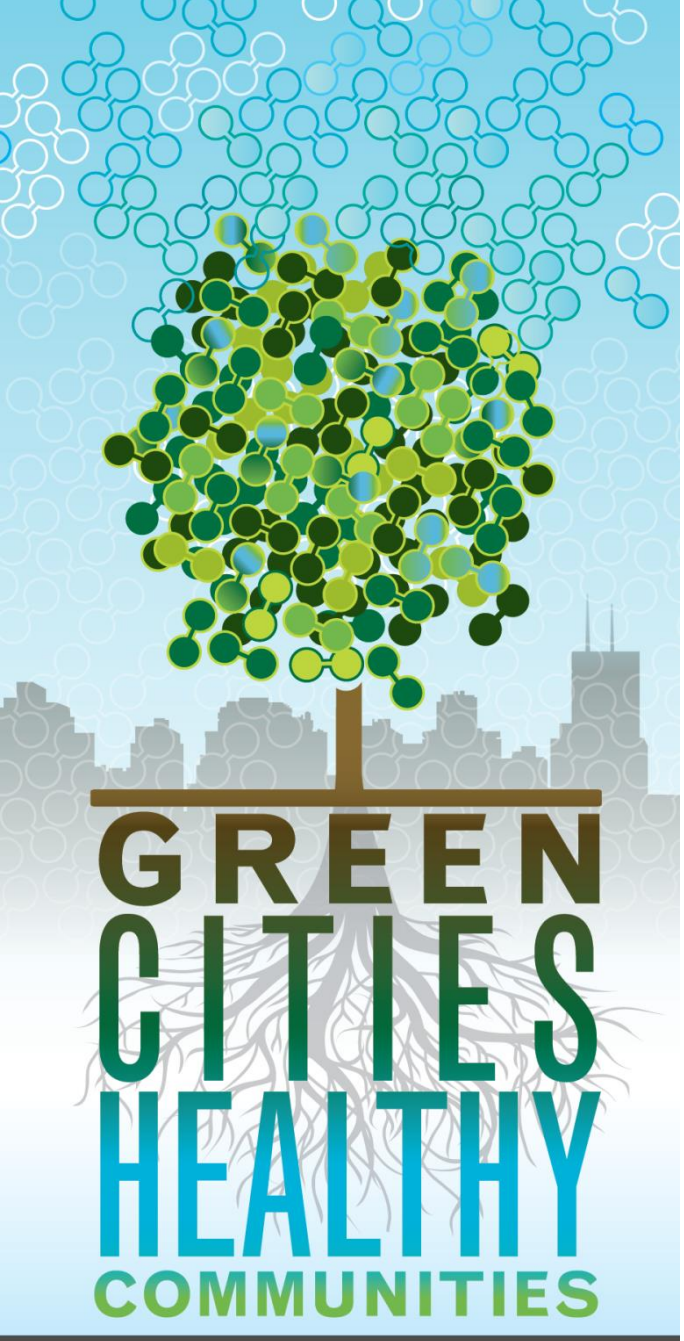

USDA Forest Service

URBAN FOREST CONNECTIONS

webinar series

Second Wednesdays | 1:00 – 2:15 pm ET

www.fs.fed.us/research/urban-webinars

Rekindling the Forest in Our City: A story of research, responsibility, and care

Kristen King

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Rekindling The Forest In Our City: A Story Of Research, Responsibility And Care

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Sarah Charlop-Powers - sarah.charlop-powers@parks.nyc.gov

