

## Summary Report

UChicago Environmental Research Group  
Community Outreach Team

# Survey of the Access and Distribution of Green Spaces in the Greater Chicago Area

## Background

The Environmental Research Group (ERG) is an undergraduate science and policy think tank devoted to interfacing science and social good to create sustainable change in Chicago through applicable, data-driven modeling. Science can often be void of application to the real world, so the ERG was created to help build the bridge between data-driven solutions and real-world impact. Each year the group focuses on an environmental issue centered in the greater Chicago area, with past projects focused on air pollution and transportation patterns in Chicago in relation to the Covid-19 pandemic. This year's project is focused on greenspace access and distribution in relation to urban environmental policy.

## What is Green Space?

A green space is any undeveloped open piece of land covered in greenery. Open land is defined as space that is available to the public while undeveloped land describes space that is not filled with buildings or any other human development. Greenery can include grass, trees, shrubs, smaller plants, or any other form of vegetation.<sup>1</sup>

The environmental services of green space include decreasing air pollution and mitigating

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<sup>1</sup> <https://www3.epa.gov/region1/eco/uep/openspace.html>

the urban heat island effect, which causes urban spaces to be warmer than their rural surroundings.<sup>2</sup> According to the Environmental Protection Agency, shade from trees can cause surfaces to be up to 45 degrees cooler than those in direct sun.<sup>3</sup> Green space also has a positive impact on physical and mental health, such as reducing blood pressure and diabetes, improving pregnancy outcomes, and increasing sleep duration.<sup>4</sup>

However, in the US, these environmental and health benefits are not accessible to everyone. Increased access is directly correlated to neighborhoods with higher income and education. Wealthier, white neighborhoods have larger green spaces while Black and Latinx communities have limited access. A study in New York City found that “the average park size is 7.9 acres in predominantly Black neighborhoods compared to 29.8 acres in predominantly white neighborhoods, and the former are five times more crowded than the latter.”<sup>5</sup> This disparity is connected to racist housing policies such as redlining. A study by Hoffman, Shandas & Pendleton in 2020 found that “red-lined communities were the hottest neighborhoods in 94 percent of cities, indicating a trickle-down effect of historically racist urban planning policies.”<sup>6</sup>

## Our Project

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<sup>2</sup> <https://www.epa.gov/heatislands/heat-island-compensation>

<sup>3</sup> <https://www.epa.gov/heatislands/using-trees-and-vegetation-reduce-heat-islands>

<sup>4</sup> <https://www.sciencedirect.com/science/article/pii/S0013935118303323?via%3Dihub>

<sup>5</sup> <https://doi.org/10.1016/j.landurbplan.2011.05.002>

<sup>6</sup> <https://doi.org/10.3390/cli8010012>

The ERG's goal this year is to connect with local environmental organizations and city representatives to learn about Chicago green space issues directly from the people who experience them. This project specifically focuses on quantifying the connection between green space, access to green space, and environmental justice issues in Chicago. Previous research has shown that unequal distributions of green space uphold environmental racism. What are possible solutions to the lack of equitable green space distribution in Chicago, and how can local organizations contribute to this change?

To begin exploring these questions, we researched and established relationships with members from local environmental organizations and conducted a series of interviews about each organization's work. We discussed topics such as historical barriers to green space access, current efforts to improve access, and how students can support green space work in Chicago.

## Organizations We Interviewed

### Openlands - Emily Reusswig

*Interviewed by Nyah Luis*

Openlands is one of the oldest metropolitan conservation organizations in the nation. Their goal is to protect natural and open spaces in northeastern Illinois to "ensure cleaner air and water, protect natural habitats and wildlife, and help balance and enrich our lives." In the past, they have expanded access to 55,000 acres of land for parks and created trails such as the Old Plank Road Trail and Burnham Greenway. We are interested in Openlands' work on protecting the natural environment, urban growth, community health, and comprehensive land-use planning.

### Chicago Metropolitan Agency for Planning (CMAP) - Kelsey Pudlock, Brian Daley

*Interviewed by Caroline Hugh and Joseph De Leon*

CMAP is an urban planning agency in northeastern Illinois. Its goal is to "implement strategies that address transportation, housing, economic development, open space, the environment, and other quality-of-life issues."<sup>7</sup> We are interested in CMAP's current Liveability Planning Project that is studying land use and zoning, housing, sustainability, and community development.

