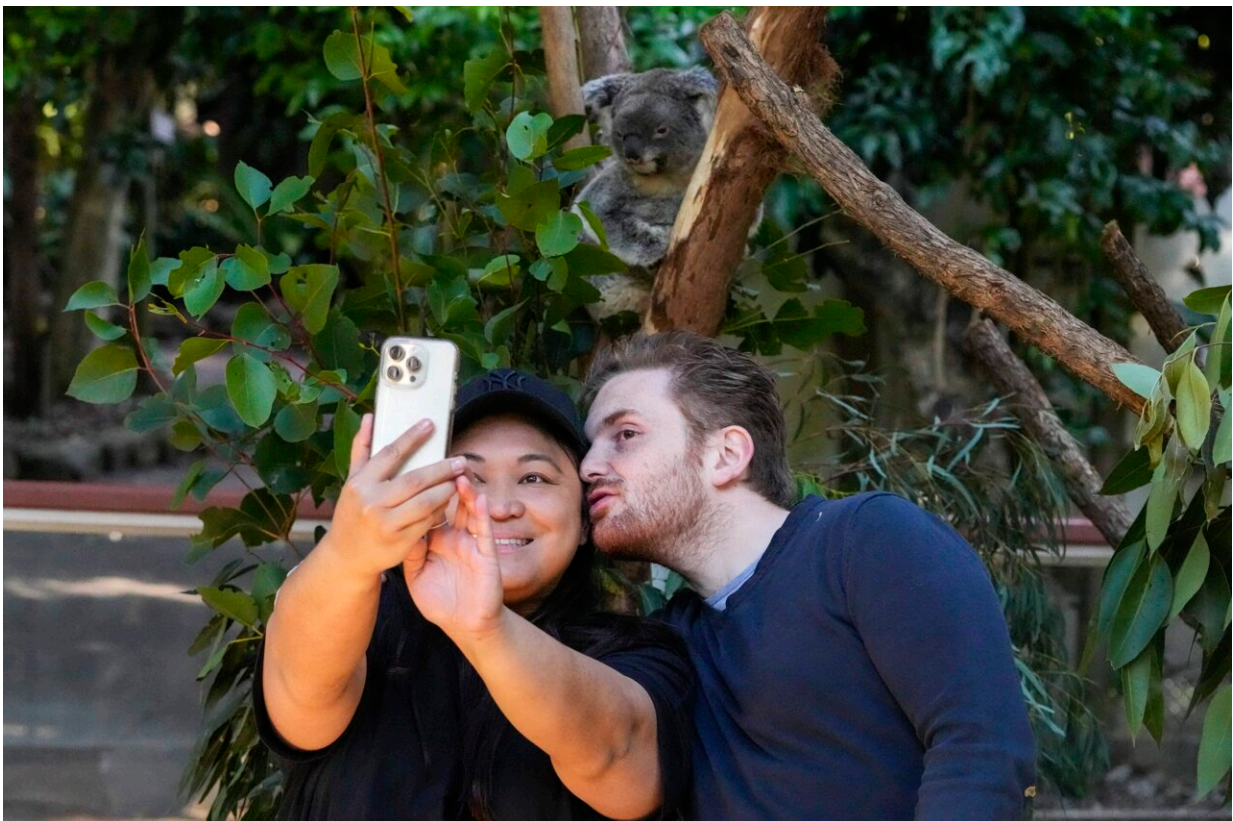
Rebecca Johnson, now chief scientist at the Smithsonian National Museum of Natural History in Washington, D.C., previously led the Koala Genome Consortium in Australia. She said that seeing the effects of the disease up close was heartbreaking.

A necropsy of one koala with advanced chlamydia that was euthanized revealed "ovaries completely encased in cysts" and "intestines full of hard lumps of food, evidence that she couldn't properly digest food,"

recalled Johnson. "She was obviously infertile and in pain."

There are only a handful of other examples worldwide of scientists attempting to catch and inoculate endangered wildlife for conservation. In 2016, scientists began to vaccinate Hawaiian monk seals against a deadly strain of morbillivirus. Two and a half years ago, biologists in Brazil began to vaccinate golden lion tamarins [against yellow fever](#).

"Vaccination for wildlife is certainly not routine yet," said Jacob Negrey, a biologist at Wake Forest University School of Medicine. "But whether it should be used more often is a fundamental question that conservation biologists are really wrangling with right now."



Visitors take a selfie with a koala at a koala park in Sydney, Australia, Friday, May 5, 2023. Australian scientists have begun vaccinating wild koalas against

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The Smithsonian's Johnson said the benefits are likely to outweigh the risks for [koalas](#). "Vaccination is an incredibly resource-intensive thing to

do. Koalas live high up in trees," she said.

"But because the effects of chlamydia are so debilitating, I think it's totally worth it."

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