Natural Areas Conservancy

Lower Manhattan
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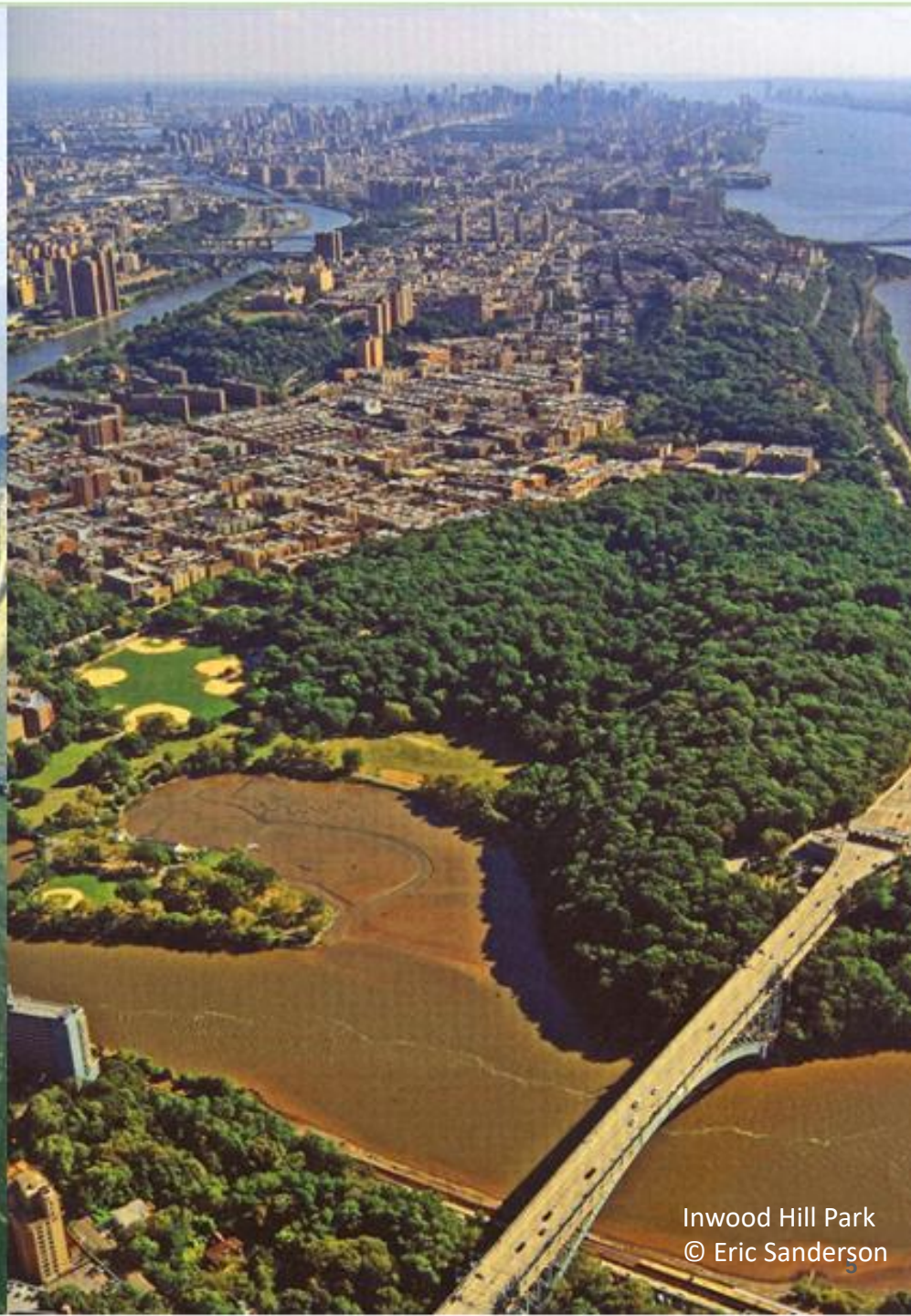


Inwood Hill Park
© Eric Sanderson


Van Cortlandt Park, Bronx


Alley Pond Park, Queens

Cunningham Park, Queens

Alley Pond Park, Queens

Inwood Hill Park, Manhattan

Inwood Hill Park, Manhattan

Pelham Bay Park, Bronx

Kissena Corridor Park, Queens

LaTourette Park, Staten Island

History of forest management in NYC

Natural Areas Conservancy

NYC Parks


What is the condition and distribution of nature in NYC?
How are New Yorkers experiencing nature?
How should we improve degraded forests and wetlands?
How can we ensure that our natural areas are resilient to climate change?

