

# Funding the Care of Urban Forested Natural Areas

Trends and Case Studies from Across the U.S.



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**COVER**

Forest restoration work in Forest Park, Queens,  
New York

**BACK COVER**

Volunteers planting trees in Forest Park, Queens

**The Natural Areas Conservancy** champions urban natural areas in New York City and across the nation through innovative research, partnerships, and advocacy. We increase the health and resilience of urban forests and wetlands, catalyze connections between people and nature, and strengthen the environmental workforce.

Created in 2012, the Natural Areas Conservancy is a nonprofit organization devoted to restoring and conserving New York City's 20,000 acres of forests and wetlands in close partnership with the New York City Department of Parks and Recreation. In 2018, the Natural Areas Conservancy released NYC's first ever *Forest Management Framework for New York City*. Informed by extensive research, the framework is a 25-year roadmap for the management of NYC's forested natural areas.

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# Executive Summary

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This report presents a comprehensive overview of the challenges, benefits, and potential funding sources for urban forested natural areas in the United States. It emphasizes the critical need to diversify funding sources for these underfunded areas, which are distinct from other urban green spaces due to their size, biodiversity, and species composition.

The report stresses the significant benefits provided by forested natural areas, including their cooling effect on the surrounding landscape, critical habitat for native plants and animals, and their role in mitigating the impacts of climate change by absorbing carbon dioxide and stormwater. Additionally, these areas offer access to urban nature, contributing to public health and social infrastructure. However, urban forested natural areas face numerous challenges, such as limited legal protection, ecological degradation, and lack of management, leading to a decline in their health and accessibility.

The report gives an overview of current and potential funding sources, including municipal funding, state and federal funding, private funding, and innovative funding sources. Each chapter highlights some of the current streams of funding available in each of these categories and explores some of the challenges that exist for each as well as opportunities. Each chapter presents several case studies to provide examples of successful funding initiatives that can be used as inspiration for cities looking to expand the resources available for forested natural areas.

In conclusion, the report underscores the urgent need to secure funding for urban forested natural areas, calling for a paradigm shift in recognizing the value of these spaces and advocating for increased financial support from untapped sources. It also emphasizes the importance of fostering partnerships, amplifying community voices, and advocating for sustainable policies to ensure the preservation and accessibility of natural areas for generations to come. The report's analysis and recommendations shed light on the critical importance of securing funding to safeguard the health and resilience of urban forested natural areas for the well-being of communities and vitality of our cities.

# Introduction

This report is written to empower forested natural areas practitioners, researchers, and decision makers to diversify funding sources. This is necessary because urban forested natural areas are a critical but underfunded class of urban green infrastructure.

Across the United States, there are more than one million acres of forests embedded in urban landscapes. “Forested natural areas” are distinct from other parts of the urban forest, like street and park trees, in terms of size, biodiversity, species composition, and how they’re managed. These spaces look and feel like the woods, and support plant and animal communities from the soil underfoot to the leaves in the top of the forest canopy.

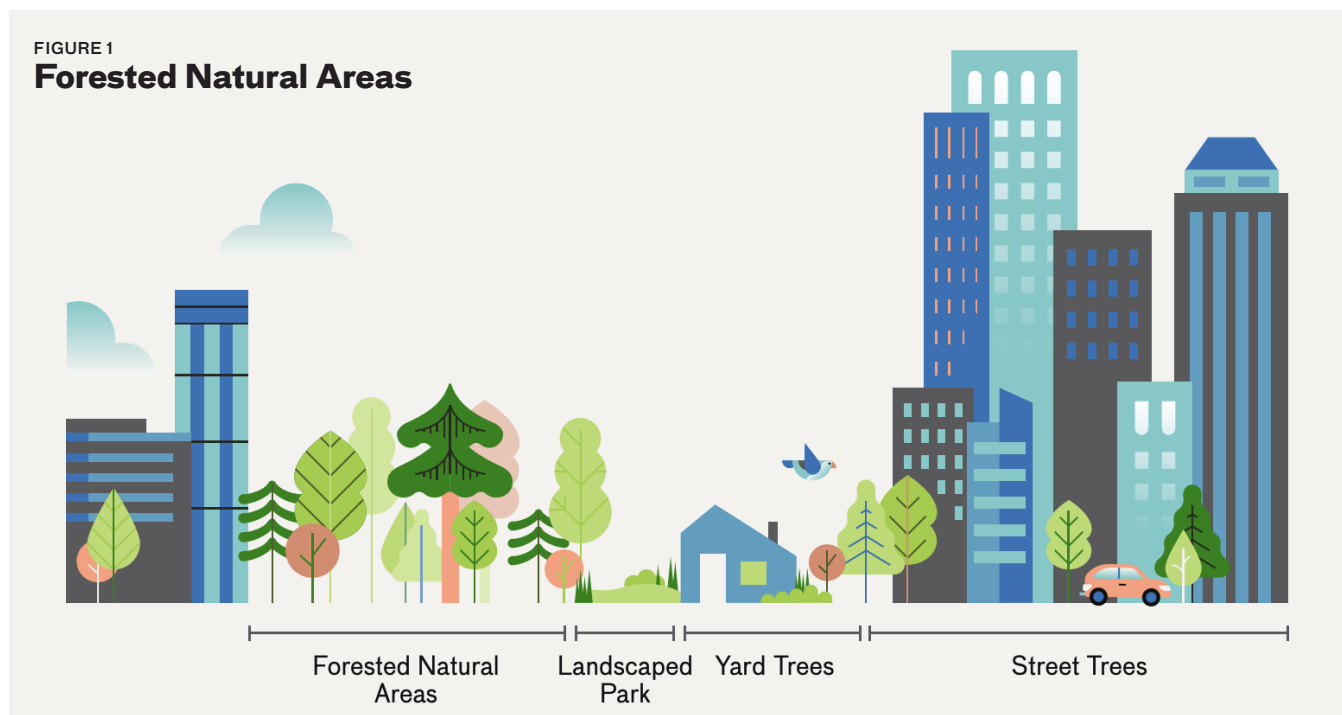
## The Benefits of Urban Forested Natural Areas

All trees are beneficial to urban residents, but forested natural areas can provide some benefits at higher rates than other parts of the urban forest. These spaces can have a greater cooling effect on the surrounding landscape than designed greenspaces, the effect increasing with size (Jaganmohan et al., 2016); they provide critical habitat for native plants and animals, safeguarding biodiversity in a fragmented landscape (Ives and Kelly, 2016); they also mitigate the impacts of climate change by absorbing carbon dioxide from the air and storing it in the leaves and wood and absorbing stormwater.



Urban forested natural areas also provide access to urban nature, which is especially important for low-income individuals, who are less able to travel to experience nature outside of cities. They provide places for people to run, walk, bike, hike, socialize, and relax. In this way, forested natural areas function as critical pieces of the city’s social infrastructure and contribute meaningful

public health and environmental benefits to city residents. Just as other forms of infrastructure, like cultural centers, bridges, or sidewalks, need regular maintenance, these critical urban greenspaces require formal protection and long-term investment to thrive.



## The Need for Protection and Management

Urban forested natural areas are complex ecosystems that have limited legal protection from development and as a result, face multiple and magnified stressors which are amplified in the urban context. Challenges include impacts of climate change, human impacts, dumping of trash, fires, invasive species, and deer browse. These factors decrease both the quality of visitor experience and the health of the forests themselves.

