

## SCCWRP Annual Report 2003-04

### Atmospheric concentrations of PAH, pesticides, and other semi-volatile organic compounds in the Los Angeles coastal region

Lisa D. Sabin, Kenneth C. Schiff, Jeong Hee Lim<sup>1</sup> and Keith D. Stolzenbach<sup>1</sup>

<sup>1</sup>University of California, Department of Civil and Environmental Engineering, Los Angeles, CA

#### ABSTRACT

Emissions of semi-volatile organic compounds into the atmosphere and subsequent deposition may contribute to the contamination observed in waterbodies throughout the Los Angeles region. However, few studies have evaluated the significance of atmospheric deposition of semi-volatile organic compounds, particularly in the Los Angeles air basin. The purpose of this study was to measure semi-volatile organic compounds in ambient air in the coastal Los Angeles basin to determine whether the atmosphere is a significant potential transport mechanism of these contaminants to local waterbodies. The target constituents included polynuclear aromatic hydrocarbons (PAHs), organophosphorus and organochlorine pesticides (diazinon, chlorpyrifos, malathion, toxaphene, DDT), and other chlorinated hydrocarbons (PCBs). Four seasonal measurements were made at each of six sites in proximity to waterbodies impacted by these organic compounds. Air concentrations were measured using a high-volume sampler equipped with a quartz fiber filter and a polyurethane foam plug, and analyzed using gas chromatography with mass spectrometry (GC-MS) detection. PAHs were detected in 96% of all samples, with concentrations ranging from 3 ng/m<sup>3</sup> to 132 ng/m<sup>3</sup>. Ratios of individual PAH compounds indicated transportation-related processes, including gasoline and diesel combustion, were likely sources near the study sites. The detection of PAHs at all sites during all seasons indicates the potential for cross-media transport into waterbodies of concern. In contrast, infrequent detection and only low concentrations (< 1 ng/m<sup>3</sup>) of organophosphorus and organochlorine compounds were observed in this study, indicating chronically high atmospheric concentrations of these compounds are not a widespread problem in coastal Los Angeles.

#### Full Text

[ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2003\\_04AnnualReport/ar06-sabin\\_pg61-72.pdf](ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2003_04AnnualReport/ar06-sabin_pg61-72.pdf)