FIGURE 2

NYC's Land Cover: 40.5% of NYC Is Green

Source: Natural Areas Conservancy Ecological Covertype Map[7]

FIGURE 3

NYC's Natural Areas: 11.6 % of NYC's Land Cover Is Natural Areas

Source: Natural Areas Conservancy Ecological Covertype Map[8]

Natural Areas Conservancy

Healthy, but declining forests

A dynamic system - 76% of forest canopy is native, 63% of midstory and 71% of all tree seedlings

A diverse community – Over 750 plant species and 62 unique vegetation associations

Threatened by deer browse observed in 53% of plots citywide and in 81% of all plots in Staten Island

Impacted by trash – Estimated 273 acres of trash in our forest

Regeneration is varied - 20% of Northern Hardwood stands have no native seedlings and 36% of Successional stands have no native seedlings

Invasive plants are prevalent - 80% of our forests have at least one invasive plant

Natural Areas Conservancy

Social perceptions

Well-managed forests are more welcoming.

Parks provide well-being.

50% of New Yorkers reported recreating only in NYC parkland.

Natural Areas Conservancy

Forests Are Healthy

People Benefit from Forests

Forests Are Supported

Natural Areas Conservancy

NYC Parks

Forest Management Framework for New York City

Natural Areas Conservancy

Framework for forest health and threat

Health

- Native trees in the canopy, midstory and seedling layer
- Native species richness
- Coarse woody debris volume
- Leaf litter depth

Threats

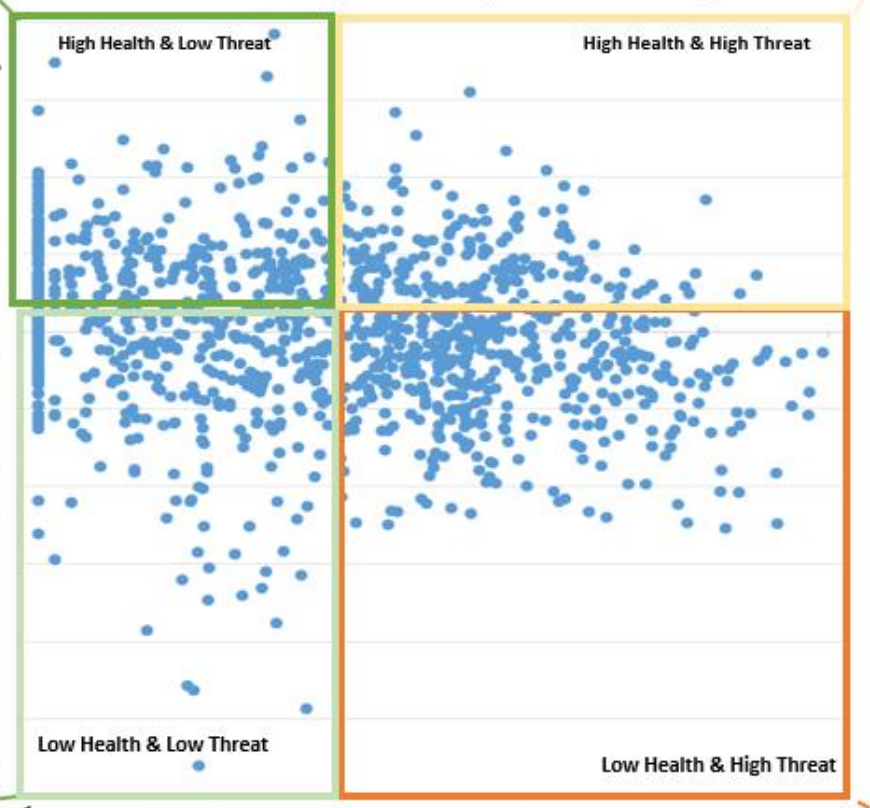
- Cover of invasive exotic herbaceous species in the understory
- Invasive woody seedlings, midstory and canopy trees.
- Invasive vines climbing on trees
- Trash & dumping

Natural Areas Conservancy

NYC Parks

Forest Condition Matrix

Using a index for ecological health and ecological threat we represent the condition of NYC's forest along a gradient so that they can be understood and compared to one another. Each point in the matrix below represents a single plot point where data was collected in the field. The data was combined into an index that represents ecological health and ecological threat.



Forests in this category are the highest quality. Monitoring is required to ensure that quality remains high and we protect them.

