

Microbes may be cleaning up waterways, say researchers

By **FENG ZENGKUN**
ENVIRONMENT CORRESPONDENT

TINY organisms in Singapore's canals could be helping to clean the water that flows through them, a new study has found.

After seven years of research, Singapore scientists have discovered that the drainage network in the Sungei Ulu Pandan catchment area hosts nearly 2,100 groups of microbes – single-cell organisms.

The team from the National University of Singapore (NUS) and Nanyang Technological University (NTU) said some of these microbes are able to break down organic pollutants such as styrene and fluorene, although laboratory tests to see if the microbes are actually cleaning up the waterways have yet to be done.

The team said the microbes could be harnessed as natural cleaners even before water in the drainage network is treated by national water agency PUB.

“For decades, scientists have sought to understand microbes’ ability to chew up stubborn pollutants,” said Professor Staffan Kjelleberg, director of NTU’s Singapore Centre on Environmental Life Sciences Engineering.

“This breakthrough proves it may be possible to push the boundaries in securing clean water through natural means.”

The scientists chose the Sungei Ulu Pandan catchment in south-west Singapore because it has two major land use types – residential and industrial – which allowed them to study how land use affects the types of microbes and their functions.

They collected and analysed water and sediment samples across three areas: Two residential sites in Bukit Batok and Clementi, and one industrial zone in Jurong East.

The team also discovered that the presence of aluminium, copper and potassium was necessary for the microbes to perform their cleansing function.

The scientists plan to study the effects of plants on the microbial communities, and to identify the most efficient group of microbes to clean the waterways, among other research.

The study also involved researchers from Australia, the United States and China.

✉ zengkun@sph.com.sg

“

BREAKTHROUGH

For decades, scientists have sought to understand microbes’ ability to chew up stubborn pollutants. This breakthrough proves it may be possible to push the boundaries in securing clean water through natural means.

– Professor Staffan Kjelleberg, director of NTU’s Singapore Centre on Environmental Life Sciences Engineering

”