

Supplementary Material

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Table S1. Setup parameters for the SWMM sewer system model

Simulation options	
Infiltration	Modified Horton
Flow Routing	Kinematic Wave
Link Offsets	Depth
Min Slope	0
Allow Ponding	No
Skip Steady State	No
Reporting Time Step	00:00:15
Wet Step	00:05:00
Dry Step	01:00:00
Routing Step	00:00:30
Inertial Damping	Both
Force Main Equation	Hazen-Williams
Minimum Variable Time Step	0.75 s
Lengthening Step	0
Minimum Nodal Surface Area	1.14 m ²
Maximum Trials per Time Step	8
Head Convergence Tolerance	0.0015 m
System and Lateral Flow Tolerance	5%
Evaporation	
Monthly Pattern	0.4; 0.8; 1.4; 2.2; 2.8; 3.2; 3.2; 2.8; 2.1; 1.4; 0.8; 0.4
Dry Only	Yes
Infiltration	
Max Rate	20 mm/h
Min Rate	1 mm/h
Decay	4 1/h
Dry Time	3 d
Subareas and Conduits	
Manning N for Impervious Area.	0.015 mm
Manning N for Pervious Area.	0.1 mm
Depression Storage Impervious Areas	1.5 mm
Depression Storage Pervious Areas	3 mm
Percentage zero Impervious Area	25%
Conduit Roughness	0.01

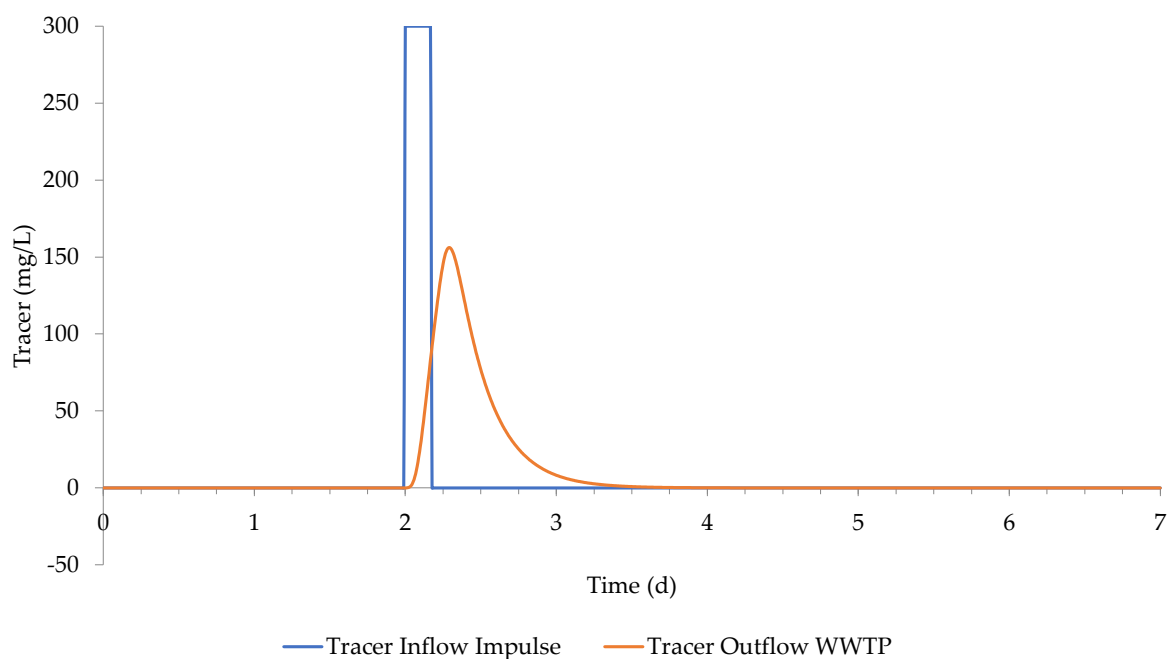


Figure S1. Propagation of inert tracer through the wastewater treatment plant (WWTP) during wet weather (WWTP inflow = 1000 L/s)