Forests in this category have minimal threats but desired health attributes such as structure and composition metrics are not met. Management can be used to accelerate the transition into high health but monitoring over time with little intervention could also result in improved health.

Forests in this category contain many of the attributes of a high quality forest, for example native canopy, but at the same time also contain many of the attributes of a highly threatened forest, for example invasive understory. Management intervention of these forests could be critical to ensure invasive species don't overcome the healthy components of these forests.

Forests in this category are the most degraded in NYC. They are categorized as high threat and are likely dominated by invasive non-native species. Intensive management interventions are needed.

NYC Parks

Forest Condition Drives Management Strategy and Cost

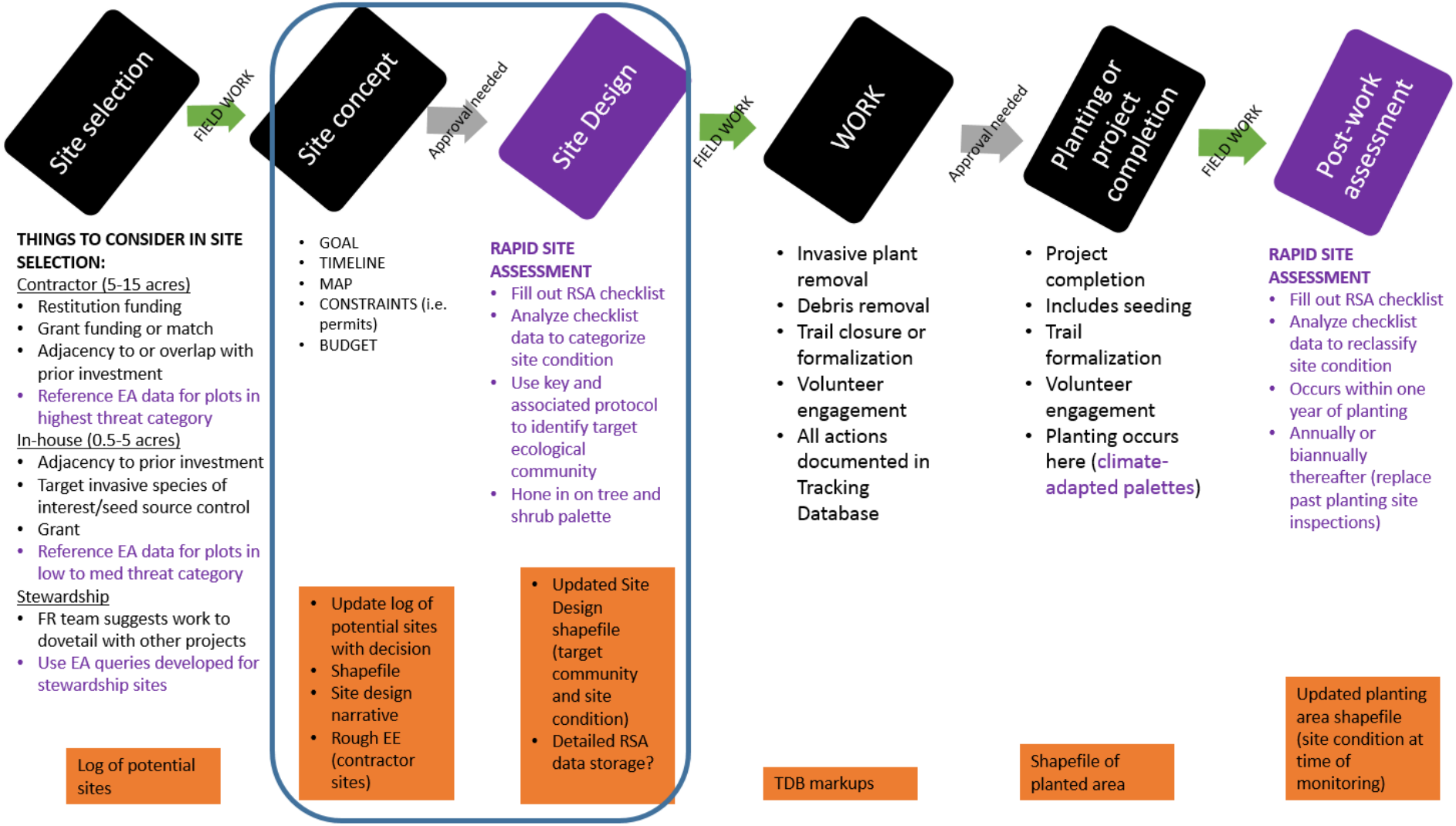
Forest Restoration

Forest Management

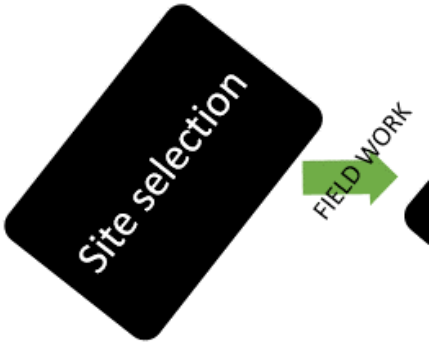
Forest Monitoring and Maintenance

Forest Restoration (Contractor)	Forest Restoration (In-House)	Forest Management	Forest Monitoring & Maintenance
$42,076	$6,078	$2,074 (in-house) $28,500 (volunteer)	$1,037

Natural Areas Conservancy


Site selection
FIELD WORK
Site concept
Approval needed
Site Design
FIELD WORK
WORK
Approval needed
Planting or project completion
FIELD WORK
Post-work assessment
THINGS TO CONSIDER IN SITE SELECTION:
Contractor (5-15 acres)
Restitution funding
Grant funding or match
Adjacency to or overlap with prior investment
Reference EA data for plots in highest threat category
In-house (0.5-5 acres)
Adjacency to prior investment
Target invasive species of interest/seed source control
Grant
Reference EA data for plots in low to med threat category
Stewardship
FR team suggests work to dovetail with other projects
Use EA queries developed for stewardship sites
GOAL
TIMELINE
MAP
CONSTRAINTS (i.e. permits)
BUDGET
