MikroPlaTaS – Microplastics in dams & impoundments: sedimentation, distribution, ecological effects

Project ideas & goals:

- Key issue in understanding the fate and potential effects of microplastics is their dynamic nature
- Dams and reservoirs constitute important parts of sedimentation of microplastics
- Identifying and characterising microplastic in water and sediment
- Understanding biofilmformation on plastic and the sedimentation of these particles
- Recording the uptake and effects of microplastics by individuals and entire communities

TP1: Distribution | **TP2: Biofilm** | **TP3: Effects** | **TP4: Society**

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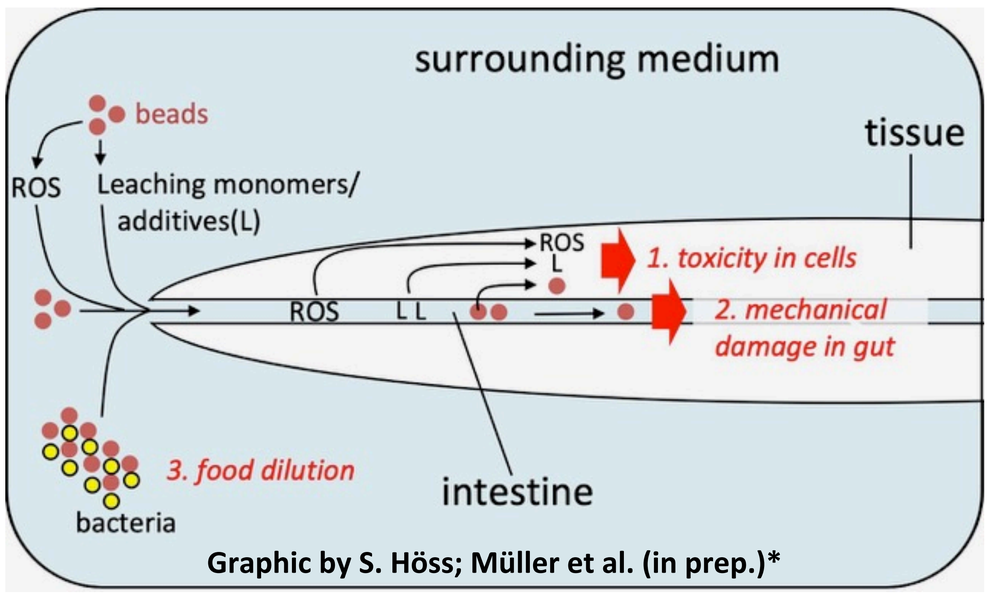


Graphic by S. Höss; Müller et al. (in prep.)*

Background:

- Nematodes are key players in benthic food webs
- Nematodes are able to take up microplastic from the surrounding medium

Question:

- Are microplastic particles toxic to nematodes?
- Which pathways are responsible for toxicity?