Furthermore, anecdotal evidence from practitioners in this field show that there is an often-held misconception that nature “cares for itself”; however, we know this to be untrue in the urban context. To ensure healthy, high-functioning, and accessible urban nature requires long-term planning, care, and, above all, investment. Without investment, the wait-and-see approach will lead to further decline and degradation of this vital resource.

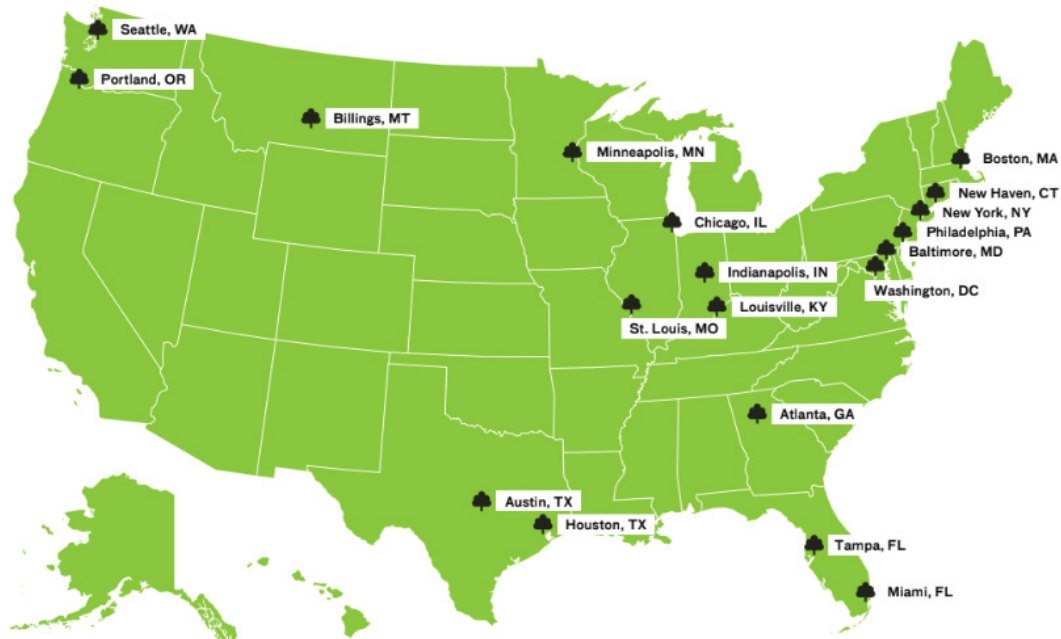
One key pathway in the literature that deserves note is the connection between patterns of park funding and environmental justice and equity (Rigolon, 2016; Rigolon et al., 2018). A multi-city study by Joassart-Marcell (2010) shows that park acreage and quality are inequitably distributed: “low socioeconomic and ethnic minority people have access to fewer acres of parks, fewer acres of parks per person, and to parks with lower quality, maintenance, and safety than more privileged people.” These findings are critical

to consider when assessing current funding for urban green space and when targeting new funding for forested natural areas care and protection. As one of the few ways for low-income people to experience high-quality nature in cities, and as a chronically underfunded part of municipal park systems, forested natural areas can potentially benefit from the recent (and long overdue) national interest in environmental justice and social equity.

## Leveraging a National Network to Contextualize Funding

In the following pages, we highlight potential sources of funding to support forested natural areas protection and management and offer several case studies sourced from the Forests in Cities network to illustrate replicable methods of how cities across the U.S. have secured and utilized such funding. The Natural Areas Conservancy’s Forests in Cities Network was created in 2019 to promote and advance healthy forested natural areas in cities across America through science, management, partnerships, and communications. It is composed of teams of forest practitioners and advocates from 19 metro regions across the United States. This network aims to nurture and grow a national network of experts, advance urban forest science and practice, and advocate for increased resources and support. The data and case studies provided in this report reflect the membership of the Forests in Cities network as well as a handful of other cities.

**FIGURE 2**  
**Forests in Cities Network**









# The Challenge of Funding the Care of Forested Natural Areas

Despite their significant value, urban forested natural areas are the least funded category of greenspace in many cities. In New York City, the New York City Department of Parks & Recreation (NYC Parks) receives less than 1% of the city budget annually, and natural areas only 1% of that dividend, despite comprising 33% of city parkland. This represents an average investment of only \$548 per acre annually (Forgione et al., 2023). The vital work of restoring, maintaining, acquiring, and protecting forests requires dedicated funding for trained staff and materials; however, forested natural areas are consistently underfunded and not able to perform these functions. A 2019 survey of eleven U.S. cities found that less than 4% of municipal park budgets on average are dedicated to the care of natural areas, despite these spaces often making up a majority of parkland in a given city.

While little research exists on the reason why these spaces are underfunded, several assumptions can be made based on experiences and anecdotal evidence:

- 1. Both the public and private sector consistently prefer (or are able) to fund one-time tree planting rather than long-term maintenance. Activities including invasive species management, trail maintenance, monitoring, and trash and debris removal require dedicated, long-term funding that is difficult to secure.**
- 2. Urban forests are often mistakenly believed to be self-maintaining entities. Forested natural areas are threatened by climate change and fragmentation, which disrupts the natural process of native forest regeneration. They require sustained investment to provide social and environmental benefits.**
- 3. Natural areas are not perceived to be essential public infrastructure: in comparison to transportation, sanitation, and water management, green space budgets are more likely to be cut and are slower to rebound during periods of financial stress.**

Forested natural areas require protection and management to ensure continued provision of social and ecosystem benefits. According to a survey of over 100 organizations that manage forested natural areas across the U.S., the five management activities conducted by over 80% of surveyed organizations are: removing invasive understory species, removing trash or debris, formalizing trails, managing tree canopy, and planting tree seedlings (Pregitzer et al., 2019).

## Opportunities and Challenges for Managing Forested Natural Areas According to 2021 Survey

- *The top organizational challenge is limited funding or staff. 94% of respondents listed resource constraints such as limited funding and staff as important or very important.*
- *The organizations that manage urban forested natural areas need more engaging and powerful ways to communicate the value of their work.*
- *Non-governmental organizations play an important role in monitoring the health and change over time in forests. This may be because there is little public funding available for monitoring.*
- *Public-private partnerships can provide accountability and insight into the effectiveness of municipal management efforts.*
- *The federal government is not a common partner for monitoring or management.*

Unfortunately, most organizations caring for these spaces report that there is a lack of public awareness that forested natural areas exist in their city (Pregitzer, et.al, 2019), and an even lower awareness that forested natural areas require management. Additionally, development and competing land use pose a significant threat to forested natural areas. Over a period of five years (2014–2019), natural area parkland in the 100 largest U.S. cities decreased by 4%, or nearly 38,000 acres (Pregitzer et al., 2021). With limited formal protection, it is possible that continued urban development will gradually chip away at the remaining natural areas within cities. Ultimately, this could reduce the ecosystem services and social benefits natural areas can provide to city residents, while potentially increasing costs related to climate change impacts, heat, and stormwater for cities.