RAPID SITE ASSESSMENT
Fill out RSA checklist
Analyze checklist data to categorize site condition
Use key and associated protocol to identify target ecological community
Hone in on tree and shrub palette
Invasive plant removal
Debris removal
Trail closure or formalization
Volunteer engagement
All actions documented in Tracking Database
Project completion
Includes seeding
Trail formalization
Volunteer engagement
Planting occurs here (climate-adapted palettes)
RAPID SITE ASSESSMENT
Fill out RSA checklist
Analyze checklist data to reclassify site condition
Occurs within one year of planting
Annually or biannually thereafter (replace past planting site inspections)
Log of potential sites
Update log of potential sites with decision
Shapefile
Site design narrative
Rough EE (contractor sites)
Updated Site Design shapefile (target community and site condition)
Detailed RSA data storage?
TDB markups
Shapefile of planted area
Updated planting area shapefile (site condition at time of monitoring)

NYC Parks



THINGS TO CONSIDER IN SITE SELECTION:

Contractor (5-15 acres)

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In-house (0.5-5 acres)

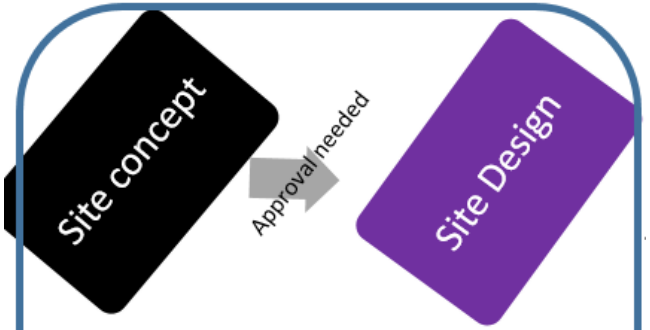
- Adjacency to prior investment
- Target invasive species of interest/seed source control
- Grant
- Reference EA data for plots in low to med threat category

Stewardship

- FR team suggests work to dovetail with other projects
- Use EA queries developed for stewardship sites

Log of potential sites

NYC Parks



- GOAL
- TIMELINE
- MAP
- CONSTRAINTS (i.e. permits)
- BUDGET

RAPID SITE ASSESSMENT

- Fill out RSA checklist
- Analyze checklist data to categorize site condition
- Use key and associated protocol to identify target ecological community
- Hone in on tree and shrub palette

- Update log of potential sites with decision
- Shapefile
- Site design narrative
- Rough EE (contractor sites)

- Updated Site Design shapefile (target community and site condition)
- Detailed RSA data storage?

