

Urban Orchards and Food Forests in DC:

Mitigating the Effects of Climate Change and Improving Health in
Historically Marginalized Communities of Washington D.C.

Impact of climate change on health in historically marginalized areas of D.C.-Heat Waves

- Heat waves caused by climate change can also exacerbate pediatric asthma in the District. According to an assessment of the “Health Impacts of Urban Heat Island Reduction Strategies” in the District, “heat waves take a disproportionate toll on people of color and low-income urban populations that often live in neighborhoods that have older, lower quality building stock, less tree cover, and fewer buildings with air conditioning.”
https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/20131021_Urban%20Heat%20Island%20Study_FINAL.pdf.
- During such heat waves, older adults are considered to be extremely vulnerable to heat-related death or illness, because they “are more likely to be in poor health, to be less mobile and more isolated, to be more sensitive to high heat, and to live on reduced incomes”. <https://www.epa.gov/heatislands/climate-change-and-heat-islands#ref3>.
- Additionally, children are at high risk of heat-related illness during heat waves because their “more rapid breathing rates relative to body size, time spent outdoors, and their developing respiratory systems raise their chances of aggravated asthma and other lung diseases caused by ozone air pollution and smog, which usually increases during heat waves”. <https://www.epa.gov/heatislands/climate-change-and-heat-islands#ref3>.

Impact of climate change on health in historically marginalized areas of D.C.- Air Quality

- Pediatric asthma rates within the District disproportionately affect kids of color living in Southeast D.C. (Ward 8) The most recent national survey of childhood asthma reported a prevalence of child lifetime asthma in Washington D.C. of 16.4%, compared to a lesser prevalence of 11.4% nationwide. https://www.cdc.gov/asthma/most_recent_data_states.htm
- Among children living in the District, child lifetime asthma is the least prevalent among White children (6.5%), over twice as prevalent among non-Black children of color (15.2%), and nearly four times as prevalent among Black children at (23%). <https://www.cdc.gov/asthma/brfss/2018/child/tableL4.html>
- Disparities in pediatric asthma also persist geographically, where “emergency room visit rates for asthma among children living in Southeast D.C.’s most disadvantaged zip codes are much greater than in Northwest D.C.’s more advantaged ones.” <https://childrensnational.org/-/media/cnhs-site/files/departments/impactdc/impact-dc-annual-report.pdf?la=en&hash=551FF967C204E4170206C19C4B222FDA9458232D>

Health and nutrition in historically marginalized areas of D.C.

- According to local NGO 'The Green Scheme', 80% of the 'food deserts' are located in wards 7 & 8., with a ratio of one supermarket per 51,470 residents <http://www.greenscheme.org/what-we-do/where-we-work/>.
- The unavailability and/or unaffordability of fresh produce has contributed to higher rates of morbidity than elsewhere in the city, with 'obesity rates in wards 7 & 8 being the highest in the district (35.3 and 44.4 percent respectively) and residents are the least likely to consume the recommended service of fruits and vegetables'. Community Needs Health Assessment, D.C. Department of Health <https://ourhealthydc.org/dc-chna/>
- As of June 28, 2020, ward 8 has the 3rd highest rate of COVID-19 positive cases and ward 7 followed with the 4th highest rate in the district. www.coronavirus.dc.gov It is widely acknowledged that nutrition has a vital role to play in reducing morbidity and mortality associated with COVID-19 infection, with regular consumption of fresh fruits and vegetables a key component of maintaining strong immune systems <http://www.emro.who.int/nutrition/nutrition-infocus/nutrition-advice-for-adults-during-the-covid-19-outbreak.html>

Low Income/Low Access (LILA) Areas

FOOD ENVIRONMENT RELATIVE HEALTHY FOOD AVAILABILITY* BY NEIGHBORHOOD GROUP

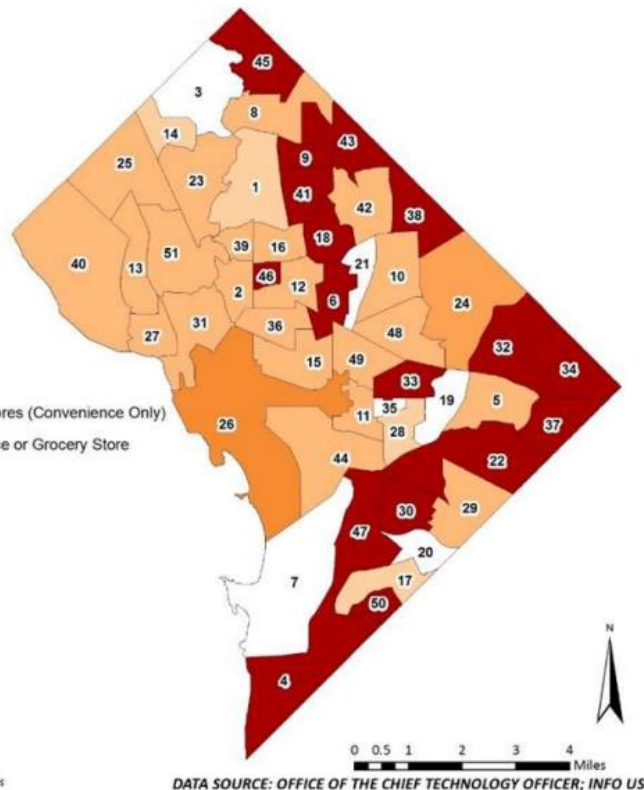


Figure 12.5 Relative Healthy Food Availability By Neighborhood Group

FOOD ENVIRONMENT PERCENTAGE OF ADULTS (18+) WHO ARE OBESE (BMI > 30)