## Case Study

# The Challenge of Funding Management in Houston, TX

Private funding for tree planting has increased in the past decade, driven by corporate Environmental, Social, and Governance (ESG) commitments. This funding has met a demand fueled by ambitious tree canopy goals and efforts to combat climate change and extreme heat through the planting of trees.

The enthusiastic investment in planting has not been accompanied by a similar investment in the care of trees and forests. Tree planting is a tangible action and has clear follow-on benefits that can be estimated using tools like i-Tree or monetized through the creation of carbon credits. Management of natural areas, on the other hand, is less visible and harder to characterize. Some education is needed before a funder can become enthusiastic about invasive species removal or trail formalization. An example from Houston, Texas demonstrates that tree planting in urban natural areas is still a preferred and primary focus for private sector funding.

The Texas State Forestry Service developed a flexible program called the Corporate Sustainability Partnership that connects corporate funding to projects that maximize targeted ecosystem services. One such project, funded by a \$53,000 donation and a donation of 7,100 trees, restored a riparian area along Cypress Creek in Houston. This site, which is a source water tributary for the drinking water reservoir at Lake Houston, was selected through coordination with the Houston-Galveston Area Council and the City of Houston Drinking Water Operations.

Using i-Tree, the Texas A&M Forest Service quantified the benefits of restoring this natural area to their funders, which included Arca Continental, a Coca Cola bottling company, and Aramco Oil and Gas. By providing funders this hard data, such as the number of gallons of stormwater intercepted, the Texas A&M Forest Service produced unique reports that counted towards the companies' corporate social responsibility goals. This project, and all others under this corporate sponsorship model, also include two-year maintenance requirements. These maintenance requirements can be satisfied by local partners.

The region's pre-existing watershed protection plan, which calls for increased riparian buffer vegetation, is a big strength of the Houston CSP planting. The Texas A&M Forest Service has a portfolio of shovel-ready projects that enables corporations to choose which projects best align with their goals. This flexible approach provides a win-win scenario for the corporations, who have sustainability goals they must meet, and the land managers that are seeking additional funding for restoration projects.

The Texas A&M Forest Service is exploring the possibility of applying this model to natural areas maintenance or management, but emphasized that planting projects were the highest priority for funders. Currently, this program is funding only tree-planting projects in natural areas.

### Lessons Learned

- *Data quantifying the benefits of landscape restoration allow funders to understand the impacts of their investments and choose projects and align with their goals.*
- *Tree planting projects are still most appealing to funders, while it is much harder to raise funds for long-term maintenance.*
- *More data on the positive impacts of urban forest landscape management is needed to help make the case for funding management to private funders and other grantmakers.*

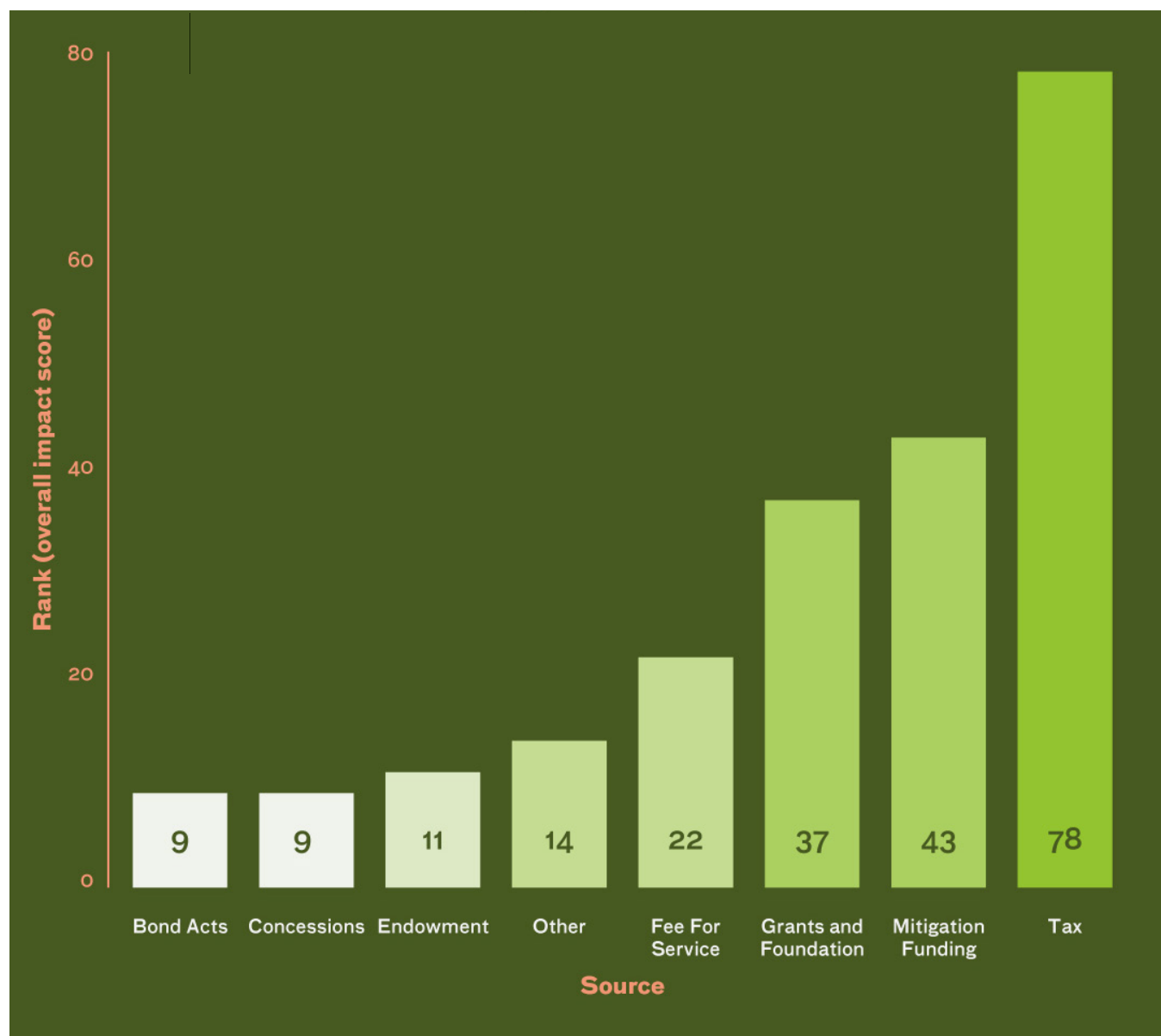


# Funding Sources for Urban Forested Natural Areas

There are many resources that describe funding pathways for urban parks and green space, but few address urban natural areas specifically. To fill this knowledge gap, the authors conducted a survey of the Forests in Cities network (Plitt et al., 2023), to learn about current sources of funding, to discover what current strategies are being used to support the conservation and management of forested natural areas, and to identify opportunities for new funding strategies.

The following chapters build upon this existing research and explore some of the major funding sources for forested natural areas management as identified by the Forests in Cities Network, including Municipal Funding, State & Federal Funding, Private Funding, and Innovative Funding Sources.

FIGURE 3  
**Funding Sources for Urban Forested Natural Areas**





# Municipal Funding

In most cities, municipal funding is the primary source of revenue that supports natural areas management. The most common form of municipal funding for public natural areas management comes from a city's general fund, composed mainly from annual property tax revenue. This funding is distributed broadly to cover both capital and operating expenses. There is a structured annual budget process through which the mayor's office and city council members negotiate on how the budget will be allocated.