### Bay Area Wilderness Training (BAWT) - Zulma Terrones

*Interviewed by Xander Deanhardt*

BAWT is an organization centered in Oakland, California that has a mission to get impoverished Oakland youth into the outdoors so they can experience nature. Rather than operate as a hegemon organization, controlling everything themselves, they make themselves a utility that nature instructors in the area and camping organizations in the area can use. The main two ways they do this are by lending out camping equipment and making field guides that aspiring hike/camping trip leaders can use to learn the skills they need to provide for kids out in the wilderness. While BAWT is not located in Chicago, the head of their organization, Zulma Terrones, studied at the University of Chicago, and is thus knowledgeable about green space in Chicago and what we, as university students, can do to make green space access more equitable. We are interested in BAWT's work on creating equitable access to the outdoors and how the organization allows youth who otherwise wouldn't have access to nature to experience it.

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<sup>7</sup> <https://www.cmap.illinois.gov/about>

## Interviews

The responses below have been edited for clarity and length.

### Why do you think green space is important?

**Openlands Reusswig:** Access to green space is proven to increase health and wellness for residents. In addition, one vital way to fight climate change is through nature-based solutions. Increasing green space provides habitat for wildlife, purifies air and water.

**CMAP Pudlock:** Green space is important for communities because it provides an area for people to recreate. It also offers a different spot for people to go and just enjoy the outdoors. And you can take it from a mental perspective too, just having a place to transition. It's also important because it connects people to the environment at large and provides a different lens for people to understand the importance of open space and what it can provide.

**CMAP Daley:** There are a lot of different benefits to green space that are common to any kind of open space as far as being a shared civic space where people can gather. It offers place-making, to make a neighborhood or a community feel special and interesting. The recreational opportunities and the implications that that has for public health are really important. Also, the natural resources that green space provides can be really crucial as far as allowing water filtration and helping with stormwater. Having trees and other kinds of green infrastructure can help with air quality and water quality.

**BAWT Terrones:** Green space provides an easy, accessible way for communities to tap into the holistic health benefits of nature. In studies, signs have shown that even small parks, whether

you're surrounded by concrete, even with a small green space will make a huge impact.

### What projects is your organization currently working on that relate to green space?

**CMAP Pudlock:** CMAP supports a handful of other organizations within the region that have open space as more of a primary focus. Whether that be through strategies for acquisition or enhancing them in some fashion, so we do provide some work on that front.

**CMAP Daley:** CMAP does a pretty wide variety of projects, and many of them touch on land use in one way or another. That's often the main way we are working on green space. We have a local technical assistance program where we have an annual call for projects where individual communities or groups of communities can apply for planning assistance from CMAP. That can be working with communities on changes to their zoning code or doing a comprehensive plan or a neighborhood plan for their community. We often have goals of improving existing open space or potentially expanding open space, so those projects are one way that we do that. We provide datasets to track how access to park space is distributed across the region. People can get a sense of how their community compares to other communities in the region as far as how much park space there is relative to their population and population density and how far people have to go to access green space. So, providing data like that is another way that we do it.

**BAWT Terrones:** Historically BAWT has been focused on backpacking and front country hiking opportunities, so not very accessible green spaces. This year I'm hoping to launch workshops that are tapping into local parks, local green spaces, even gardening outside your

own backyard in front of your patio, like how to tap into these green spaces that are accessible in your neighborhood.

### **Do you have any educational programs related to green space / environment?**

**Openlands Reusswig:** We have three school programs: Birds in My Neighborhood, Space to Grow, and Building School Gardens.

**BAWT Terrones:** Most of the educational programs that we have are training for adults as either teachers or nonprofit leaders for them to take their own youth outdoors and to be able to facilitate an outdoor curriculum. These workshops that we are trying to launch this year are going to be more skills based more for consumers and the community itself directly.

### **In the past, what have been some barriers to green space access in your neighborhood and in Chicago as a whole?**

**CMAP Daley:** One of the main barriers is that much of our region is already developed, so there have already been land use decisions that have been made. There has been natural and agricultural land that's already been developed, and it's a very different approach in green space. It's a very different question when you're talking about preserving existing green space versus potentially introducing new green spaces into developed areas. Certainly in the city of Chicago, but in much of our region, there's an amount of green space that's been preserved, and creating more means converting other land uses into open space. The City of Chicago has been trying to acquire vacant lots to turn into pocket parks, but it's an expensive process acquiring land, whether it's a park district, a municipal government, or a forest preserve district. Acquiring land is often one of the most expensive parts of creating open space.

