

Surveillance and management of bloom-forming cyanobacteria in shallow urban water bodies – research needs, policy and guidance for a warming climate

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Abstract

The ability to better predict, monitor and manage the risk, timing and severity of cyanobacteria blooms within shallow urban water bodies is a need of current and strategic importance as such blooms have significant impacts on the enjoyment and use of scarce water resources and more shallow water bodies will be created as part of a global trend towards greater Integrated Urban Water Management practices.

Shallow urban water bodies, particularly those with long residence time and high nutrient loading, including wastewater lagoons, may suffer worsening cyanobacterial blooms as a result of warmer growth conditions and a preferential benefit provided by weaker vertical mixing and ephemeral stratification – accentuated in shallow water bodies by the high ratio of benthos to water volume that is characteristic of these biogeochemical systems.

We outline research needs, policy and guidance that pertain to cost-effective surveillance and management of bloom-forming cyanobacteria in shallow urban water bodies in the context of a warming climate, significant population growth and urbanisation.