While government employees are specifically disallowed from advocating for municipal budget allocations, conservancies, non-profit partners, and impassioned community members are often able to make the case for increased funding allocations. We include this generalized timeline of the city budget to help identify strategic moments for natural areas advocacy.

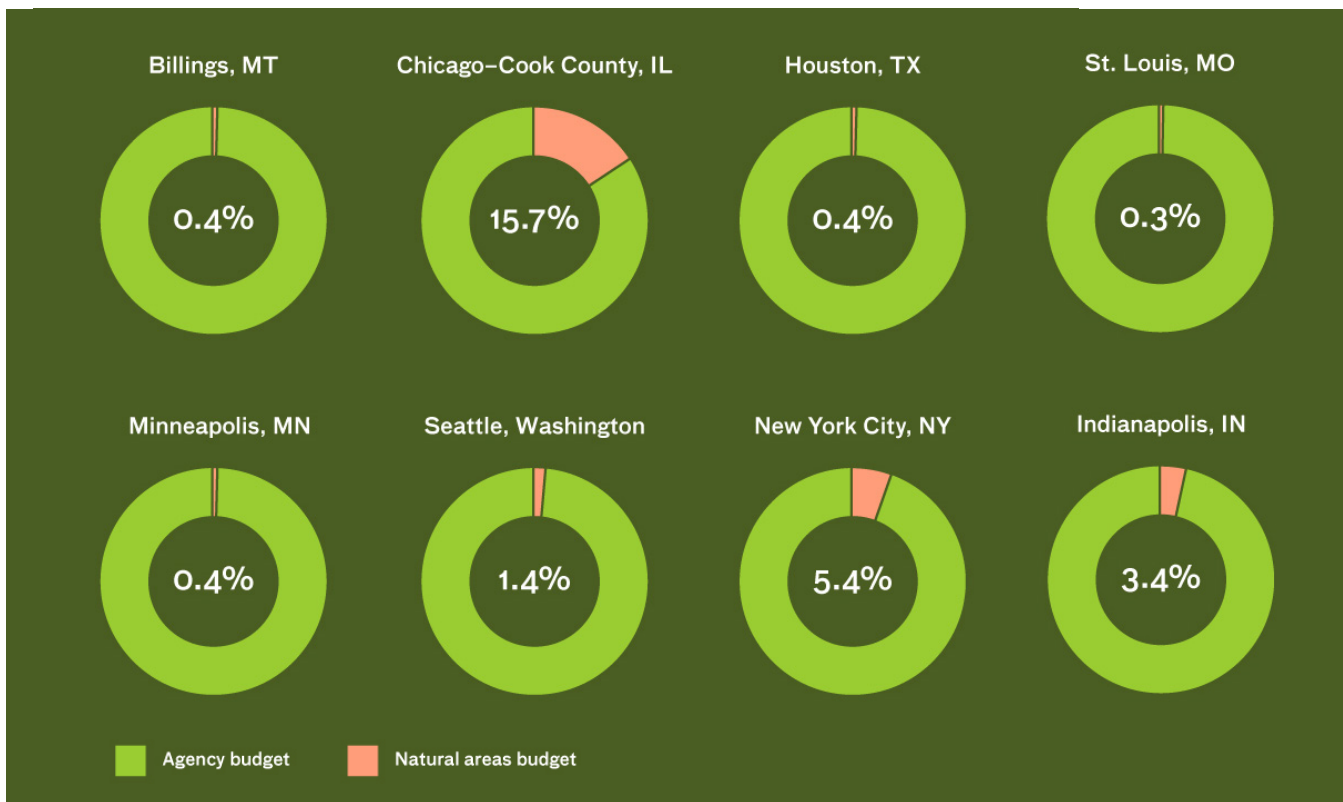
In addition to money allocated from the city budget, some cities can use restitution or mitigation funds to support natural areas acquisition and management. Tree mitigation funds are gathered

as compensation for the removal of a healthy tree, forest, or other natural area, such as wetlands. In most cases, mitigation funds are allocated to traditional tree planting; however, in some cases, cities have been able to appropriate these funds to natural areas programs. For example, in 2016, the City of Atlanta authorized the use of its Tree Trust Fund to purchase high-quality forested land for perpetual protection, and further established criteria for evaluating, prioritizing, and selecting these natural areas for purchase. The first acquisition occurred in 2020, resulting in the protection of Lake Charlotte Nature Preserve, a 216-acre oak-hickory forest, one of the largest remaining mature forests in the city, which was under major threat of industrial development (Evans et. al, 2023).

**Challenges:** Forested natural areas are consistently overlooked and underfunded by the municipal budgeting process. Across the country, parks receive only a fraction of city budgets and of this a small percentage is allocated for natural areas (Plitt, et al., 2023).

FIGURE 4

## Percentage of Parks Budgets Allocated to Natural Areas





As mentioned above, there is little research that explores why natural areas are underfunded at the local level. However, anecdotal evidence and experience suggest that low funding could be related to limited awareness of natural areas by city decision makers. Moreover, parks departments are often competing with critical budget needs such as policing, fire, waste management, public housing programs, etc., which can make it difficult to make a case for the critical maintenance needs of green space.

**Opportunities for growth:**

There are two pathways forward to increase the flow of municipal funds to forested natural areas:

1. *Increase the amount of money allocated in the general municipal budget through advocacy.*
2. *Seek out novel municipal funding mechanisms to augment the city budget.*

The following case studies present examples of both.

FIGURE 5

**Short Changing Forested Natural Areas in NYC**

For an in-depth analysis of funding challenges over time for New York City’s Municipally owned forested natural areas, see *Funding Forested Natural Areas, Recent Trends in New York City* (Forgione et al., 2023).



“Parks and recreation funding can be influenced by local politics, a city’s economic fortunes and the engagement of citizens in the budget process. Parks and recreation departments are often the first to have their budgets slashed and the last to see them increased. Park advocates and nonprofits play an important role in ensuring consistent funding for parks year to year. Cities with strong nonprofits and organized advocates tend to have the most stable public funding for parks.”

**City Parks Alliance**



## Case Study

# Unifying Multiple Local Groups to Speak in One Loud Voice in New York City

In 2014, the nonprofit the Natural Areas Conservancy (NAC) completed an in-depth ecological assessment of New York City's forests. The results showed that the city's forests were mostly healthy and native-dominated but needed management to maintain good health. While the canopy was dominated by native species, factors such as trash, invasive species, and fragmentation impact the forest understory. Left unchecked, these factors have negative implications for wildlife, climate resilience, ecosystem service provision, and long-term forest health. Using a financial model, NAC estimated it would cost about \$385 million over 25 years to bring the whole urban forest up to full health and set it on a trajectory to stay that way. But consistent annual funding would be needed to reach this goal.

Funding for parks maintenance, and especially forest management within the NYC Parks system, however, had been inconsistent for years. Leaders in parks and open space within New York City looked to other municipalities across the country, where funding for parks often accounted for at least 1% of the total city budget. In New York, parks funding remained at 0.5% of the total city budget—yet parks covered 14% of the city's land. Forests, which cover 5.5% of the city's area, received 0.5% of the Parks Department's total budget. In short, forest management was vastly underfunded.

