

## **Modelling of the climate change effects on nitrogen loads in the Jizera catchment, Czech Republic**

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**Abstract** The consequences of climate change for water quality are significant and are expected to heavily influence water resources management. Here, water quality modelling was done in order to evaluate the impact of climate change on nitrogen loads in the Jizera catchment. The Jizera catchment is of high importance for drinking water supply. We have used the eco-hydrological model SWIM (Soil and Water Integrated Model), which simulates water and nutrient fluxes in soil and vegetation, as well as transport of water and nutrients to and within the river network. The influence of climate change on nitrogen loads in the Jizera catchment was assessed here by using bias-corrected outputs of two dynamic regional climate models (RCMs). The two RCMs show a common trend of higher future total and summer discharge. However, the SWIM modelling results differ in terms of nitrate nitrogen load and its seasonality, between the two RCMs and among the modelled future periods. The uncertainty in the modelling results is caused mainly by differences in the regional climate models.

**Key words** water quality; climate change; nitrogen; regional climate