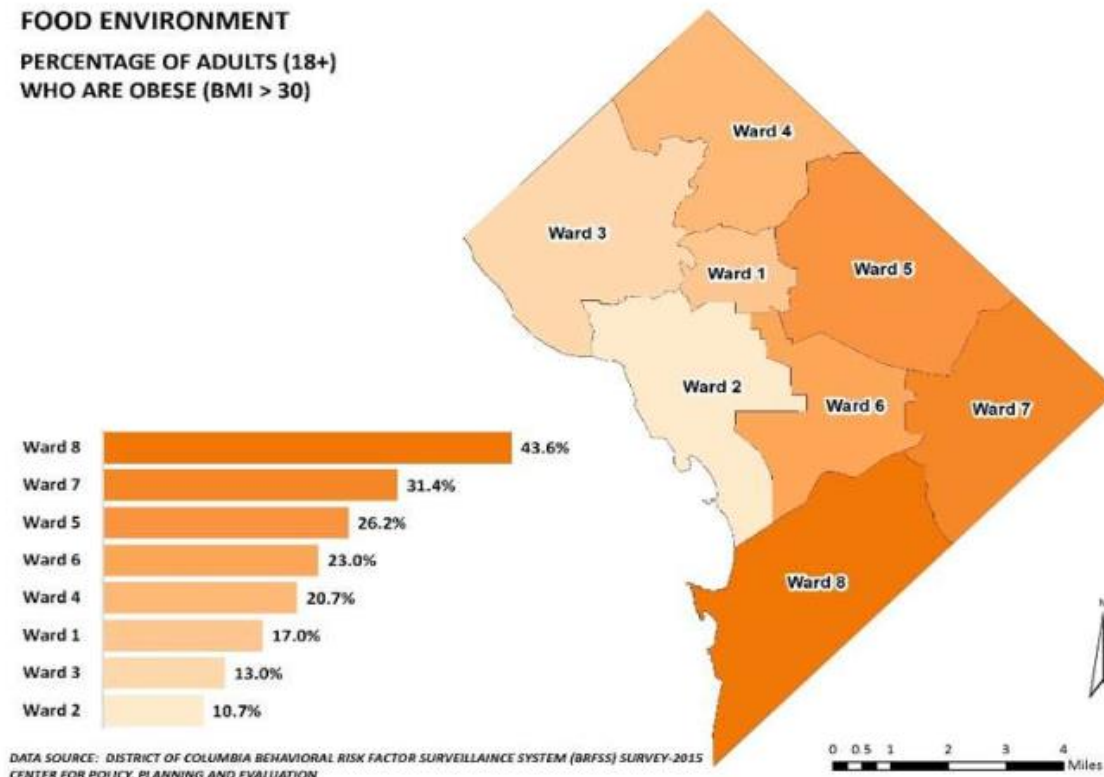


Figure 12.6b: Obese %

The Opportunity: Tree Canopy Restoration Project

- Since 2011, DC has been working restore the tree canopy to 40% by 2032 (currently 38%).
- At least 10,648 trees need to be planted annually to reach this goal (Casey Trees' 2018 Tree Report Card).
- Key players: DDOT, DOEE, Casey Trees
- DDOT (Urban Forestry Division) receives \$11.7 million annually in local capital appropriations for tree canopy expansion (Earl Eutsler, DDOT).
- Some street fruit trees have been planted and urban food forests have been created at public schools in the past few years.
- Can we expand these projects in Wards 5, 7, and 8 to help both communities and the environment?



Municipalities and Urban Orchards-Kansas City, MO.

