

# DIRTY UMGENI

The Umgeni River is one of the dirtiest rivers in the country, with recent studies showing proof of cholera, shigella, salmonella and other harmful viruses and bacteria at every sampling point between the Inanda Dam and Blue Lagoon in Durban.



A new study by the Water Research Commission says water samples show that these viruses could infect people throughout the year from drinking untreated water, cooking with water or irrigating food crops from the river, or washing clothes, swimming or playing in the Umgeni, downstream of Inanda Dam.

“These observations may have serious health care implications,” University of KwaZulu-Natal researchers Johnson Lin, Atheesha Ganesh and Moganavelli Singh warn in a report submitted to the commission.

The release of the study comes as the city’s health unit has raised the alarm over a suspected outbreak of diarrhoea in Durban after two children died and more than 150 people were hospitalised in the past three months. Although most cases of the illness were reported in Inanda, Amaoti, Ntuzuma, Mayville and KwaMashu, health officials say people living in other suburbs could also be infected.

While conservation and environmental pollution are often seen as “luxury” issues for wealthy people, the researchers say that nearly 2.5 percent of all deaths in South Africa are related to unsafe water, poor sanitation or hygiene, and that 50 percent of acute gastrointestinal sickness is suspected to be caused by viral infection. They also recall that 395 people died and more than 120 000 became sick in the cholera epidemic in South Africa between 2000 and 2003. The researchers say that to save costs, most routine testing of South African river water quality is restricted to looking for E.coli and other sewage bacteria that are easy to detect, whereas it is almost impossible to test regularly for up to 100 different viruses coming from human faeces.

In this study, however, the researchers did one of the first comprehensive studies on human disease causing germs and viruses in the Umgeni River.

It was based on samples collected in winter, autumn, summer and spring between March 2011 and January last year at five sampling points – Blue Lagoon, Reservoir Hills, New Germany wastewater works, Krantzklouf nature reserve and Inanda Dam.



Every sampling point failed to meet water quality targets for drinking or recreation, with the most bacterially polluted water found at the mouth of the Umgeni River and next to an informal settlement in Reservoir Hills. They also found cholera, salmonella and shigella pathogens at every sampling point, along with adenoviruses, enteroviruses, rotaviruses and hepatitis B viruses.

“These results strongly indicate the potential of viruses in the water samples (especially from the lower catchment areas) to infect human hosts throughout the year. These observations may have serious health care implications.

“Although river water is never managed to achieve drinking water quality, the results would also raise concerns for those who consume water directly from the river without any form of treatment.” The results also suggested that the Umgeni should be tested more frequently to monitor actual virus levels rather than simply monitoring E.coli and other easily detectable sewage bacteria. Though they do not pinpoint the exact pollution sources, the researchers suggest that the most likely source of the viruses and bacteria in the Umgeni is inadequate municipal sewage treatment and runoff from informal houses close to the river.

“In such areas (in many parts of the country) no wastewater treatment is provided and raw sewage enters the rivers and streams directly. Because of lack of infrastructure in these settlements, the residents are often forced to inhabit river banks... people living in these areas often utilise the contaminated surface water for crop irrigation, recreation and domestic personal use such as washing, drinking and cooking without prior treatment.”



In their background comments, the researchers say diarrhoea can be caused by viruses, bacteria, parasites and toxins, but it was only during the past two decades that viruses had been firmly established as a cause of acute gastroenteritis.



Although many rivers have yet to be studied intensively, the UKZN researchers suggest that the Umgeni River is among the most heavily contaminated, along with the Vaal, Crocodile and Olifants rivers. The 230km Umgeni River had been chosen for the study because it was the primary source of water for more than 3.5 million people in an area which generated almost 65 percent of the provincial gross domestic product.

Source: <https://umngeniriverwalk.wordpress.com/2013/06/18/dirty-umgeni/>