

EGU2020-3803

<https://doi.org/10.5194/egusphere-egu2020-3803>

EGU General Assembly 2020

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## **assimilative capacity analysis and total maximum daily load strategy for smart water management**

**Chia-Ling Chang**

Feng Chia University, Department of Water Resources Engineering and Conservation, Taiwan (f89541201@ntu.edu.tw)

Due to steep terrain, uneven rainfall, and high-speed streams, Taiwan's water environmental vulnerability is relatively high. Under the impact of climate change and environmental variation, Taiwan faces more and more challenges in water environmental management. Although environmental development can bring economic benefit, it can also impact the environment. Therefore, it is important to consider environmental assimilative capacity for maintaining a balance condition between environmental development and environmental protection. This study assesses the environmental assimilative capacity of several water systems in Taiwan. The total maximum daily load (TMDL) strategy considers water quality management from effluent-based control to ambient-based management to protect waterbodies based on their assimilative capacity. It is determined by a target water quality concentration and the assimilative capacity of the receiving waterbody. The concept of TMDL is similar in flood management and control. The purpose of this study is to discuss the total maximum environmental assimilative capacity of these water systems and to propose smart water management strategies for decreasing the water environmental risk and impact. Highly flexible and intelligent water management is essential for sustainable environmental development.