



Simulation of Dissolved Oxygen and Dissolved Substrate for Hasel River in Germany

Hasel is considered a moderately polluted river in Germany. This study investigated its water quality, examining Dissolved Oxygen (DO) and dissolved substrate (COD) with the use of AQUASIM. The calibration procedure used observed data from various locations along the river. The model's calibration was used to study the response of Hasel River to the effluents of wastewater treatment plants and sewer overflow emissions. Results revealed that high emissions from sewerage systems may reduce the oxygen concentration to low levels. Furthermore, joined sewer overflows may disrupt the oxygen levels for a long period. In addition, oxygen was over saturation in some periods of the calibration period. The proposed model can be utilized in future analyses, improving the functional understanding of ecological processes in rivers and the identification of ecological effective management strategies.