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Summary

Microplastics, which are typically 5 mm or less, are a major cause of concern for the marine and freshwater environment as they can physically and chemically pose hazard for aquatic biota. Wastewater effluent has been identified as a significant source of microplastics to the aquatic environment; however, there is limited knowledge regarding the sampling and characteristics of microplastics in effluent and their implications for the fate and effect of chemical contaminants, which are also present in wastewater. This project aims to fill these knowledge gaps by developing a new approach to sample and characterise wastewater-based microplastics. This will be achieved through a scoping study to identify the composition and abundance of microplastics in wastewater effluent around Australia. The implications for fate and effect will be explored via sorption experiments with relevant microplastic materials and chemicals of concern and in vivo experiments to assess the biological effect of microplastic itself and chemicals in the presence and absence of microplastics.

Research Expertise

- Microplastics
- Environmental toxicology
- Nanotechnology for water treatment
- Risk assessment modelling