A previous effort to increase the Parks Department budget stalled in the wake of the 9/11 attack in 2001. Parks and open space advocates across the city decided to try once again in 2019, launching an advocacy campaign and coalition called "Play

Fair." The goal: "to increase Parks Department funding to allow for increased staffing in maintenance, operations, forestry, and programming"—and to recast parks in the public imagination as vital social and physical infrastructure.

Co-founded by New Yorkers for Parks (NY4P), the New York City Council, the municipal workers' union District Council 37 (DC37), and the New York League of Conservation Voters (NYLCV), the Play Fair coalition first developed a campaign platform, goals, and a way to get to 1%. Then they began to grow the coalition, first by tapping their own networks through phone calls, meetings, and in-person conversations outside in green spaces. In short order, the Play Fair coalition grew to include more than 400 groups, including the NAC. Through op-eds in the local press, rallies, and meetings with elected officials, the message from these hundreds of groups was clear: \$100 million for NYC parks. Thanks to the research and analysis conducted by the Natural Areas Conservancy, advocates could specify that \$4 million should be allocated to forest management.

The advocacy efforts paid off: the Mayor and City Council agreed to increase funding by \$44 million to the Parks Department budget for FY2020, with \$4 million going to forest management for the year. This was the first time an increase of this scale had taken place. Unfortunately, the COVID-19 pandemic caused the city to cut park funding once again by 14% (\$84 million), just when New Yorkers needed access to high-quality nature most. But the groundwork was set, and the Play Fair coalition continues their effort to restore and advance funding for maintenance and management for forests and parks.

## Case Study

# 25 Years of Parks and Open Space Management Through Public Financing in Portland, Oregon

Metro is the regional agency that manages land-use planning; works with cities, counties, and transportation agencies to invest federal transportation funds; manages 17,000 acres of parks and natural areas; manages the zoo and other visitor venues; and plans and oversees the region's solid waste system in the three urbanized counties that contain Portland, Oregon. In 2019, after over a year of public outreach and building on a legacy of partnerships with conservation partners, local park providers, and community organizations, the Metro Council put forth a local ballot measure—its third parks and nature bond measure in 25-plus years—authorizing \$475 million in general obligation bonds.

The measure passed easily, with 66.8% of the votes in favor of the measure. Funded by a renewal of property tax at the same rate of the last approved parks and nature bond measure from 2006 (at a rate of about \$0.19 per \$1000 of assessed value), the bond supports six program areas:

- *\$155 million to purchase and restore lands to support improved water quality, and fish and wildlife habitat.*
- *\$98 million to complete Metro-owned nature parks and make improvements at existing nature parks.*
- *\$40 million to the Nature in Neighborhoods program, which provides grants to purchase land, restore habitat, or provide community access to nature.*
- *\$92 million for the region's 27 park providers to invest in parks, trails, and natural areas in the Portland area.*
- *\$40 million for new walking and biking trails and to complete other trail projects.*
- *\$50 million for large-scale community vision projects.*

The Metro Council also crafted the measure in a way that prioritizes outcomes that benefit people of color, Indigenous people, people with low incomes, and other historically marginalized groups who have not benefited equitably from past investments. The bond measure also prioritizes work to make the region more resilient to climate change.

Metro regional government has used such measures to fund natural areas acquisition and management before. The first bond measure, passed in 1995, authorized \$135.6 million in funds and was used to protect and acquire natural areas and trails. In 2006, voters in the Metro area approved another \$227.4

million measure to continue the protection and acquisition of natural areas and trails and included funds for local parks and nature projects and community grants. Since 1995, the money generated from these ballot measures has protected more than 14,750 acres of natural areas and 170 miles of stream and river frontage and over \$84 million in parks and nature projects in communities across the greater Portland region.

### Lessons Learned

- *Quantifying the financial needs for urban forested natural areas management is an important first step in advocating for more resources.*
- *Contextualizing the financial needs for urban forested natural areas within the total budgets of the right municipal department and the city as a whole can help make the case for more funding. Galvanizing public support for natural areas acquisition and management can help catalyze these changes.*
- *Building partnerships within the broader urban green space movement, as well as looking outside the parks, open space, or natural resource management world to other sectors for partnership, can help move more “niche” green space funding needs forward.*
- *Past campaigns can lay the groundwork for future efforts.*
- *Comparisons between cities can illuminate needs and help strengthen the case for increased public funding.*
- *Local culture can influence a movement.*



# State & Federal Funding

Federal allocations and grants are responsible for funding the implementation of a wide range of public policies in sectors including health care, transportation, community development, and environmental protection. The federal government distributes money to state and local governments to support these efforts that would be difficult to support on state and local tax revenues alone, and fund programs whose efforts contribute to achieving goals set at the federal level. Currently, the proportion of federal funds allocated to conservation, particularly in urban areas, is small. For example, the Farm Bill provides most of the federal funding for forestry programs nationwide. This act is approved by Congress every five years, most recently in 2018 for \$428 billion. From this recent bill, only 7% is devoted to conservation spending, and the majority of that 7% is directed to privately owned, rural forests.

In addition to the Farm Bill, there are a number of agencies that direct federal monies to urban natural areas conservation, with the USDA Forest Service the primary source and main focus of this chapter, as their grants directly speak to forest management. In addition, there are several other agencies that make grants available to urban environmental programs such as the Environmental Protection Agency (EPA), National Fish and Wildlife Foundation (NFWF), the Federal Emergency Management Agency (FEMA), and the National Oceanic and Atmospheric Association (NOAA). Below is a list of just a few annual federal grants that could be applied to work on urban forested natural areas.

## Challenges

Federal grants offer vital funding to green space management in cities, but rarely support more than one-off programs in the field of forested natural areas management because of their unpredictability, complex structure, and short-term format. How federal dollars are allocated fluctuates based on the financial climate, political relationships, and the current presidential administration, making them very unpredictable year to year. As an example, the Trump administration cut all funding for the U.S. Forest Service Urban and Community Forestry programs, though some of these dollars were reallocated by Congress.

This inconsistency in funding poses an issue for the care of forested natural areas, which requires a long-term strategy with predictable, long-term funding. Instead, federal funds are generally available for one-off projects or capital investments. Further, the grants available are for relatively small amounts, and the application process highly competitive, with urban natural areas projects competing against all other forestry and greening projects at a state-wide or national scale. For example, across the New York State Urban and Community Forestry program, only 4% of funds were allocated to urban natural areas projects between 2010 and 2014. Finally, federal grants often require a match and are reimbursement grants, meaning organizations who receive these grants must have significant capital and administrative capacity to successfully execute the programs. This strongly favors large organizations that

TABLE 1

## Examples of Federal Grant Programs Applicable to Urban Forested Natural Areas

Federal Agency	Grant	Award Amount	Descriptions
Environmental Protection Agency (EPA)	Five Star and Urban Waters Restoration Grant Program	\$20–\$50k	Develop community stewardship, preservation, and restoration of water in urban settings. Includes green infrastructure linked to stormwater, coastal, wetland, and riparian systems. There are outreach and education, partnership, and sustainability requirements.
Federal Emergency Management Agency (FEMA)	Building Resilient Infrastructure and Communities	Up to \$10 million	Makes federal funds available to states and tribes to reduce and mitigate hazards. Three categories of funding: capacity-building, mitigation projects, and management costs.
National Oceanic and Atmospheric Administration (NOAA)	National Coastal Resilience Fund	\$80k–\$4 million	The National Coastal Resilience Fund (NCRF) seeks to create, expand, and restore natural systems in areas that will both increase protection for communities from coastal storms, sea and lake level changes, flooding, and/or coastal erosion and improve valuable habitats for fish and wildlife species.
United States Department of Agriculture / United States Forest Service (USDA / USFS)	Community Forestry Program	Up to \$600k	Provides financial assistance to tribal entities, local governments, and qualified conservation non-profit organizations to acquire and establish community forests that provide community benefits. Community benefits include economic benefits through active forest management, clean water, wildlife habitat, educational opportunities, and public access for recreation.



have long-established track records, such as street tree planting programs, whereas many urban forested natural areas programs are relatively new or, as noted above, suffer from chronic low funding.