NYC Parks

Site Assessment Checklist:

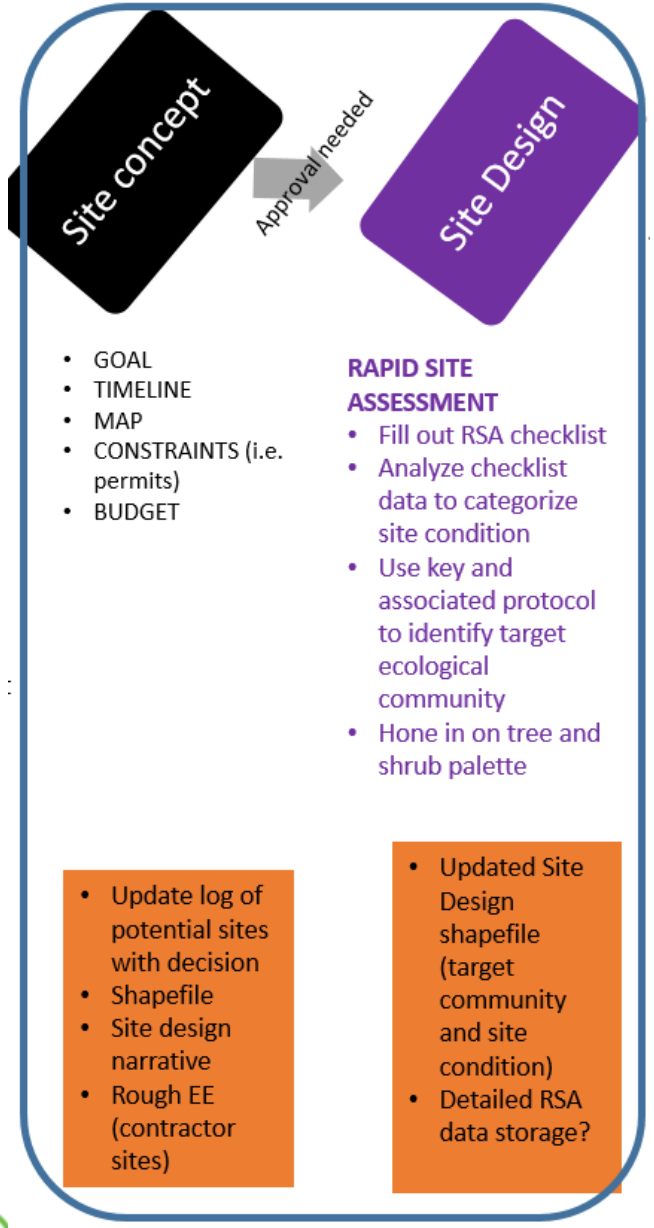
Site ID:	Park name:				Start time: End time:
Staff names:					Date:
Site information	**<5%**	**5-25%**	**26-50%**	**51-75%**	**76-100%**	**Comments/ Suggested Work & General Site notes:**
Dumping/ Trash						
Coarse woody debris						
Deer evidance						
Social Use (party, hang out vandalism, trails, desire lines)		☐ Yes ☐ No	ATV, Motorized or Un-motorized biking		☐ Yes ☐ No	

Overstory, Midstory and Seedlings in all observation points

Observ. Point #	Species Code	< 2 cm (seedling)	2-10 cm at DBH	10-30 cm at DBH	30-50 cm at DBH	50-70 cm at DBH	>70 cm at DBH	Invasive Vines Present Y/N

List of all species and their individual coverage in the entire site

Species Name	<5%	5-25%	26-50%	51-75%	76-100%



NYC Parks

WORK

Approval needed

Planting or project completion

- Invasive plant removal
- Debris removal
- Trail closure or formalization
- Volunteer engagement
- All actions documented in Tracking Database

