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Developments at the Crosswalk of Urban Forestry and Climate Change

Description: Photograph of urban tree canopy in Fremont, California (Hancock, 2022).

Managing the urban forest is vital to the health and resilience of our cities in the face of climate change. Over 80% of the United States population resides in urban areas and directly benefits from the ecosystem services urban forests provide, such as heat mitigation, reduced stormwater runoff, carbon sequestration, and wildlife habitat connectivity.

Recent developments to plant and maintain resilient urban forests in the face of climate change include:

- The Northern Institute of Applied Climate Science (NIACS) developed an "Urban Forest Climate and Health Adaptation Menu" as a decision-support tool for urban foresters looking to integrate climate adaptation strategies into their management plans. The menu, which is available as a one-page summary, a full report, or an interactive site, details nine adaptation approaches and accompanying strategies for urban forest management.
- The Urban Forest Ecosystems Institute (UFEI) at California Polytechnic State University, San Luis Obispo has been modeling climate suitability of California's urban tree species by assessing the 114 most common urban tree species and identifying each species' native range. By overlaying the climate conditions of the native ranges with climate data layers for six different climate zones in the state, researchers can identify a "Species Climate Niche." For a current inventory of the state's urban tree species by climate zone, check out UEFI's interactive California Urban Forestry Inventory.
- Publicly available climate tools are being used in the private sphere, too. PlanIt Geo, an urban forestry consulting and software development firm, developed the "Sister Climate City Analysis" method to inform the City of Fremont, California's 2022 Urban Forest Management Plan. Using Cal-Adapt to model current and projected climatic conditions of the city, the firm identified several cities in California that matched Fremont's projected future climate. Those identified cities' urban tree species list informed Fremont's new list.
- Individuals who have USDA access, can watch "May 2023 Adaptation Community of Practice-Adapting Urban Forests to Climate Change" for additional information on Microsoft Stream.

Although urban forests are key to mitigating the impacts of climate change in urban areas, urban trees are also vulnerable to climate change-driven stressors like the increasing frequency and severity of droughts, floods, and heatwaves. Thus, it is increasingly important to consider future conditions and plant trees that will be tolerant to new ranges of temperature, precipitation, and extreme events.