



Wrapped up in plastic

Plastic is a versatile material appreciated for its durability and wide applicability in everyday products like food containers, beverage bottles, and medical devices. However, mismanaged plastic waste frequently washes into streams and rivers, where it is consumed by various organisms. To help avoid mortality from potentially crushing predators such as juvenile dragonflies (Odonata) and brown trout (*Salmo trutta*), the aquatic larvae of caddisflies (Trichoptera) build protective cases. Interestingly, we recently discovered that caddisfly (*Lepidostoma basale*) larvae use plastic waste as a material for case-building (Aquat Biol 2019; doi.org/10.3354/ab00711). During a laboratory experiment, the caddisfly larva shown here was offered blue microplastic particles (<5 mm) of polyethylene terephthalate (PET, a plastic type commonly used in beverage bottles), along with gray sand grains. After having been removed from its original case composed of natural materials, the larva immediately started building a new case using the PET particles, and then later incorporated the sand grains into its case. The experiment revealed that caddisfly case stability decreased with increasing PET particle load (Environ Sci Pollut R 2020; doi.org/10.1007/s11356-020-08790-5), suggesting that plastic waste incorporation in caddisfly cases may reduce protection from predators and, thereby, influence predator-prey

interactions. Fish often consume caddisfly larvae along with their cases, and microplastics are known to cause inflammatory responses in fish. The question that remains unanswered is how microplastics in caddisfly larval cases may affect predatory fish.

Sonja M Ehlers^{1,2}, Tamara Al Najjar², and Jochen HE Koop^{1,2}
¹Department of Animal Ecology, Federal Institute of Hydrology, Koblenz, Germany; ²Institute for Integrated Natural Sciences, University of Koblenz-Landau, Koblenz, Germany
doi:10.1002/fee.2303

