Study addresses the future challenges of global surface water quality

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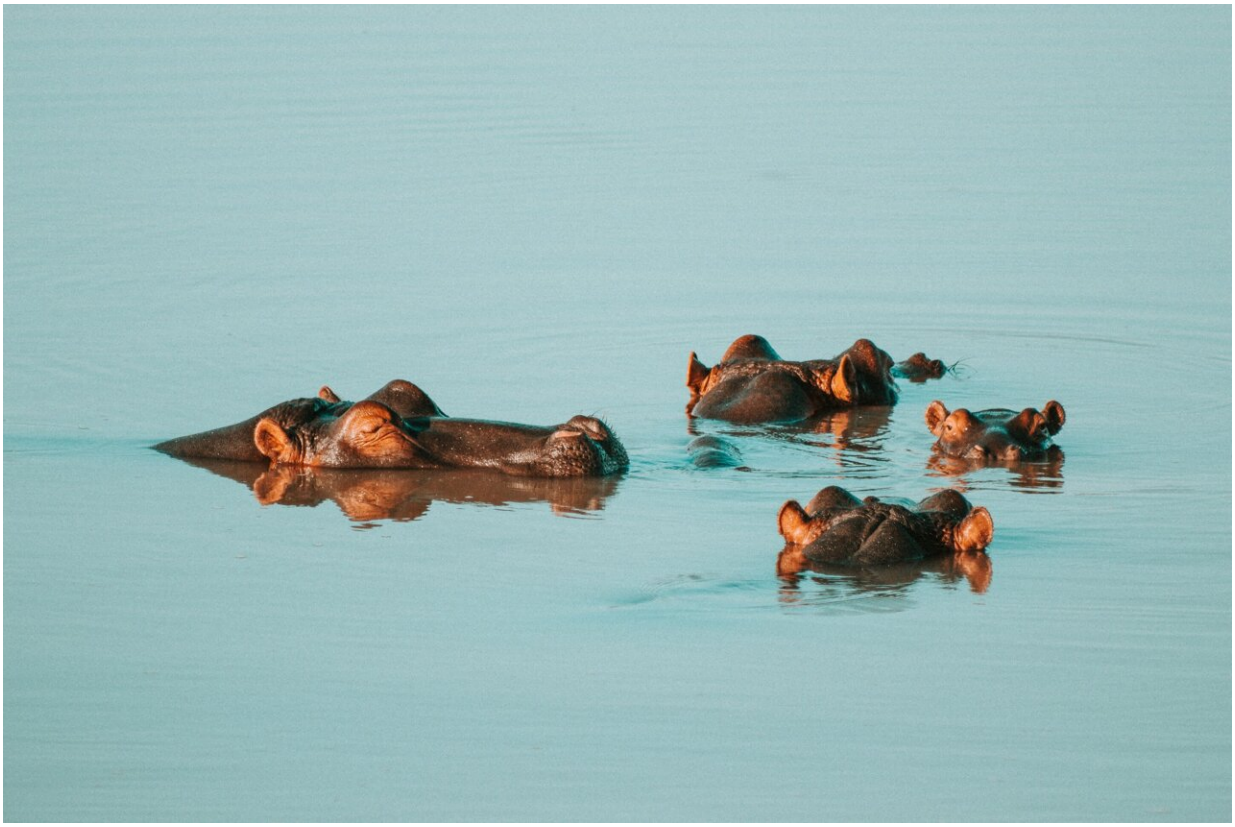

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As the world's population continues to grow, ensuring access to clean and safe water has become an increasingly important concern, yet little is known about how surface water quality will change in the future.

Recent scientific research has shed light on the potential challenges that surface water quality may face in the coming years, particularly in Sub-Saharan Africa. "While surface water quality is projected to improve in most developed countries, there is an important caveat: the outlook for the poorest nations is bleak."

A recent study, published in *Nature Water*, has projected an increase in surface water pollution in Sub-Saharan Africa. These findings highlight the need for proactive measures to protect surface water resources and safeguard the well-being of communities.

The study, led by Utrecht University researcher Edward Jones, emphasizes the importance of equitable and sustainable development, particularly in regions expected to experience the greatest challenges. Using a new global model, he assessed how climate change and societal developments could impact surface water quality until the end of the century.

Key hotspot

"Irrespective of climate change and socioeconomic scenario, there will be a strong increase in the number of people living in Sub-Saharan Africa who are exposed to poor surface water quality," warns Jones. "This pattern is not systematically replicated in any other world region."

Even under the most optimistic future scenario the number of people exposed to pollutant concentration exceedances in Sub-Saharan Africa will more than double. Alternatively, under pessimistic assumptions, the number of people exposed to poor surface water quality could increase five-fold.

"With the combination of strong water quality degradation and the drastic increases in the number of people exposed to poor surface water

quality, our paper concludes that Sub-Saharan Africa will become the key hotspot of surface water pollution in the future."

Challenges

The challenges are multifold, according to Jones. Waterborne diseases caused by pathogen-contaminated water can pose a significant risk to human populations. With a growing global population, the availability of good quality water for irrigation is of utmost importance.

Additionally, energy production, which is key for global development, can be hampered by a combination of both low water levels and high water temperatures. Thus, the study highlights the importance of limiting both climate change and anthropogenic water pollution to safeguard both human livelihoods and ecosystem health in the future.

More information: Edward R. Jones, Sub-Saharan Africa will increasingly become the dominant hotspot of surface water pollution, *Nature Water* (2023). DOI: 10.1038/s44221-023-00105-5. www.nature.com/articles/s44221-023-00105-5

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