

17th Global Toxicology and Risk Assessment Conference

Oct 22-24, 2018 Budapest, Hungary

E-BABE- Application of a load duration curve for establishing tmdl programs upstream of the tiaoxi river within the taihu watershed, China

Yang Luo and Jianying zhang
Ocean University of China, China

The impairment of water quality is a major concern for streams and rivers in China. Total Maximum Daily Loads (TMDLs) can be used to establish a framework and propose a series of techniques and tools to assess water quality at the watershed scale. While TMDLs have been developed for water quality management by the U.S. Environmental Protection Agency, scientists and stakeholders, the development of TMDLs in China is hindered due to the lack of comprehensive data collection system and by the difficulties in incorporating seasonal variations efficiently and accurately. In this study, load duration curves (LDCs) were used to calculate TMDLs for ammonia and to quantify the corresponding monthly and seasonal variations in the TMDL. The analysis indicated that the ammonia TMDL was affected by flow patterns, ranging from a maximum of 9418 kg•d-1 in high flow zones to a minimum of 48 kg•d-1 in low flow zones. Seasonally, the TMDL varied from 232 kg•d-1 in spring to 390 kg•d-1 in summer, 110 kg•d-1 in autumn, and 25 kg•d-1 in winter. The monthly load allocation for ammonia was in the range of 3.0 to 18 kg•d-1. The results provide policymakers with quantitative limits of nutrients loadings with seasonal variations which can be used to implement various water quality targets.

luoyang@tio.org.cn

Notes: