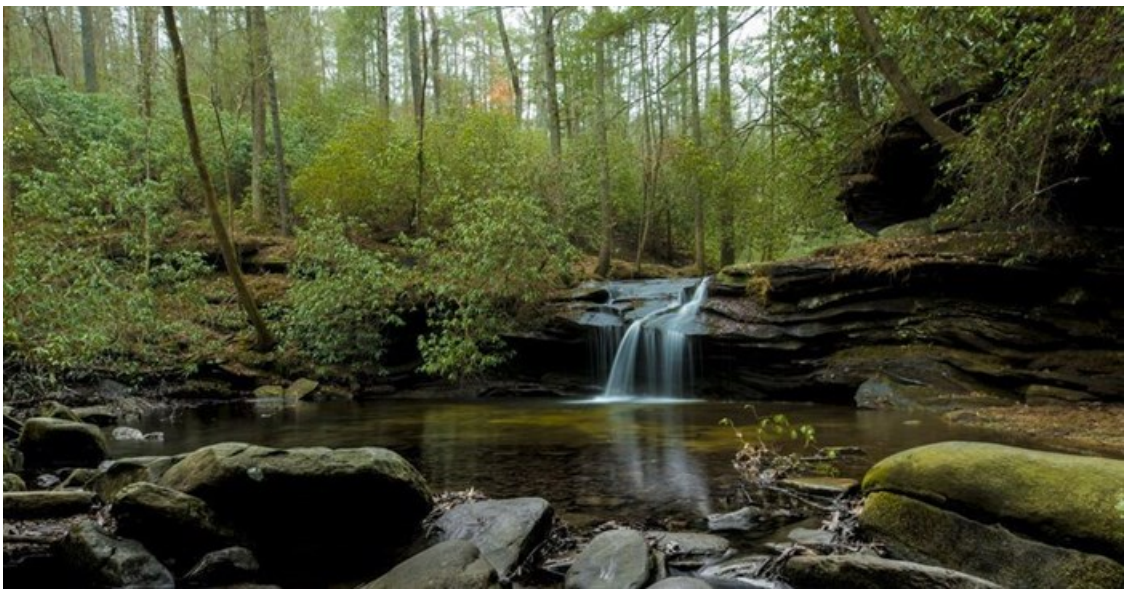
Healthy watersheds could help prevent childhood diseases

According to a global study supported by WWF, children living in river basins whose watersheds have greater tree cover are less likely to experience diarrhoeal disease, the second leading cause of death among children under the age of five.



© John Wollwerth – 123RF.com

Studying 300,000 children in 35 countries across Africa, Southeast Asia, South America and the Caribbean, the University of Vermont-led research estimates that a 30% increase in upstream tree cover in rural watersheds could have a comparable effect to improved sanitation, such as the addition of indoor plumbing or toilets.

The research, published in *Nature Communications*, is the first to quantify the connection between watershed quality and individual health outcomes of children at the global scale.

“Looking at all of these diverse households in all these different countries, we find the healthier your watershed upstream, the less likely children are to get this potentially fatal disease,” said Taylor Ricketts at UVM’s Gund Institute for Environment.

The findings mark an important step forward in identifying strategies to improve the health and environment of children globally. In addition to supporting existing programmes by governments and development agencies, further research can help fully understand how watershed forests impact the prevalence of diseases like diarrhoea, which has many causes, including waterborne pathogens and develop measures that bolster their ability to protect against them.

Benefits to human health

“This ground-breaking science indicates that investment in healthy forests and rivers can provide significant benefits for human health,” said Dave Tickner, chief freshwater adviser, WWF. “Many of these natural habitats are in critical condition, shown by a shocking 81% decline in freshwater wildlife between 1970 and 2012. Our failure to look after these critical habitats could also have real consequences for human health.”

According to the World Health Organization (WHO), one in four deaths of children under the age of five are attributable to unhealthy environments and 361,000 children are estimated to die of diarrheal disease every year because of poor access to clean water, sanitation and hygiene.

“For more than 40 years case studies around the world have suggested that ecosystem degradation has a disproportionate impact on the world's poorest people,” said Jonathan Hutton, director, the Luc Hoffmann Institute. “This study uses big data to demonstrate the strongest possible link between forest quality, water quality and human health. It is a significant piece of evidence in the case for better management of our river basins and other natural systems.”

The study is the first to use a massive new database that features 30 years of USAID demographic and health surveys, with 150 variables for 500,000 households, including spatial data on the environment, to enable “big data” approaches to study links between human health and the environment, globally.