



## Wastewater Discharge and Its Impacts on Microbial Communities in Receiving Waters

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### Message from the Guest Editor

As wastewater treatment plants discharge large volumes of treated effluent into surface waters, it is crucial to understand how this impacts indigenous microbial communities. Effluents contain complex mixtures of organic matter, nutrients, chemicals, and microbes that can alter the microbial ecology and water quality. Studying community composition changes and gene flow dynamics provides insight into microbial adaptation and reveals threats to ecosystem stability. Tracking the transmission of antimicrobial resistance is critical to managing public health risks. Suggested sub-topics include: Immediate and long-term impacts of effluent contents (organic matter, nutrients, metals, pharmaceuticals, etc.) on indigenous microbial communities

Threats of wastewater discharge to the ecosystem and human health

Mitigation strategies to minimize ecological impacts from wastewater discharge

Fate and transport of wastewater-derived microbes and antimicrobial resistance genes

Microbial community analysis as a tool for evaluating and improving wastewater treatment

Modeling approaches to predict impacts on microbial communities





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## Message from the Editor-in-Chief

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