Competing interests for how land would be used is another barrier. If a community has a choice between creating a park which doesn't generate any tax revenue, or using that land for development, which does potentially create revenue that can be used for other purposes, that's often a political barrier as well.

**CMAP Pudlock:** On similar lines, managing open space—whether it be a municipal park or a county forest preserve—takes a lot of restoration or just ongoing maintenance to the land that is underfunded oftentimes and is difficult to essentially fund at the level that it's needed to keep them in high quality conditions. That is certainly a barrier at all levels.

**Openlands Reusswig:** People are bullied by neighbors who don't want trees in their neighborhood. They think trees are breaking their water pipes which is untrue, or they think a tree will destroy their home. Miseducation overall. Our region is the most geopolitically complicated perhaps in the nation. There are so many units of government. We address this by creating region and county plans to help the multiple government agencies work together to connect a web of green and blue.

### **What are steps you think should be taken right now to make green space access more equitable in your neighborhood and Chicago as a whole?**

**CMAP Pudlock:** If management of the existing open space can be funded more sustainably, meaning that there is an adequate amount of funding that gets put towards maintenance, it would be a big step towards improving open space. In areas like the City of Chicago, where there's a lot of interest in open space along river fronts at the moment there's equitable access. You can provide the open space, but ensuring that there's access to it from all angles, and for particular communities, and making sure that

there are safe connections is another strategy that can happen.

**CMAP Daley:** The funding question is a big one and in light of the kind of resource constraints that governments face, something we advocate for is being really strategic about open space acquisition. You can be strategic about that in different ways, and certainly one way is saying, “OK, well, where would more green space be especially beneficial for flood prevention? Or for preserving certain key wildlife habitats?” You can also include equity as part of your strategy and look at how other neighborhoods compare. Should we focus our resources in this underserved area versus an area that's already pretty rich with green space? Being really clear minded about what it is you're trying to accomplish and making sure that equity is part of that when you set up your criteria is really important. Access is the other thing: if you have green space but there aren't bike trails or sidewalks that lead to it, installing things like that can be a way to connect more people to existing parks as well as to new parks.

**BAWT Terrones:** Creating more transportation opportunities. That's the one thing, at least within this organization, that I get a lot of feedback on is finding ways not just to find accessible green spaces, but also to provide transport to these green spaces. A lot of people want to be outdoors but they just don't find the actual infrastructure for that.

### Who should be responsible for making these decisions and implementing them?

**Openlands Reusswig:** Communities should be making these decisions with elected officials.

**BAWT Terrones:** People in power, whether that's organizational leaders, politicians, a government. Basically people that are creating systems, people that are creating policies and laws, making sure that we are doing it with an intersectional intentional lens.

### What can we as students do to help support green space work in Chicago?

**Openlands Reusswig:** Volunteer with Openlands or another environmental organization. Develop a relationship and talk to your elected officials. Plant native if you can, educate those around you on the benefits of nature and green space.

**BAWT Terrones:** As a whole, the university has a lot of good intentions, a lot of heart. So being able to tap into that, being able to make actionable steps and ties to the local community, that's one area or one blind spot, at least at my time there it was. The university was growing and had a lot of good initiatives, but a lot of the time they weren't trying to collaborate with the local community. So right now I'm trying to figure out ways to be able to tap into local resources, local partnerships and make actionable steps. There's a lot of technology and resources that students have at their fingertips. You know whether that's social media or the Internet. Being able to harness the power of all of you will be key.

### Through what lens do you approach green space issues?

**BAWT Terrones:** I really try to approach it from an intersectional lens. My background is so diverse and I always bring that to whatever I'm kind of working on. I really try to spring the perspective from local communities, but also from a science perspective. So where's the data? What is the sign showing and again integrating

with? What does the community need? What are their voices saying and where do we want to be in like 5 to 6 years from now?

### **Are you or have you collaborated with other community organizations on your projects?**

**BAWT Terrones:** We partner a lot with local organizations. Our biggest partnership right now is with the Oakland Unified School District and we're currently partnering with them for a program called Oakland Goes Outdoors. Currently, we're only targeting middle school, but this year, we'll be expanding into high schoolers and down from pre-k to 8th grade. The goal of Oakland Goes Outdoors is really to make sure that each and every student in the school district has the opportunity to go on at least a hiking day trip. Ideally, an overnight camping trip.

