



Model based monitoring of stormwater runoff quality

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ABSTRACT

Monitoring of micropollutants (MP) in stormwater is essential to evaluate the impacts of stormwater on the receiving aquatic environment. The aim of this study was to investigate how different strategies for monitoring of stormwater quality (combination of model with field sampling) affect the information obtained about MPs discharged from the monitored system. A dynamic stormwater quality model was calibrated using MP data collected by volume-proportional and passive sampling in a storm drainage system in the outskirts of Copenhagen (Denmark) and a 10-year rain series was used to find annual average and maximum event mean concentrations. Use of this model reduced the uncertainty of predicted annual average concentrations compared to a simple stochastic method based solely on data. The predicted annual average obtained by using passive sampler measurements (one month installation) for calibration of the model resulted in the same predicted level but narrower model prediction bounds than calibrations based on volume-proportional samples, allowing a better exploitation of the resources allocated for stormwater quality management.

KEYWORDS

Modelling, monitoring, passive sampling, stormwater