- ‘On September 28, 2018, Kansas City’s largest urban orchard (located in Kansas City’s largest park) officially opened on with a ribbon cutting ceremony among the fruit trees.
- **KC Parks** Deputy Director Terry Rynard welcomed the crowd and introduced the featured speakers/stakeholders that included 5th District City Councilwoman Alissia Canady, 5th District City Councilman Lee Barnes Jr., Darrian Davis and Jamilla Johnson with the [Kansas City Urban Farm Co-op](#) and [The Giving Grove](#) Executive Director Robert Reiman.’
- Last spring, the organizations teamed up to plant 200 fruit trees—a self-proclaimed “fruit forest” in the heart of the city. The main orchard, located adjacent to the Off-Leash Dog Park, is just over an acre in size and includes fencing for deer protection, waterline with four frost-free hydrants, and a drip irrigation system.
- Once all phases are complete, the Swope Park Orchard will be one of the largest urban orchards in the country yielding more than 1 million pounds of fresh fruit over the next 20 years.’ <https://kcparks.org/urban-orchard-opens-swope-park/>

Civil society partners: The Giving Grove

- Establishes small community-run orchards in food insecure areas of urban centers (currently operates in Kansas City, MO.; St. Louis, MO.; Omaha, NE.; Memphis, TN.; Louisville, KY.; and Cincinnati, OH.)
- An average urban orchard of 15 trees does the following:
 - Generates produce valued at \$9,775 annually (The Giving Grove)
 - Sequester 2.7 tons of carbon dioxide over 25 years
- These orchards have been successful in bringing communities together while providing food to schools and food pantries as well as environmental educational opportunities for students and parents alike. <https://www.givinggrove.org/>

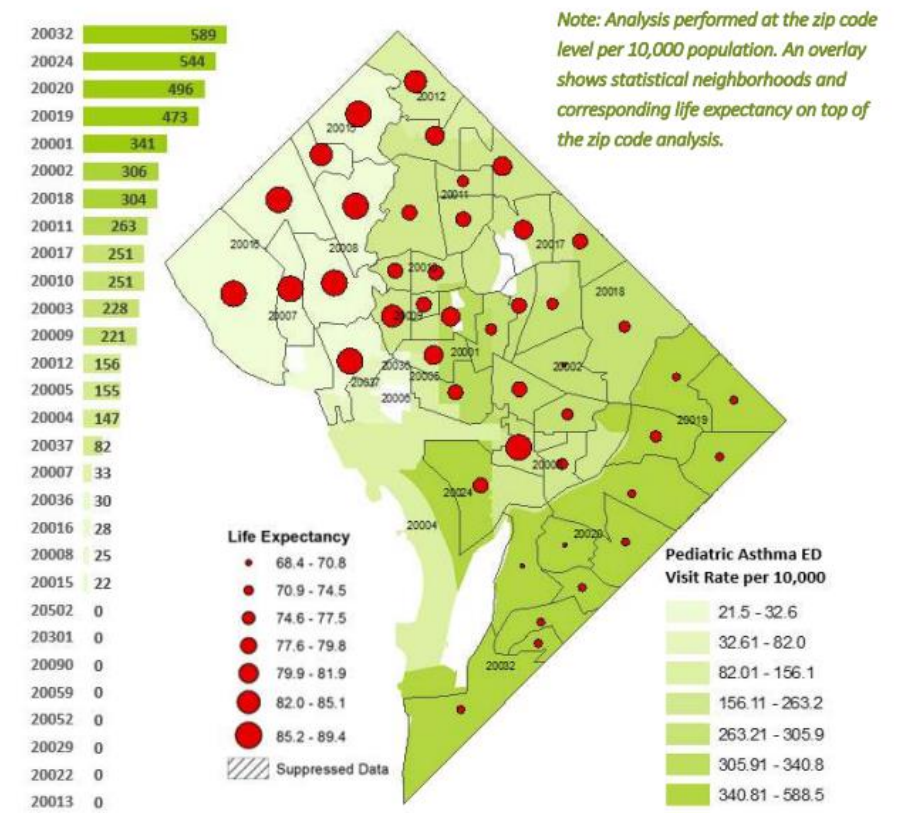
Climate/Air Benefits & Opportunity

- Children in Wards 7 & 8 have the highest reported rates of Asthma in DC.
- Trees can help reduce local air pollution and its adverse health impacts.
 - Trees in DC remove 870,000 pounds of pollutants annually (iTree Ecosystem 2015 Analysis)
- The Urban Heat Island effect will be exacerbated by climate change and can be mitigated by planting trees.
 - The populations most vulnerable to the effects climate change in DC live in Wards 7 & 8 (Health Equity Report: District of Columbia 2018).

OUTDOOR ENVIRONMENT by Zip Code and Life Expectancy

Figure 11: Pediatric (age 2 to 17) Asthma Emergency Room Visits, 2014-2016

RATE PER 10,000 PEDIATRIC (AGE 2-17) ASTHMA EMERGENCY ROOM VISITS



Data Source: Hospital Discharge Data 2014 – 2016, DC Hospital Association

Data Analysis: Center for Policy, Planning and Evaluation, DC Department of Health

Source: Health Equity Report: District of Columbia 2018

Potential Sites for Urban Orchards/Food Forests



- Kingman & Heritage Islands
 - DC is investing \$4.7 million between 2018 and 2024 in education and recreation (Health Equity Report: District of Columbia 2018).
- Anacostia Park
- Vacant sites identified through the Department of Housing and Community Development's Vacant to Vibrant partnership with Casey Trees
 - Potential partnerships with public schools

Thank You!

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