Warmer wetter climate predicted to bring societal and ecological impact to the Tibetan Plateau

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Yamdrok Lake, Tibet. Credit: Pixabay/CC0 Public Domain

While recent reports have stated that more than half the world's largest lakes, including lakes in the Tibetan plateau, are drying up, a paper

published in *Nature Geoscience* today (May 27) suggests that, by the end of this century, land-locked lakes on the Tibetan Plateau are set to increase exponentially, resulting in major land loss and related economic, environmental and climatic impacts.

Climate and weather predictions suggest that increased rainfall due to climate change will enlarge these lakes, and see water levels rise by up to 10 meters.

The volume of water caught in these land-locked lakes is estimated to increase fourfold by 2100 according to the research by Dr. Iestyn Woolway of Bangor University (U.K.) and colleagues in China, Saudi Arabia, U.S. and France.

The increased lake surface area will also mean the loss of critical land area, for agriculture, human habitation, critical road and rail networks and economic disruption.

Dr. Woolway said, "Climate change is making the Tibetan Plateau greener and more habitable, attracting more people to higher altitudes due to better access to water. However, rising lake levels require urgent planning and policies to mitigate impacts on the region's ecology and population."

The resultant land loss could also lead to a change in the landscape, as lakes merge and the course of the rivers which feed and inter-connect the lakes are altered.

This could lead to increased greenhouse gas emissions and a positive feedback loop, amplifying climate change. An increase in freshwater, and in flow between lakes could also cause a change in ecology and affect wildlife. As an example, when the Zonang Lake in Hoh Xil Nature Reserve burst its banks in 2011, the Tibetan Antelope found their

migration route blocked.

More information: Widespread societal and ecological impacts from projected Tibetan Plateau lake expansion, *Nature Geoscience* (2024). DOI: 10.1038/s41561-024-01446-w

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