

**ICWRER conference, Koblenz 2013**  
**Session abstract**

Title: Sources and fate of plastics in river basins and the marine environment – ecological and toxicological impacts

Session-Chairs: Dr. Georg Reifferscheid, Dr. Martin Wagner

Scope:

The worldwide mass production and use of plastic leads to an accumulation of plastics debris and its degradation products (microplastics) in aquatic ecosystems. The marine environment is affected in particular. Plastic may enter the marine environment by legal or illegal dumping, or by accidents. Plastic from inland can be transported to the marine environment by rivers. A number of personal care products contain plastic particles which may be released in the environment by waste water. Therefore, the discharge of sewage treatment plants (STPs) might further contribute to the contamination of river basins with microplastics because STPs are not designed for the removal of plastic particles. First estimations assume that up to 80% of the input into the marine environment occurs via river basins. Plastics from the micrometer to the meter range represent a significant hazard to the aquatic fauna. Often (micro)plastic is misinterpreted as pelagic prey and is consequently ingested by organisms. This has been documented for more than 260 species. Microplastics might be a vector for hazardous substances because they can adsorb persistent and possibly toxic chemicals. Thus, plastic particles may facilitate entering of these substances into the food chain. Moreover, plastics itself may leach endocrine disrupting compounds.

The session focuses on the current knowledge of the occurrence and fate of plastic in riverine and the marine environment. It tries to shed light on the main sources and transportation routes of microplastics, on quantitative and qualitative methods of analysis and monitoring, on ecological and ecotoxicological impact assessment, and on the current regulative situation in this field.

Keywords:

Microplastics  
Relevance  
Analysis  
Ecological impact  
Toxicological impact  
Regulation

Target group:

The meeting is targeted at persons from academia and authorities working in the field of water research and management.

Matching conference topics:

- Sustainable water management
- Water quality
- Water policy
- Monitoring systems
- Emerging Pollutants