Soil Organic Carbon Stocks are Larger than Expected in Urban Ecosystems

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Project Title:

This case study highlights a 2012 NUCFAC-recommended USDA Forest Service grant, ***Carbon Sequestration and Resiliency of the Urban Forest***

Partners:

The Morton Arboretum, USTEP Program Chicago State University, ISA Urban Tree Growth & Longevity Working Group, Chicago Wilderness, Midwest Ecological Landscape Association, USDA Forest Service, Ohio Department of Natural Resources, City of Chicago, Chicago State University, Northern Illinois University, Bartlett Tree Experts

PROJECT GOAL

To increase understanding of urban forest resilience and urban soil carbon dynamics.

PROJECT OVERVIEW:

Currently, stakeholders lack a comprehensive understanding of carbon storage in urban ecosystems, resilience of urban forests to projected climatic fluctuations, and variation in both across the urban landscape. This project sought to address these knowledge gaps by building upon existing regional-scale data with rigorous analysis of carbon storage in urban soils, trends in urban tree growth, and the development of an urban tree site index. The outcomes of this work provide a more complete understanding of urban ecosystem carbon sequestration and storage potential and the response of urban trees to projected climate change in metropolitan areas.

REACH:

The project reached college students and youth, including 3 graduate and 30 undergraduate students and 30 underserved youth. Promotion of the project's results had the following estimated impact:

1,700 People reached through e-newsletters

700 People reached through presentations[1]

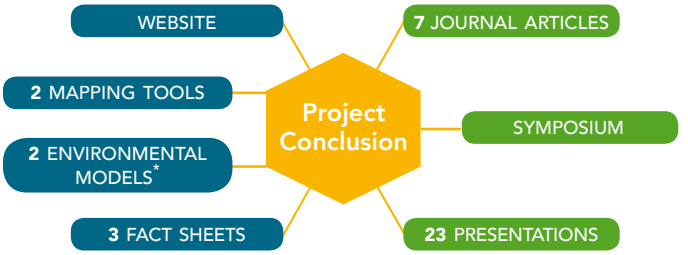
743 People reached through video[2]

10,000 People reached through social media[3]

49,000 People reached through publications

[1] Number of people reached through conferences, workshops, and webinars.
[2] Number of video views- data obtained from YouTube.
[3] Number of Facebook followers.

PROJECT RESULTS & PRODUCTS:



STAKEHOLDER UTILIZATION:

Stakeholders have reported that the project results have supported changes in technology in their agency or organization. The guidelines have also been used by stakeholders in the following activities or resources:

- **Peer-reviewed journal publications**
- **New research project**

CONTINUED PROJECT WORK & FUNDING:

Continued Work on Project

Yes. This project has led to future research questions.

Additional Funding

Yes. TreeFund and Wisconsin Arborist, both non-profit organizations, awarded $86,000 for continued research.

How Additional Funding Furthers Project Outcome

We are addressing research questions brought about by the initial project, including urban soil heterogeneity vs. homogeneity and lead distribution in urban soils.

Credit: Bryant Scharenbroch

LEARN MORE:

Visit **www.chicagourbanforeststudy.org** to learn more about this project.

* Models include the Urban Carbon Storage model and the revised Urban Site Index model.