

Eawag Seminar Invitation

Roadway Runoff as a Source of Toxic Trace Organic Contaminants to Surface Waters

Speaker **Prof. Edward P. Kolodziej**, *Center for Urban Waters, University of Washington, Seattle, USA*

When **December 10, 16.00 – 17.00, CET**

Where **Online via Zoom, contact seminars@eawag.ch for access details.**

Abstract In the U.S. Pacific Northwest, a specific species of salmon, (coho salmon, *Oncorhynchus kisutch*), annually exhibit unexplained acute mortality upon stormwater exposure when adult salmon migrate to urban and near urban creeks to reproduce. By investigating this phenomenon with a portfolio of techniques based upon liquid chromatography-high resolution mass spectrometry, we identified a quinone transformation product of a globally ubiquitous tire rubber antioxidant as the primary causal toxicant for this mortality phenomenon. Retrospective analysis of representative roadway runoff and stormwater-impacted creeks of the U.S. West Coast indicated widespread occurrence of the quinone product (<0.3-19 µg/L) at toxic concentrations (LC50 of 0.8±0.16 µg/L). These results reveal unanticipated risks of tire rubber antioxidants to an aquatic species and imply toxicological relevance for widely dissipated tire rubber residues. Additional consideration of the effects of roadway runoff on water quality and sensitive aquatic species is likely merited.