### **Openlands-Specific Questions**

#### **How has your organization been involved in green space issues in the past?**

Anywhere from protecting land to restoring it, planting thousands of trees and connecting millions to nature in the region. We have stopped destructive roads like the Illiana and Peotone airport that would have destroyed Midewin National Tallgrass Prairie and family farms near it. We just passed the Urban Forestry Advisory Board. Currently we are advocating for a Civilian Climate Corps on a national level.

### **CMAP-Specific Questions**

#### **What are some of the unique benefits and drawbacks of dealing with such a large land area?**

**CMAP Pudlock:** I would say that CMAP's geography is 7 counties, and we are primarily

focused on transportation and land use decisions. Thinking about transportation networks, they often span more than one community, so being able to evaluate these systems at a large scale is really beneficial to everyone that is using it and finds it as a resource. A challenge is that everyone is within their own bubble, so it can be a challenge bringing everyone together and thinking about things at a regional and in a more systematic or system-wide scale.

**CMAP Daley:** It's definitely a challenge. We're a 7 county region. We have 284 municipalities and then on top of that, we often have other park districts or forest preserve districts that are their own separate unit of government. Coordinating among all those factors is really challenging, and the political boundaries of those districts do not always align with boundaries like watersheds and things like that, so trying to navigate the differences between our political boundaries and the boundaries that would make sense if we were doing environmental planning is one thing that we have to grapple with. But being able to work at all these different scales is a really good opportunity for us to connect partners with resources that they may not have been aware of. We can be working with a really small municipality somewhere in a rural area, 50 miles outside Chicago; they may not be fully aware of some of the funding opportunities that would be available to them from the state of Illinois or from their county, so we're able, hopefully, to help connect them with the resources that can help them accomplish their open space goals.

#### **How does the City of Chicago affect the surrounding land area, especially when it comes to environmental issues?**

**CMAP Pudlock:** Within CMAP and the 284 communities, the City of Chicago is certainly the largest, and the area is fairly developed, so there are definitely some challenges there.

Often, given their focal point within the region, a lot of other municipalities can look to them as an example of how they go about managing their open spaces and really looking to them as a resource. That's one way that this city is certainly influential to the larger region. Also thinking about different types of open space, they have the most as far as the lakefront goes and the shoreline. That is a resource that is available to all of the region, so it's really important for them to manage it and think about that regional connection.

**CMAP Daley:** You can think of it in a couple different ways. One is what the influence that the City of Chicago government has on the region, which is profound. It's a huge city, they're making huge investments. It's also in some ways a city that has really landmark achievements with open space in terms of public access to the lakefront, things like that. Beyond what the city government is doing, there's also, "What does the civic entity the City of Chicago offer?" That includes all of the philanthropic foundations that are based here that might be investing in open space in communities. It's all of the nonprofits and the big universities that are doing research. Being located near the City of Chicago can be a huge resource for some of these other communities because there's so much going on here, and there's so much that they can tap into. One of our goals as a regional agency is making sure that there are those connections between the region and the city itself, not just the government, but also this whole kind of civic ecosystem—that those are operating as robustly as they can.

**What aspects of your ONTO2050 plan as it relates to green space and public access are the most crucial?**

**CMAP Pudlock:** As far as park access or the region's access to parks within a walking distance, we have currently 40% of the region

able to do so. By 2050, the goal is to get it to over 60%. The strategies that can help us get there really hit on the connection components, access, and making sure that people can get to it through transportation, transit, public transit options, but we can improve sidewalks so that people can get to it from their own neighborhoods. Again, acquisition as far as ensuring that there is even open space *to* access depending upon where you're living. Those would be the two things to start with.

**CMAP Daley:** It's pretty hard to pick any one component, but throughout the ONTO2050 process, it was pretty clear that the equity components (or inclusive growth, as they were called in the plan) really stood out. The really big gap between communities that had access to not just open space, but to jobs, to transportation, to public resources, and those that didn't have as much access, was something that was going to be really, really important for the region to address between now and 2050. The imbalance between park access and wealthy neighborhoods and communities versus disinvested communities is probably what I would pinpoint.

*This report was compiled by Diya Gandhi, Olivia Cheung, and Xander Deanhardt.*