

# **Parasites as bioindicators in aquatic ecosystems**

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In recent years there has been an increasing number of papers showing how parasitism and pollution can interact with each other in aquatic organisms. Apart from parasitological aspects these interactions are also important in terms of ecotoxicological research. The current presentation aims at identifying three promising directions for future research in the interdisciplinary field of parasitology and ecotoxicology.

1. Parasites as sinks for pollutants within their hosts: Some parasites are able to reduce pollutant levels in the tissues of their host. The reduction of pollutants is an interesting implication since parasites are beneficial to their hosts from this perspective. Additionally, due to their ability to concentrate environmental toxins within their tissues they can be used as accumulation indicators of heavy metal contamination. In other cases free-living accumulation indicators may erroneously indicate low levels of pollution if they are infected with parasites.
2. Parasites as a diagnostic tool to test bioavailability of substances. In order to take up and accumulate pollutants the substances have to be metabolized by the host first. Accordingly, the detection of substances within endoparasites is a sign for the biological availability of pollutants.
3. Changes of biomarker responses of the host against pollutants. Parasites can alter physiological reactions of their hosts against pollutants in different ways. Therefore, in ecotoxicological studies, examining the question whether exposure to certain chemicals affects the physiological homeostasis of a test organism, it is important to use organisms that are known to be uninfected.