



Working Dirt: Community Based Participatory Research on Lead, Gardens, and Place

OVERVIEW

Green infrastructure, including gardens, is at the center of the conversation about a transition to sustainable cities. Urban gardens provide a local source of nutritious food and can help to strengthen community ties. However, there are tradeoffs to gardening in the city, including potential exposure to soil pollutants, such as lead which may have come from paint and gas. Lead in soil is a lesser-known source of human lead exposure than lead-based paint, but contaminated soil can also adversely affect humans, especially children, if accidentally inhaled or ingested. Lead paint was banned for homes in 1978. Older neighborhoods, with the highest soil lead levels, are often the same neighborhoods with limited access to fresh fruits and vegetables.

THE RESEARCH

University of California Agriculture and Natural Resources has funded a collaborative transdisciplinary research program that includes ecologists and social scientists at UC Davis who work in partnership with local non-profit organizations in Sacramento who are working to support healthy, sustainable, and equitable communities by installing raised-bed gardens to improve access to local foods and build community cohesion and empowerment.

The ecologists have tested soil lead at more than 75 yards in three older, low-income neighborhoods in north and south Sacramento using handheld X-ray fluorescence. Now they are expanding to include all of the City of Sacramento and are actively seeking additional partnerships with regulatory, health, and family service organizations and agencies. The team's social scientists have conducted resident surveys and interviews and facilitated activities that allow residents to tell their stories of place, contamination, and gardening. The researchers and residents are collaboratively evaluating the tradeoffs between ecosystem services such as food provisioning and soil lead exposure.

THE POLICY IMPACT

UC Davis researchers are able to provide to residents soil lead data within 10 days, which is used to determine where to place gardens and manage lead hazards in other areas of the yard. Researchers also deliver residents detailed maps of their property in person so that they can answer any questions and provide a list of low-cost strategies to mitigate high levels of lead.

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Data collected on yards will be used to make predictions at the scale of the city, helping to identify the role that landscape plays in the distribution of lead. Community-based research on lead, gardens, and place has strengthened relationships between UC Davis researchers, local non-profits, and community gardeners, together identifying ecosystem services that the community values and would like to manage for advancing the ultimate goal of healthy urban gardening.

LESSONS LEARNED

This project is still in process. It remains to be seen whether the team's work will translate to large-scale policy change. However, by including residents each step of the way, they can be sure that the data will be in the hands of those who have the most to gain immediately from the knowledge.

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