Fig. 1
Polystyrene (PS) concentration

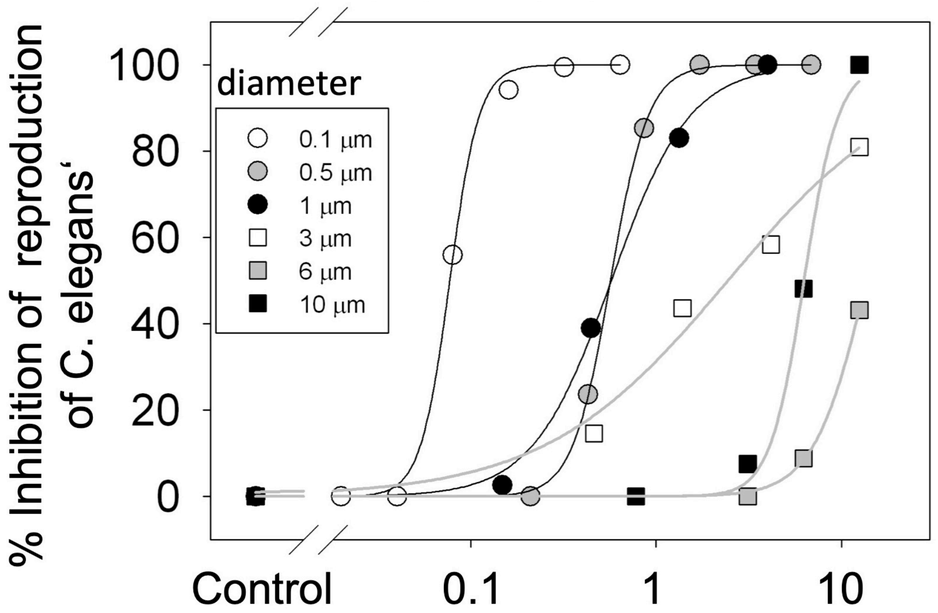


Fig. 2
Total surface of beads

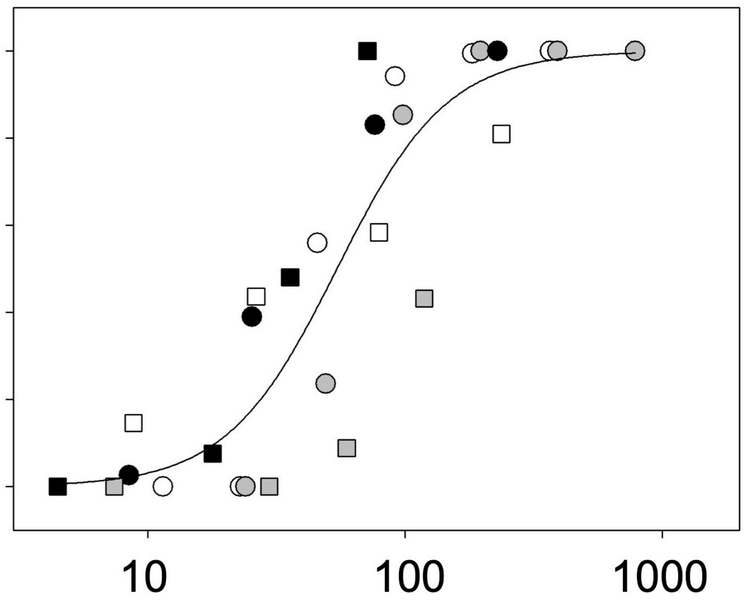
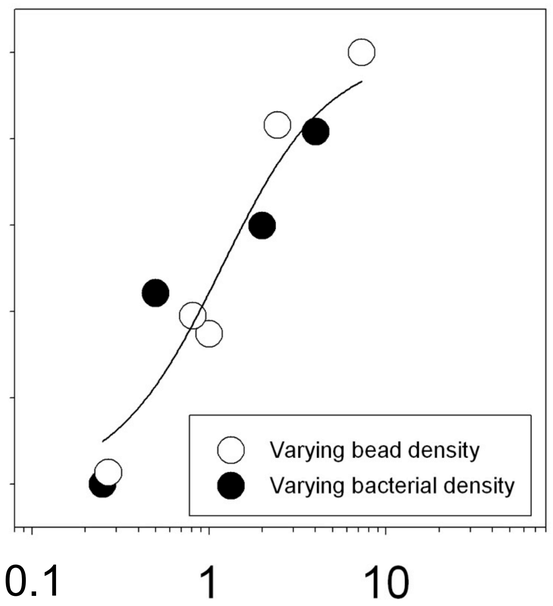


Fig. 3
Mixtures 1µm beads + food bacteria



- **Toxic effects observed in a concentration- and size depending manner (Fig. 1)**
- **Toxicity related to total surface area of microplastic spheres applied (Fig. 2)**
- **Observed effects might be caused by reduced food availability (Fig. 3)**

***Müller, M; Füser, H.; Traunspurger, W.; Höss, S.:** Surface related toxicity of polystyrene beads to nematodes and the role of food availability (in prep)

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