# Pollution across an urban-alpine boundary: polycyclic aromatic hydrocarbons and polychlorinated biphenyls in the snowpack of Utah's Wasatch Mountains

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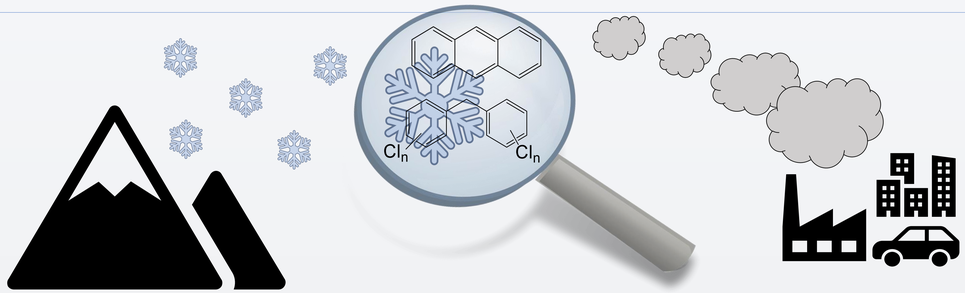
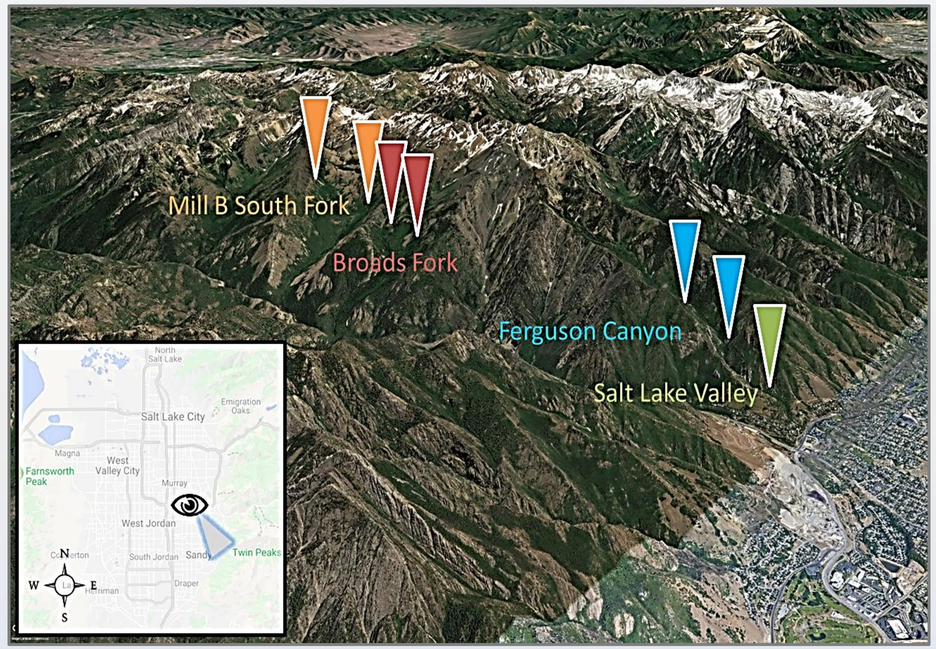
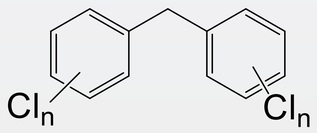
## Introduction

Salt Lake City, Utah is geographically unique as a major urban center directly adjacent to alpine wilderness. Airborne contaminants like polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) are readily transported through the atmosphere, and the PAHs and PCBs emitted in SLC may penetrate these alpine areas. The transport of PAHs and PCBs from urban-sources to alpine-sinks has received little attention and these contaminants have never been quantified in Utah's Wasatch Mountains.





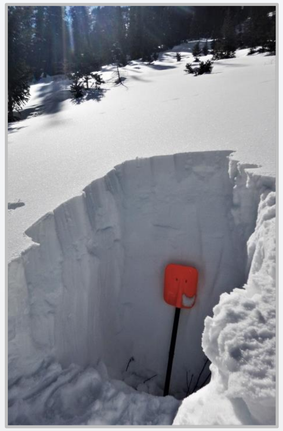


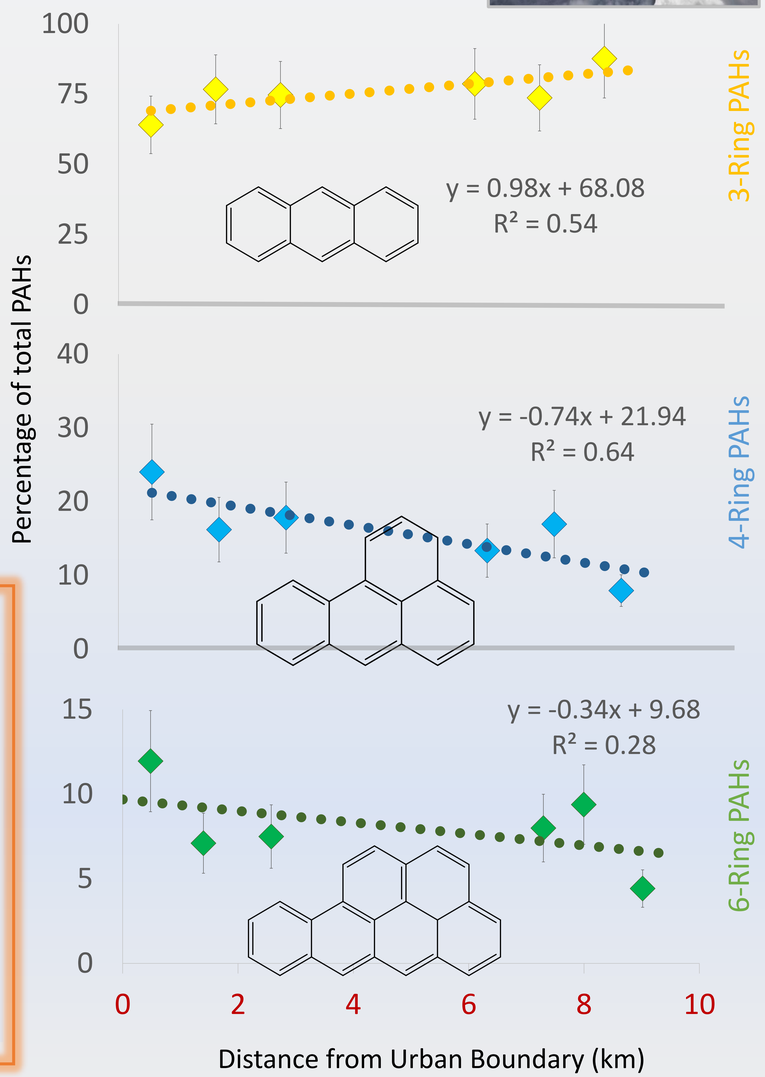
## Results

- Seven PAHs and five of eight total PCBs detected along the transect were found at the furthest site from the urban boundary.
- Deposition of less-chlorinated PCBs decreased along the urban-to-alpine transect
- Deposition of 3-ring PAHs was relatively constant along the urban-to-alpine transect but decreased for 4- and 6-ring PAHs.
- Differences in congener deposition patterns could be attributed to variations in sources and partitioning behaviors.

## Methods

Snowpack samples (~20 L) collected from six sites along West to East transect in Wasatch Range in February and March of 2020. Snow was melted, extracted, and analyzed for 15-PAHs and 8-PCBs via gas chromatography mass spectrometry.



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