

**Western Airborne Contaminants Assessment Project (WACAP):  
Linking Air, Water, and Land Quality**

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According to the six-year, multi-agency Western Airborne Contaminants Assessment Project (WACAP), numerous airborne contaminants, including heavy metals and both current-use and North American historic-use pesticides, were detected in twenty western U.S. (including California) and Alaska national park ecosystems from the Arctic to the Mexican border. WACAP linked atmospheric deposition with aquatic and terrestrial ecosystem effects, determining the risk to food webs and probable sources of such contaminants. The concentration of airborne contaminants in air, snow, water, sediment, lichen, conifer needles, and fish was determined in eight core parks, including Sequoia & Kings Canyon. Biological impacts on fish were also analyzed in the core parks. More limited assessment focusing on vegetation was conducted in twelve secondary parks, including Yosemite and Lassen Volcanic.

Key findings from WACAP, and the California parks in particular, are: (1) concentrations of mercury and historic-use pesticides (dieldrin and DDT) in fish taken from Sequoia exceeded fish-eating wildlife and/or human health consumption thresholds; (2) concentrations of current-use pesticides in fish at Sequoia were among the highest when compared to other core parks; (3) concentrations of current-use and historic-use pesticides in vegetation and air samples from Sequoia, Yosemite, and Lassen Volcanic were typically above the median of all parks sampled; (4) snow from Sequoia had among the highest values of current-use pesticides; and (5) agricultural areas located within 150 km of the park are probable major sources of pesticides, while regional coal combustion sources (e.g., power plants) are associated with elevated mercury.

The full WACAP report, fact sheet, publications and additional information can be found at [http://www.nature.nps.gov/air/Studies/air\\_toxics/wacap.cfm](http://www.nature.nps.gov/air/Studies/air_toxics/wacap.cfm). These results show that atmospherically-deposited contaminants are accumulating in fish in remote ecosystems, and exceeding concentrations relevant to established human and wildlife health thresholds. The regional nature of pesticide distribution and mercury transport, combined with the tendency for these pollutants to accumulate more readily at higher elevations and/or nearer to agricultural areas, suggests that fish in other remote areas of California may also have elevated body burdens of airborne contaminants.