



DEPARTMENT OF HEALTH

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Hawai'i Department of Health releases new study of Kaua'i watersheds in Māhā'ulepū and Waikomo

HONOLULU – A new Hawai'i Department of Health (DOH) water quality study shows high bacteria counts historically observed in the Māhā'ulepū and Waikomo watersheds on Kaua'i are not associated with human waste.

While researchers were unable to pinpoint the exact sources of the bacteria, they conclusively determined human waste is not the cause of bacterial contamination in the water. The study is now available to the public online through the department's Clean Water Branch [webpage](#).

"We conducted a study using the latest technology available and determined the high bacteria counts in Māhā'ulepū Valley, which have been a concern for many years, is not linked to any human sewage sources in the area," said Health Director Bruce Anderson. "With this new information, we can assure the public that recreational waters in Waiopili Stream and nearby beaches do not pose an imminent health threat to swimmers."

DOH contracted the Lawrence Berkeley National Laboratory (Berkeley Lab) to better understand what may be contributing to the periodic high bacteria counts in the area. Their findings validated the results of a similar sanitary survey from [2016](#).

Using PhyloChip, an innovative microbial source tracking tool, the Berkeley Lab scientists found that neither human nor animal waste are the sources of any high counts of traditional fecal indicator bacteria, such as enterococci and *Clostridium perfringens*, in the Kaua'i watersheds.

"We plan to hold community meetings later this summer on Kaua'i to thoroughly explain the survey findings and will give the public an opportunity to ask questions of state health officials and Berkeley Lab scientists," Anderson added. "While this is a great step forward in understanding human health risks associated with the presence of bacteria in water in this area of Kaua'i, this is certainly not the end. Further research like this Kaua'i study is needed to guide the department in making health and safety recommendations to the public."

Berkeley Lab microbial ecologists, Gary Andersen, Ph.D. and Eric Dubinsky, Ph.D., led the survey efforts with the support of DOH's Clean Water Branch.

“This has been a great collaborative effort and gave us the opportunity to test PhyloChip as an innovative microbial source tracking tool in a tropical environment,” said Gary Andersen, Ph.D., of the Berkeley Lab. “We’re happy to help the Hawai’i Department of Health make progress in their investigative efforts to determine potential bacterial sources in the Kaua’i watersheds.”

After completing this survey and finding no evidence of widespread sewage system leaks, the Berkeley Lab ecologists proposed that the high counts of fecal indicator bacteria in Kaua’i’s waters are likely due to the use of traditional tests for enterococci and *Clostridium perfringens*, which were not designed for use in tropical regions. Enterococci and other bacterial indicators are naturally found in soils and other animals, and flourish in environments outside of their typical biological hosts. The ecologists note that this phenomenon is common in humid, tropical settings like Hawai’i.

The study shows that the natural presence of these bacteria in water does not necessarily put people at greater risk of gastrointestinal illness. Until a more appropriate and effective indicator of health risks in Hawai’i waters can be determined, the health department will continue testing according to federal guidelines and standards.

Additional significant findings from the study include:

- High counts of fecal indicator bacteria in some areas of the Māhā’ulepū watershed may be from cows and feral pigs, but these were isolated incidences and popular beach areas downstream from these areas were clean.
- There is no connection between the Makauwahi Cave and the Māhā’ulepū watershed as a conduit for fecal contamination, which was one pollution source posed as a hypothesis after the completion of the 2016 study.
- In the Po’ipū area, one coastal seep showed that there may possibly be pollution linked to injection wells. However, the routine coastal beach monitoring in the Po’ipū area by DOH does not indicate chronic high counts of fecal indicator bacteria.

To view the full report, visit <http://health.hawaii.gov/cwb/clean-water-branch-home-page/water-quality-references/>.

About the Department of Health Clean Water Branch

The Clean Water Branch protects the health of residents and visitors who enjoy Hawaii’s coastal and inland water resources. The Branch also protects and restores inland and coastal waters for marine life and wildlife. This is accomplished through statewide coastal water surveillance and watershed based environmental management using a combination of permit issuance, water quality monitoring and investigation, water quality violation enforcement, polluted runoff control, and public education. For more information, visit <http://health.hawaii.gov/cwb/>.

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