



## **Global modelling of river water quality under climate change**

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Climate change will pose challenges on the quality of freshwater resources for human use and ecosystems for instance by changing the dilution capacity and by affecting the rate of chemical processes in rivers. Here we assess the impacts of climate change and induced streamflow changes on a selection of water quality parameters for river basins globally. We used the Variable Infiltration Capacity (VIC) model and a newly developed global water quality module for salinity, temperature, dissolved oxygen and biochemical oxygen demand. The modelling framework was validated using observed records of streamflow, water temperature, chloride, electrical conductivity, dissolved oxygen and biochemical oxygen demand for 1981-2010. VIC and the water quality module were then forced with an ensemble of bias-corrected General Circulation Model (GCM) output for the representative concentration pathways RCP2.6 and RCP8.5 to study water quality trends and identify critical regions (hotspots) of water quality deterioration for the 21st century.