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POTENTIAL IMPACT OF CLIMATE CHANGE ON NUTRIENT LOADS IN LITHUANIAN RIVERS

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Abstract

The potential effects of climate change on nutrient (total N and total P) loads in four large-scale (A=2940–6771 km^2) river basins in Lithuania were analysed. The climate impact assessment was based on an ensemble of four (RCP2.6, RCP4.5, RCP6.0 and RCP8.5) future climate projections, representing the averaged outputs from three (GFDL-CM3, NorESM1-M and HadGEM2-ES) global climate models. For each climate projection, near-future (2017–2036) and distant-future (2081–2100) time periods were compared to the baseline period (1986–2005) to distinguish future changes.
The results have shown a decreasing trend in the annual nutrient loads in most of the studied rivers under the projected climate change. Seasonal changes in nutrient loads are also predicted with an increase occurring during the winter months and a fairly high decrease occurring in the spring and early summer months. These changes are consistent with the projected changes in the seasonal stream flow.

Key words: climate change, Lithuania, runoff, riverine nutrient loads

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