### **Opportunities for Growth**

The core strategy to increase the amount of money that is allocated for urban natural areas funding is through increased awareness from both practitioners and the federal government.

Firstly, increased practitioner awareness of grant opportunities and how to leverage them to support urban natural areas is needed, since the connection may not always be clear. For example, the recent federal focus on climate resilience and natural infrastructure has directed federal grant dollars towards water-control projects. While these grants may not seem like an opportunity for natural areas management projects, natural areas are known to absorb stormwater, and focusing on this in applications could unlock more federal dollars. In order to increase both the amount of federal money available for forested natural areas and make the process of applying for and receiving these grants more smooth, increased partnerships with the USDA Forest service is needed to make a case for urban natural areas and influence grant allocations and parameters.

Another current opportunity is nested within President Biden's Justice 40, released in 2021, with the goal of ensuring that Federal agencies work with states and local communities to deliver at least 40 percent of the overall benefits from Federal

investments in climate and clean energy to disadvantaged communities. This initiative has already shifted the focus of some Forest Service initiatives to focus specifically on underserved communities in the urban and community forestry program. As forested natural areas are known to be a critical source of "nearby nature" for underserved, urban communities, a focus on conserving, managing, and improving access to these spaces could likely be a focus for potential funding in coming years.

Secondly, increased federal awareness of the societal benefits and ecological importance of urban forested natural areas is needed. Given the very high value to size ratio urban natural areas provide, and the fact that urban natural areas account for the majority of urban parkland, it would be a wise investment of federal grant money.

### **Conclusion**

Natural areas are a key nature-based solution to many of the urgent challenges that cities are currently facing such as climate change, extreme heat, stormwater and flooding, and loss of biodiversity. Many federal agencies are making grants for programs that address these challenges, and natural areas managers can tap into these funds. For example, decision makers could integrate forested natural areas into watershed planning, as there are many federal grants available for urban water control, conservation, and restoration.



# Case Study

## A Historic Federal Investment in Urban & Community Forests

In 2022, the U.S. Senate passed Senate Concurrent Resolution 14, otherwise known as “the Inflation Reduction Act,” a federal law which aims to curb inflation and economic instability that resulted in part from the COVID-19 pandemic that authorized \$891 billion in total spending— including \$783 billion on energy and climate change, the largest investment addressing climate change in United States history. Of this historic investment, \$1.5 billion was allocated specifically to the U.S. Forest Service’s Urban and Community Forestry program, creating a one-time infusion of funding in the field of urban forestry. Forested natural areas were called out specifically in the Notice of Funding Announcement, as an eligible property type, a marker of success as traditional urban forestry grants tend to focus more on street tree planting and maintenance and often exclude forested natural areas in their calls for proposals.

Awards were announced on September 14th, 2023. The Forest Service reported that they received over 1,300 applications with a total of \$6.4 billion and awarded \$1.13B awarded to 385 national recipients. Forest Service leadership made the choice to award 100% of the funds to projects working in disadvantaged communities as defined by the federal Climate and Economic Justice Screening Tool (CEJST).

A number of projects selected featured forested natural areas restoration and programming, including several cities in the FiC network. Table 2 lists several examples of these programs selected for funding within the network.

Through the application process, it became clear that there is still work to be done to include forested natural areas more in federal grant-making considerations in the future. For example, the CEJST mapping tool, which layers various social and environmental factors geographically to identify disadvantaged communities suffering from environmental injustice, does not include parkland in many of their designations, meaning that many large parks were excluded from this funding, despite directly serving adjacent communities.

### Lessons Learned

- *Progress is being made to include forested natural areas in federal grant-making, and natural areas being called out specifically as an eligible land type in 2023’s Notice of Funding Opportunity was a win for the forested natural areas community.*
- *CEJST tools made designating natural areas in cities as serving disadvantaged communities difficult to secure funds for parkland. Future conversations with the U.S. Forest Service should focus on a work-around for this issue.*
- *While this one-time funding opportunity is a windfall for urban forests nationally, the amount of money requested overall makes a case that a sustained stream of funding to support shovel-ready urban forest programs is needed to sustain our nation’s urban trees.*

TABLE 2

## Examples of Federal Grant Programs Applicable to Urban Forested Natural Areas

Partners	Project	Category	Funding
City of Atlanta	<b>City in a Forest: Protecting Atlanta's Legacy:</b> This project will create the city's first comprehensive Urban Forest Master Plan, establishing a strategy and standards for systematic, equitable, and effective management of the urban forest. In disadvantaged areas, making up 49.6% of the city, the project will complete comprehensive urban forest assessments, oversee risk reduction maintenance of trees, restore forested areas, and install signage to connect people with the natural environment.	<ul style="list-style-type: none"> <li>• Tree Planting &amp; Maintenance</li> <li>• Restoration &amp; Resilience</li> <li>• Planning &amp; Community Engagement</li> </ul>	\$5,000,000
NYC Department of Parks and Recreation	<b>NYC Forested Natural Areas Care and Job Training:</b> This project will establish a green job training and employment program, providing a pathway into forest restoration careers for underserved communities. Partners include: the Natural Areas Conservancy, NYC Department of Youth & Community Development, City University of New York, and various community groups.	<ul style="list-style-type: none"> <li>• Tree Planting &amp; Maintenance</li> <li>• Restoration &amp; Resilience</li> <li>• Workforce Development</li> <li>• Planning &amp; Community Engagement</li> <li>• Extreme Heat</li> </ul>	\$10,000,000
City of Billings, PRPL, Forestry Division	<b>Billings Urban Forestry Grant for Disadvantaged Areas:</b> This project will improve tree canopy equity and associated benefits and support urban tree care in disadvantaged communities.	<ul style="list-style-type: none"> <li>• Tree Planting &amp; Maintenance</li> </ul>	\$1,000,000
City of Indianapolis	<b>Indianapolis Canopy Growth and Resilience Initiative:</b> This project aims to enrich the city's tree canopy, ecological services, and human health benefits by enhancing the resilience of Indianapolis's urban forests.	<ul style="list-style-type: none"> <li>• Tree Planting &amp; Maintenance</li> <li>• Restoration &amp; Resilience</li> <li>• Extreme Heat</li> </ul>	\$12,000,000





# Private Funding

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Philanthropic giving is a source of funding that commonly fills gaps in municipal budgets. To acquire these funds, public-private partnerships and non-profit organizations (e.g. park conservancies), are able to raise private dollars to fund the management of public green spaces in cities. The organizations raise money from several sources, including private donations and grants from large institutions and foundations.