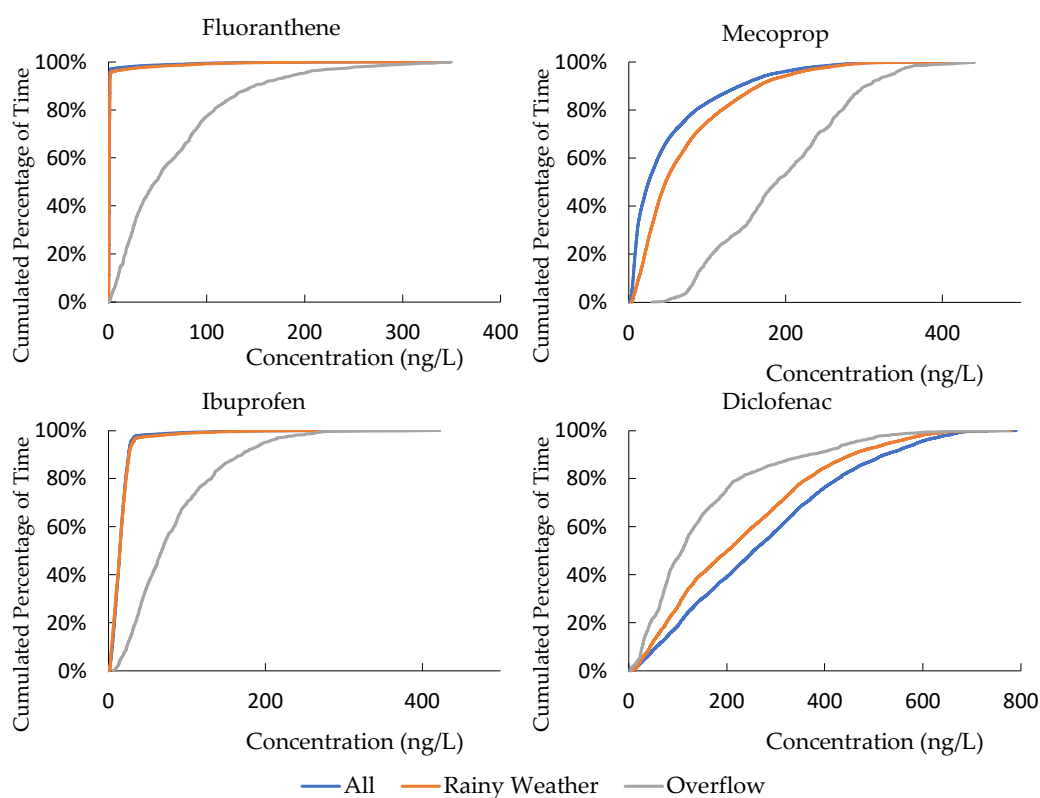


Figure S2. Cumulative frequency distributions for fluoranthene, mecoprop, ibuprofen and diclofenac in the river downstream the wastewater treatment plant. The percentage on the y -axis corresponds to the time of the state lasts. All: total simulation period (8760 h), rainy weather: stormwater in the WWTP effluent >5% (5935 h), overflow: CSO events (234 h)

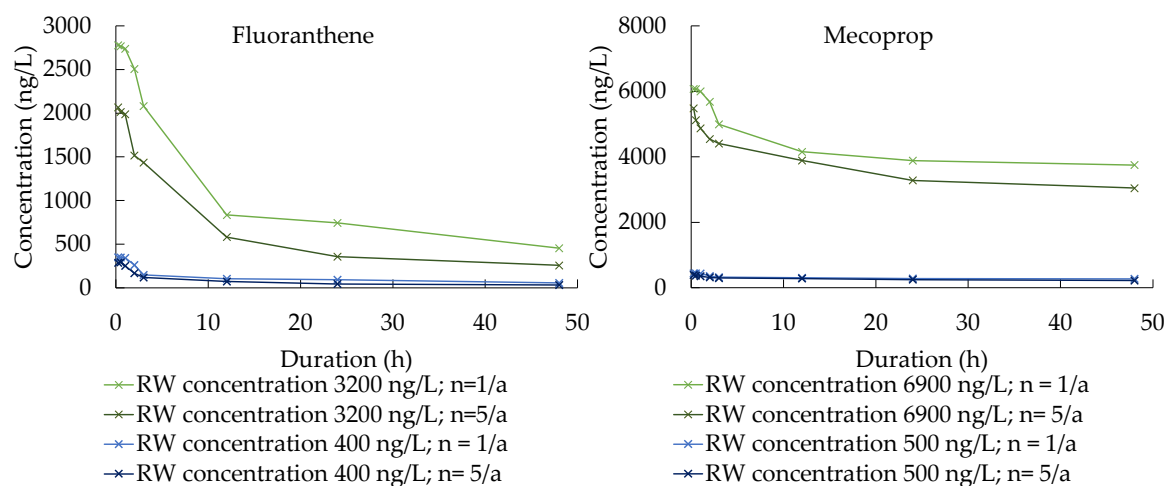


Figure S3. Concentration-duration-frequency curves in the river immediately downstream of the wastewater treatment plant for fluoranthene and mecoprop with varying rainwater (RW) concentrations