

# Climate change could decrease sun's ability to disinfect lakes

By Mary L. Martialay, Phys.Org

Increasing organic runoff as a result of climate change may be reducing the penetration of pathogen-killing ultraviolet sunlight in inland lakes, rivers, and coastal waters, according to a study in the journal *Scientific Reports*. The findings, from a team including researchers at Rensselaer Polytechnic Institute, points to the potential for an increase in waterborne pathogens.

Scientists have already measured an increase in “browning” of the world’s waters, a phenomenon caused by more organic matter washing in from the surrounding land. The study, led by Miami University in Ohio, analyzed water samples and used a model based at the National Center for Atmospheric Research to quantify, for the first time, the impact of dissolved organic matter on the potential for UV radiation from the sun to kill pathogens in the water.

Not only does an increase in dissolved organic matter make it more difficult for sunlight to disinfect bodies of water, it also makes it more difficult for water treatment plants to work effectively, said lead author Craig Williamson, a Miami University ecologist.

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