Microplastic pollution (i.e. plastic particles with a diameter of <5 mm) of both marine and freshwater environments is currently one of the most intensely studied issues in the field of ecology and environmental protection. Many studies attempt to estimate the distribution and concentration of microplastic particles in various environments and determine how microplastic particles affect the organisms inhabiting these environments. Decidedly less research pertains to an assessment of the effect of microplastic particles on the ecological interactions between organisms at the same and at different trophic levels. Our project aims to study the effect of microplastic particles on intra- and interspeciffic competition for resources, predator—prey, herbivore-algae, and parasite—host interactions among a variety of freshwater organisms, including green algae, cyanobacteria, microsporidia, planktonic animals and fishes.