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**Investigating the potential long-term toxicity of common microplastic polymer types using *Gammarus fossarum* in a more realistic set-up**

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Even though rivers have been recognized as significant carriers of plastics, freshwater systems have so far received significantly less attention than marine systems. Among studies looking into potential effects of plastic pollution on biota, only 21% of the effects were related to freshwater systems. While overall evidence appears to support that macroplastics negatively impact biota, much ambiguity remains about the effects imposed by microplastics since only about 47% of the measured effects could indeed be detected. These uncertainties are rooted in a diverse set of problems, such as the shape of the used particles, chemical composition of the particles, exposure concentrations, exposure durations, as well as the lack of appropriate controls. The aim of this project is to establish what the effects of chronic exposure to microplastics in *Gammarus fossarum* are. To address some of the raised criticisms more realistic exposure scenarios were chosen, with the inclusion of natural particles (river sediment) as controls. Analysis will consider different aspects, such as feeding rates, respiration measurements, as well as proteomics.