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## Abundance of plastic debris across European and Asian rivers

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Plastic pollution in the marine environment is an urgent global environmental challenge. Land-based plastics, emitted into the ocean through rivers, are believed to be the main source of marine plastic litter. According to the latest model-based estimates, most riverine plastics are emitted in Asia. However, the exact amount of global riverine plastic emission remains uncertain due to a severe lack of observation. Field-based studies are rare in numbers, focused on rivers in Europe and North America and used strongly varying data collection methods. We present a harmonized assessment of floating macroplastic transport from observations at 24 locations in rivers in seven countries in Europe and Asia. Visual counting and debris sampling were used to assess (1) magnitude of plastic transport, (2) the spatial distribution across the river width, and (3) the plastic polymer composition. Several waterways in Indonesia and Vietnam contain up to four orders of magnitude more plastic than waterways in Italy, France, and The Netherlands in terms of plastic items per hour. We present a first transcontinental overview of plastic transport, providing observational evidence that, for the sampled rivers, Asian rivers transport considerably more plastics towards the ocean. New insights are presented in the magnitude, composition, and spatiotemporal variation of riverine plastic debris. We emphasize the urgent need for more long-term monitoring efforts. Accurate data on riverine plastic debris are extremely important to improve global and local modeling approaches and to optimize prevention and collection strategies.