

Spatial and temporal distribution of contaminants in the WACAP parks

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The Western Airborne Contaminants Assessment Project (WACAP) evaluates the exposure, accumulation and impacts from airborne contaminants reaching remote parks in the western U.S. We have conducted extensive sampling of fish, snow, water, lake sediments and vegetation at a number of parks in the western U.S. and Alaska. We will describe the spatial (horizontal and vertical) and temporal distributions of the primary contaminants measured in WACAP: mercury, pesticides, PAHs, PCBs and other persistent organic compounds. We will also present airshed maps from atmospheric transport modeling, which give an indication of contaminant sources. Significant findings include: historic and current use pesticides are significantly correlated with proximity of use and cropland intensity; significant east-west gradients exist for some contaminants across the continental divide; higher levels of Hg were found in fish in the Alaskan parks; a relationship between snowpack Hg and particulate carbon exists; and lake sediments show the long-term temporal pattern of Hg deposition.