Plastic transport across Asian and European rivers

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Land-based plastics, carried by rivers into the world’s oceans, are a major source of marine plastic pollution. Plastic pollution in aquatic ecosystems imposes serious risks on animal and human health, food safety and security, and water infrastructure. Recent modeling efforts estimated that around 1 million metric tonnes is emitted from rivers annually [Lebreton et al., 2017; Schmidt et al., 2017]. Although it is expected that most plastic emission originates from Southeast Asia, data on riverine plastic transport remains scarce in this area. To date, the already limited studies quantifying plastic pollution focused mainly on European and North American rivers are based on different methods, making it hard to compare the results [Blettler et al., 2018]. Using simple observation and sampling methods [van Emmerik et al., 2018] a first-order characterization of macroplastic (> 5 mm) transport was done in various rivers and waterways across Southeast Asia and Europe. We demonstrate that the order of magnitude and composition of riverine plastic emission may vary significantly in time and space. Our results emphasize the urgency to increase our knowledge on plastic pollution, especially in river systems.

References