In many cities, park conservancies raise funds to support the acquisition, improvement, and long-term care of parkland. Research has shown: “nonprofits increase fund-raising efforts and diversify revenue portfolios in response to incremental changes in the government spending environment. When governments cut parks and recreation, nonprofits are more likely to reduce administrative expenses and spend more on programs to fill in the gap of service needs” (Cheng & Yang, 2018). Many cities rely on this model to bolster funding for forest protection and care. For example, in New York City, conservancies provide \$1.8 million for forest care—18% of the funds that are spent annually in forested natural area parkland in the city (Forgione et al., 2023).

While conservancies can bring direct private funding to natural areas management, due to the temporal nature of grants, these monies often support short-term improvements rather than long-term maintenance. In addition, conservancies in wealthier neighborhoods are often able to raise and leverage more funds as compared to those in disadvantaged neighborhoods who may have experienced disinvestment in parks in the past, further exacerbating this inequity. One other path that conservancies and other non-profit organizations can take is to act as advocates for increased, sustained municipal funds and act as dedicated partners to municipal and county agencies working to sustain these forests.

While private funding fills critical gaps in municipal budgets, there remains a pressing need for equitable distribution of resources, ensuring that all communities benefit from investments in green spaces. Moving forward, it is imperative to continue fostering synergistic partnerships between public and private sectors, while prioritizing inclusivity and environmental justice in resource allocation. By embracing strong partnerships, amplifying community voices, and advocating for sustainable policies, we can ensure the preservation and accessibility of natural areas for generations to come.

## Case Study

# Philanthropic Investment in Assessments in New York City, New York

Assessing the current range of social and ecological conditions across a city's forested natural areas is the primary step in understanding the resources needed to manage them. These data not only help prioritize when and how management is implemented, but also help craft an effective message when making funding requests, both for municipal agencies and for private donors. The type of assessment, rigor, and application of the data into planning and funding materials is a key consideration in determining the cost of the assessment; however, making the case for funding a rigorous assessment is often difficult. In New York City, the initial funding for a city-wide assessment came about because of a fortuitous mix of opportunity, an easily understood message, and well-networked individuals.

An initiative to plant one million trees in New York City between 2007 and 2016 resulted in increased philanthropic interest in urban forestry and forested natural areas. Additionally, in 2013 the city was still grappling with the aftereffects of Superstorm Sandy on New York City's natural landscape, and the need for investment was evident. This combination of factors created an appetite to better understand and manage natural areas for health and climate resilience.

Before anyone could make recommendations for New York City's natural areas, there was a need to understand the natural areas' condition. Such a simple, top-line message allowed for donors to understand what information the assessment would provide, and why it was worth supporting. The messengers in this case were a tight cohort of people whose decades of experience in

the New York City parks and open space world commanded respect and attention. Some of these people were current and former city parks officials; others were civic leaders active in the park conservancy and nonprofit space. Their ardent support for a natural areas assessment, and willingness to facilitate introductions and broker donations, laid the groundwork for foundation and corporate philanthropy.

In 2012, the Tiffany Foundation and Doris Duke Charitable Foundation provided initial funding for a business plan for a Natural Areas Conservancy, and additional funds in 2013 and 2014 to conduct a social and ecological assessment across the 10,000 acres of natural areas in city parkland. In basic terms this assessment asked: Where are our forests, what condition are they in, and how do residents interact with them? The resulting data informed the 2018 Forest Management Framework, a 25-year plan for funding restoration and management of the city's forests. Since its publication, the Forest Management Framework has been successfully used to advocate for increased public funding for forest management (see the above case study that describes the Play Fair campaign).

"A lot of it was luck," stresses Natural Areas Conservancy executive director Sarah Charlop-Powers. "We knew people with connections who were willing to make the case for us." There is an element of opportunistic action and pre-existing relationships that helped get the Natural Areas Conservancy to the point of having a conversation. From there, the message carried the day: we need a comprehensive picture of New York City's natural areas.



# Innovative Funding

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A number of creative approaches have been developed by cities to utilize new and novel streams of funding to protect and manage forested natural areas. These approaches range from finding new veins of municipal funds such as the establishment of park districts whose funds can support forest planning and maintenance or establishing concessions or other fee-based park services to generate a revenue stream that can be used for forest management.

Another recent trend to quantify and price different ecosystem services in urban areas has unveiled a new arena of innovative funding for forest management which will be outlined in this chapter. The best-known example of this shift is the sale of carbon in urban forests.

City Forest Credits, a carbon credit registry founded in 2015, offers two carbon protocols specifically for urban settings. The first, a tree-planting protocol, provides guidelines for measuring carbon as a way to fund urban tree planting. The second protocol, more relevant to urban forested natural areas, is a preservation protocol that generates carbon credits from the measurement of carbon stored in already-existing stands of

trees. Crucially, the trees must be unprotected by regulations, ordinances, or laws and be at risk of clearance for development in order to be eligible. Organizations must commit to a 40-year monitoring program, and the sale of the carbon credits happens in the first few years of the project timeline. The price per credit for City Forest Carbon projects is typically between \$20 and \$40, and projects tend to be at least 15 acres, though there is no parcel size requirement. Credits are generated in the first five years of the project and are sold as they become available.

Some cities have also used traditional forest carbon protocols, which are more commonly found in rural forests. These projects generally command a lower price per credit, around \$10 a credit, and thus tend to operate at a scale of thousands of acres of forest. Similar to City Forest Credits, land must be unprotected to be eligible, and long-term monitoring is required but credits can be sold on a schedule over time.

Cities will have to balance the long-term costs of monitoring with the amount of money that could be earned through the sale of carbon credits to decide if this funding source is a practical solution for the long term.

# Case Study

## Traditional Carbon Credits in Tampa/Hillsborough County

In Hillsborough County, Florida, the fourth most populous county in the United States, county land managers have a large portfolio of properties, ranging from small urban parks to thousands of acres of conservation lands on the fringes of the county's urbanized core. One such property is the Lower Green Swamp Preserve, a 5,242-acre property that is enrolled in a carbon credit project.

Hillsborough County invested about \$100,000 over two years to conduct a feasibility study and enroll the Lower Green Swamp Preserve in the American Carbon Registry's improved forest management protocol. The county enlisted the Climate Trust to conduct a carbon inventory, handle the American Carbon Registry paperwork, and take over after-the-fact monitoring.

The project was eligible for carbon credits because the land was unprotected, and the county could have removed trees from the land if they chose to. Now, under the rules of the protocol, the land is now protected from tree removals for the next forty years.

The carbon offset project within the Lower Green Swamp Preserve is estimated to generate about \$1.5 million for the county over the next seven years, selling credits at a price of \$10.05 per credit. The project took two years from start to finish, and the county will pay \$236,000 over seven years to hand over all maintenance and monitoring to the Climate Trust. At the end of seven years, the county can re-inventory the Lower Green Swamp Preserve's carbon and sell any incremental carbon that had been stored.

Funds that remain after paying the Climate Trust will be used for forest management and restoration. The project has been so successful in the county's eyes that there are plans to create more carbon credit projects as part of a grander land preservation strategy.

