

The Environmental Change Initiative presents:



ECOLOGICAL EFFECTS OF COMMON PHARMACEUTICAL COMPOUNDS IN STREAMS

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Abstract

Pharmaceutical and personal care products (PPCPs) are ubiquitous in surface waters throughout the world but their effects on ecological function and structure is not well understood. The concentration of pharmaceuticals in surface waters has been measured throughout the world and I will review the concentrations and discuss some new findings from my research group on illicit drugs in suburban and urban streams. Research in my laboratory has also explored the effects of common pharmaceuticals (caffeine, cimetidine, ciprofloxacin, diphenhydramine, metformin, and ranitidine) on ecosystem functions ranging from primary production, community respiration and invertebrate production through laboratory and field experiments. I will describe new methods and results from these research projects. I will discuss explorations of the influence of pharmaceuticals on bacterial community composition. Our data demonstrate that PPCPs, alone or in combination, influence stream biofilms and invertebrates and their presence in aquatic ecosystem could have consequences for important ecological functions.