

## Study shows microbes could help remove contaminants from water

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Tiny microbes could be used to remove [organic pollutants](#) from water, according to a seven-year scientific study conducted in Singapore.

Researchers from the NUS Environmental Research Institute (NERI) and the Singapore Centre for Environmental Life Sciences Engineering (SCELSE) at [Nanyang Technological University \(NTU\)](#) said that the natural ability of microbial communities could be harnessed to help cleanse the country's waterways.

The joint research team identified members of the microbial community and their functions in the aquatic ecosystem by extracting their DNA and RNA.

As well as discovering that the microbes could remove and neutralize organic pollutants, the scientists also found that the presence of aluminum, copper and potassium was critical to the community's ability to perform this cleansing.

According to a report on the research by NTU, the discovery of these chemical elements' influence on the microbial community's functions paves the way for researchers to better understand their water-cleansing performance through further monitoring and study.

The new study has been published in the scientific journal Environmental Science & Technology. Lead author

Dr. Gourvindu Saxena, research fellow at NERI and SCELSE, said: "Knowing what the microbes are doing provides information on what they are responding to. These marker-based microbial functions provide a higher resolving power than chemical markers that are currently in use.

"This study has enabled us to identify the key drivers of microbial communities and their functions at a watershed-scale. The findings can be used to understand microbial activity responsible for removing and neutralizing organic pollutants, which is critical to developing ecologically friendly waterways in rapidly urbanizing environments."

Professor Staffan Kjelleberg, center director for SCELSE at NTU, added: "For decades scientists have pursued research projects that seek to understand microbes' ability to chew-up stubborn pollutants.

"This breakthrough proves that it may be possible to push the boundaries in securing the availability of clean water through natural means and hence, maintain a more sustainable environment for Singapore and other societies."