### Lessons Learned

- *Carbon markets are an expanding opportunity to fund conservation and restoration.*
- *In order to have a successful carbon credit program, municipalities must prove that the program will prevent deforestation that may have occurred if not for the program.*
- *Traditional carbon credit projects require thousands of acres of land to justify the effort and upfront costs.*
- *Resulting revenue from carbon credit projects can be used to fund management and restoration.*



# Case Study

## Selling “Impact” in Kent, Washington

Land managers at King County government, a highly urbanized region, used the Impact Certification system to fund a 4-acre restoration along the Green-Duwamish River.

Over the last 150 years, trees and shrubs along the waterfront have been cleared, and now much of the river is directly exposed to the sun. Higher water temperatures have negatively impacted salmon and other fish that need cooler waters, and native animals, birds, and insects have lost their habitat. A group of local and national agencies and nonprofits created a coalition called Green-Duwamish Revegetation and aim to replant 2,384 acres along the banks of the Green-Duwamish by 2025.

King County first developed the plans for the project and evaluated the proposed plan against the Impact Certification Scorecard, which rated the project against human health, environmental, and equity criteria. When everything was in place, City Forest Credits helped King County to find a funder—in this case, Sound Transit, the local regional transit authority. Sound Transit provided the \$112,000 to restore this natural area from its degraded state.

King County planted 6,600 trees and shrubs along the riverfront, reestablishing the vegetative cover that will eventually grow up to create canopy shade over the river, resulting in healthier fish populations and habitat.

As in the example from Houston, this project aimed to manage an urban natural area through restoration and revegetation. However, the project provided funding only for planting, and follow up maintenance will be the task of King County land managers over time. As we have covered in this report, funding for long-term management is an area of great need, and is chronically under-resourced.

### Takeaways

- *Funders are becoming increasingly interested in engaging with restoration projects that have beneficial impacts to human communities.*
- *Forest restoration benefits human health and society equity, and the ability to describe these impacts has the potential to bring in funding from engaged grant-makers.*

In the case of Gainesville, Florida, and Cleveland, Ohio, the sale or trade of timber from the forest funded management activities. On its face, this looks different from the sale of carbon credits, but in essence it is the same thing: both carbon and timber are a type of forest product to be quantified, valued, and sold.

# Case Study

## Funding Management Through Trading Timber for Labor

The City of Gainesville and the Alachua County government are working towards restoring an 80-acre sandhill-longleaf pine ecosystem, reverting it from the laurel and water oak-dominated hardwood hammock ecosystem that grew up in response to decades of fire suppression. The primary goal of the project is to provide increased habitat for native Florida plants and animals, such as the gopher tortoise, an important species whose burrow provides refuge for about 360 other animal species.

To pay for the restoration project, the City of Gainesville was awarded \$25,000 from the U.S. Fish and Wildlife Service. However, the total cost of the project exceeded that amount, so Gainesville's natural areas managers hit upon a creative solution: the city would cover the cost of the biggest-ticket item, the removal of the oaks, by giving the wood away to the contractors who removed it. Essentially, the city traded the timber for labor, and the logging contractors recouped their costs by selling the oaks to a biomass plant. This approach saved the city about \$30,000 and helped avoid a possible public misconception that the oak removal was for profit.

Other resources that helped the restoration project move forward include staff time, existing in-house expertise in controlled burns, seeds collected locally on-site, and tree mitigation funds.

Other cities are also using the value of the timber on their lands to fund restoration projects. In Cleveland, Ohio, a project designed to reset the forest trajectory towards increased diversity and climate resilience paid for itself with the sale of the red maples. The 16-acre forest site was dominated by multi-stemmed red maples, which cast dense shade and prevented other tree species from growing up under the canopy. A judicious thinning of the red maples opened the canopy up and allowed more sunlight to hit tree seedlings in the understory, and the sale of timber covered the costs of the restoration.

### Takeaways

- *Natural resources that come from the forest (in this case, timber, but also carbon) have value and can be traded or sold to fund management.*
- *Educating the community about why tree removal supports forest health (in certain cases) can avoid public misconceptions.*

Carbon credit projects and the sale of natural resources is somewhat scalable depending on the city's land management goals. Cities can use carbon credits generated from unprotected forested properties they already own to fund the purchase of more land. This strategy is used by urban land trusts and in cities where forest parcels are privately-owned (and thus more likely to be unprotected and threatened by development). Selling timber is trickier and would be possible in scenarios where managers decide on a hard reset of the forest trajectory and are working on a parcel with enough supply of wood that the sale would pay for the removal.

These methods of funding forest management in cities are innovative, but ultimately do not solve the fundamental problem of sustained funding over time. The sale of carbon credits or impact or timber is a one-time transaction that provides an influx of money, perhaps useful to accomplish one specific project, but it is not a funding stream that can sustain forest management over the long term.



# Conclusion

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The report underscores approaches that cities can take to bring more funding to the care, protection, and restoration of urban forested natural areas. By examining potential, municipal, state and federal, private, and innovative sources of funding, cities may find new opportunities to fund the vital work of urban forest management.

Urban forested natural areas face management challenges, including the threat of development and competing land use, which underscores the need for formal protection and sustained investment. The dwindling awareness of these areas among decision-makers poses a risk to their continued care and maintenance. The report provides case studies and highlights gaps in the funding landscape, aiming to empower practitioners, researchers, and decision-makers to advocate for increased financial support from untapped sources.

Without dedicated funding, forested natural areas are at risk of degradation, potentially leading to a loss of ecosystem services and social benefits for city residents. The report calls for a paradigm shift in recognizing the value of these spaces, akin to other forms of urban infrastructure, and stresses the importance of long-term investment to ensure their resilience in the face of urban challenges. Ultimately, the call to action is clear: securing adequate funding is essential to safeguard the health and vitality of urban forested natural areas, ensuring their benefits for current and future generations.

## Call to Action

To ensure the sustainability and vitality of our natural areas, it is imperative to ramp up awareness-raising efforts and advocacy initiatives. This includes:

- ***Quantifying and highlighting the myriad benefits of natural areas, from biodiversity conservation to mental health benefits, to underscore their value to communities and policymakers alike.***
- ***Clearly explaining the ongoing need for maintenance funding, emphasizing that investments in upkeep are essential for preserving the integrity and functionality of these spaces over the long term. Tie this need to the opportunity to create equitable, green jobs in cities.***
- ***Exploring innovative financing options, such as the utilization of carbon credits, to provide a one-time infusion of funds that can be directed towards critical management and acquisition efforts.***

Furthermore, in discussions surrounding land acquisition for parks and green spaces, it's crucial to recognize that without dedicated funding streams for long-term maintenance, the feasibility of such endeavors is severely compromised. Relying solely on government or grant funding sources is unlikely to suffice, highlighting the necessity for alternative financing mechanisms.

Therefore, we propose the exploration of various financing opportunities, including:

- ***Establishing a revolving fund for urban forestry, akin to state drinking water revolving funds, which could be sustained through joint revenue streams such as increased special events prices, concessions, and sales of ecosystem services.***
- ***Collaborating with conservancies to establish maintenance endowment funds, providing a reliable and sustainable source of funding for the ongoing care and management of natural areas.***

By actively engaging in these initiatives and exploring diverse financing avenues, we can ensure that our natural areas thrive and remain accessible for the enjoyment and benefit of present and future generations. Let us join forces to safeguard these invaluable resources for the well-being of our communities and the health of our planet.





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