

THE ROOST REPORT

PROBIOTICS

What are “probiotics” for bats?

Scientists are testing a bat “probiotic” designed to strengthen the natural community of **microbes on bat wings** and slow the growth of the fungus that causes white-nose syndrome. Similar to how people take probiotics for gut health, this treatment supports the **bat’s skin microbiome**.

The probiotic contains four naturally occurring bacterial strains from the genus *Pseudomonas*, all originally collected from the wings of healthy bats in the Pacific Northwest. These bacteria are **found in soils and on some bats across western Canada**. Developed by researchers at McMaster University and Thompson Rivers University – the treatment was tested in Washington, and British Columbia and has most recently been applied to bat colonies in Alberta.



Little Brown Myotis colonies are often found in buildings and bat houses - creating ideal locations for applying the probiotic treatment.

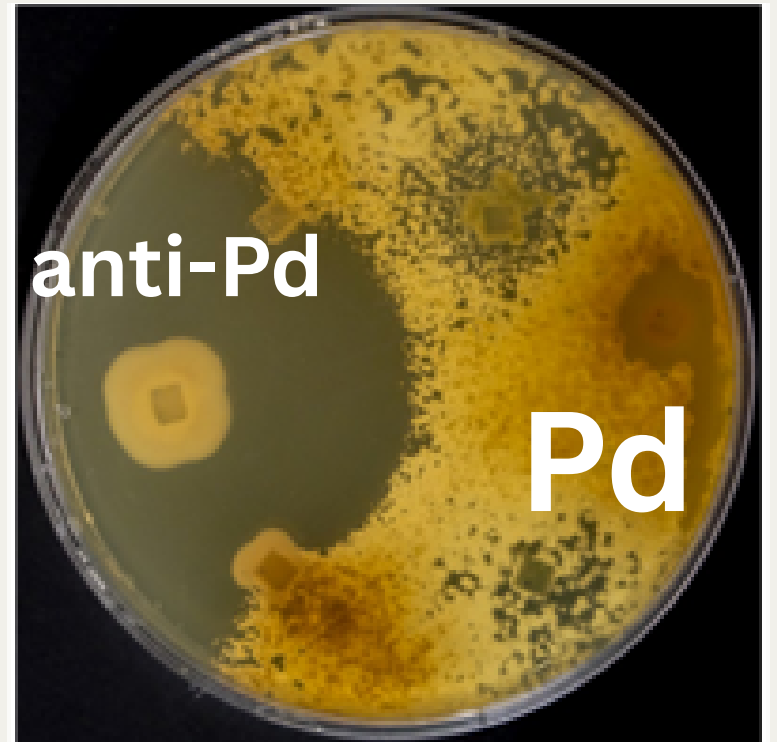


Image: Petri dish with Pd fungal cultures being grown; on the left shows the zone of inhibition around the anti-Pd fungal species/ Nick Fontaine.



FINDING SOLUTIONS

For More Information on White-nose Syndrome
<https://www.whitenosesyndrome.org>
https://www.cwhc-rscf.ca/bat_health.php



Cross-section of a wing tissue biopsy from a bat with white-nose syndrome. Healthy tissue is pink. Purple areas indicate infiltration of tissue by the fungus that causes WNS.

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How is the Probiotic Applied?

The probiotic can be applied in two ways. In British Columbia and Washington, a freeze-dried mix of beneficial bacteria and clay is gently sprayed into bat houses. More recently, the same bacteria were mixed with water and sprayed onto roost surfaces (this was the method used in 2025 in Alberta).



PROBIOTIC Project

The WCS Canada Probiotic Project has been running field trials since 2019 in B.C. and 2023 in Washington (WA).

A major milestone was reached in WA in 2025: bats with high probiotic levels on their wings carried little or no Pd, the fungus that causes white-nose syndrome.

In B.C., sites that have received treatment since 2019 still show no signs of Pd. Since then, treated BC bats appear to have spread beneficial probiotics to the closest monitoring site in WA, which bodes well for helping bats beyond the actual treatment sites.

Please see: <https://doi.org/10.19121/2025.Report.52408> for the 2025 summary report.

Overall, early evidence suggests the probiotic can help bats resist infection and improve survival and may be propagated by treated bats to other populations - making it one of the most hopeful tools yet in the fight against white-nose syndrome.

Conservation Partners include:

Thompson Rivers University, McMaster University, WA Dept. of Fish and Wildlife, NW Trek, Wolf Haven, Kwantlen First Nation, Kwikwetlem First Nation, Lower Shuswap Indian Band, Metro Vancouver Regional Parks, Creston Valley Wildlife Management Area, BC Parks, City of Vancouver, Stanley Park Ecological Society, BC Community Bat Program, BC Hydro, Alberta Environment & Parks; University of Calgary Vet Med, The County of Newell, DNA Gardens; and individual landowners provided logistical support and access to study sites. We would also like to thank a multitude of volunteers and other partners.

In both cases, the treatment is applied twice each season at night during early & late-summer maternity season, after bats leave to forage. When they return, bats pick up the probiotic on their wings as they crawl over treated surfaces in the roost - and they can pass it to other bats they touch.

Is the Probiotic Working as Planned?

An early study in Wisconsin found that a probiotic treatment could boost survival in hibernating bats from 8.4% to 46.2%, sparking efforts to test similar treatments in western North America.

Because western bats don't typically hibernate in large, accessible caves - and many winter sites are still unknown - researchers apply the new probiotic to summer maternity colonies instead, then track whether treated bats fare better the following winter.

Results so far are promising:

- Washington: to date, colonies treated with probiotics are showing **higher survival** than untreated sites. In fact, **all treatment sites remain free of WNS**, and one control site has largely died off from WNS.
- There is growing evidence that bats are spreading the beneficial probiotic cells around to other bats, possibly during mating and hibernation. This means the **treatment might help bats far and wide**, not just those roosting at the treatment roosts, and makes Probiotics a very efficient option for helping a lot of bats.



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