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太湖总磷、总氮宏观水环境容量的估算与应用

Estimation and application of macroscopic water environmental capacity of total phosphorus and nitrogen for Taihu Lake

关键词: [太湖水质目标](#) [宏观水环境容量](#) [允许入湖量](#) [允许排放量](#) [削减率](#)

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摘要: 在2000—2011年水量水质数据的支持下,估算了各种水质约束条件下太湖TP和TN的宏观水环境容量.基于宏观水环境容量,估算了2015年和2020年太湖TP和TN的允许入湖负荷和允许排放量,并将允许排放量分配到相应的行政区,为各行政区制订污染物控制方案提供依据.在上述研究的基础上,评估了2015年和2020年太湖水环境质量目标的合理性和可行性,结果表明,实现上述目标的可能性是存在的,但需要付出极大努力.在2020年以后,太湖的水质将长期维持在III类(TP)和V类(TN),这是藻类易于暴发的浓度区间,保障太湖水质安全的各种应急措施,如“引江济太”、蓝藻打捞等要长期抓不懈.

Abstract: This paper estimated the Macroscopic Water Environmental Capacity (MWEC) for TP and TN in Taihu Lake based on the historical data (2000—2011) of hydrology, water quality and pollutant loads. For the year of 2015 and 2020, the maximum allowable pollutant load to the water body, the maximum allowable discharge from sources and the minimum pollutant reduction percentages were also calculated according to the MWEC. The detailed allowable discharges for all sub-districts were also developed to guide water pollution control and management. The reliability and the feasibility of water quality targets in 2015 and 2020 were reviewed and assessed. The results showed that it was possible to achieve the strict targets of TP and TN in 2015 and 2020 with great efforts in pollution control and management. After 2020, water quality of Taihu Lake would stay at the Criteria III (TP) and Criteria V (TN) according to the Surface Water Environmental Quality Standard (GB3838—2002) for a long period. Due to the high possibility of algal bloom, effective emergency measures for improving water quality, such as transferring water from Yangze River to Taihu Lake and clearing the algae or other aquatic plants from the lake, were suggested for the long term program.

Key words: [water quality target for Taihu Lake](#) [macroscopic water environmental capacity\(MWEC\)](#) [allowable pollutant load](#) [allowable discharges](#) [pollutant reduction](#)

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