



SURE Research Publication Service

1) Reference of your publication:

Li, Y.*, Degener, J., Gaudreau, M., Li, Y. F.*, Kappas, M. 2016. Adaptive capacity based water quality resilience transformation and policy implications in rapidly urbanizing landscapes. *Science of the Total Environment*, 569-570, 168-178.

2) Hyperlink to the publication:

<http://dx.doi.org/10.1016/j.scitotenv.2016.06.110>

3) Abstract:

Adaptive capacity based water quality resilience transformation and policy implications in rapidly urbanizing landscapes

Resilience-based management focuses on specific attributes or drivers of complex social-ecological systems, in order to operationalize and promote guiding principles for water quality management in urban systems. We therefore propose a resilience lens drawing on the theory of adaptive capacity and adaptive cycle to evaluate the urban resilience between water quality and land use type. Our findings show that the resilience of water quality variables, which were calculated based on their adaptive capacities, showed adaptive and sustainable trends with dramatic fluctuation. NH₃-N, Cadmium and Total Phosphorus experienced the most vulnerable shifts in the built-up area, agricultural areas, and on bare land. Our framework provided a consistent and repeatable approach to address uncertainty inherent in the resilience of water quality in different landscapes, as well as an approach to monitor variables over time with respect to national water quality standards. Ultimately, we pointed to the political underpinnings for risk mitigation and managing resilient urban system in a particular coastal urban setting.



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