- Project completion
- Includes seeding
- Trail formalization
- Volunteer engagement
- Planting occurs here (climate-adapted palettes)

TDB markups

Shapefile of planted area

NYC Parks

Post-work assessment

RAPID SITE ASSESSMENT

- Fill out RSA checklist
- Analyze checklist data to reclassify site condition
- Occurs within one year of planting
- Annually or biannually thereafter (replace past planting site inspections)

Updated planting area shapefile (site condition at time of monitoring)

NYC Parks

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Forests Are Healthy

People Benefit from Forests

Forests Are Supported

Natural Areas Conservancy

NYC Parks

Forest Management Framework for New York City

Natural Areas Conservancy

Central Park
Manhattan

840 acres

Central Park Conservancy

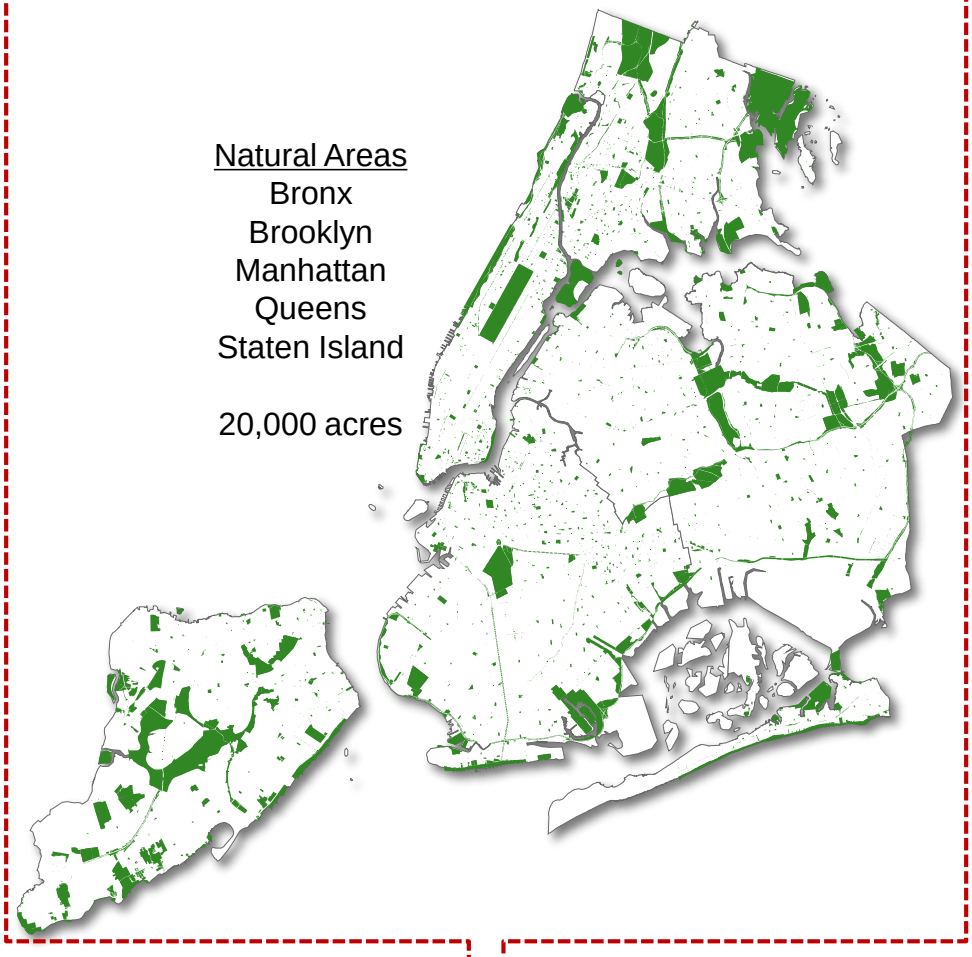
Prospect Park
Brooklyn

585 acres

Prospect Park Alliance

Natural Areas
Bronx
Brooklyn
Manhattan
Queens
Staten Island

20,000 acres



Natural Areas Conservancy

Natural Areas Conservancy

Forests Are Healthy

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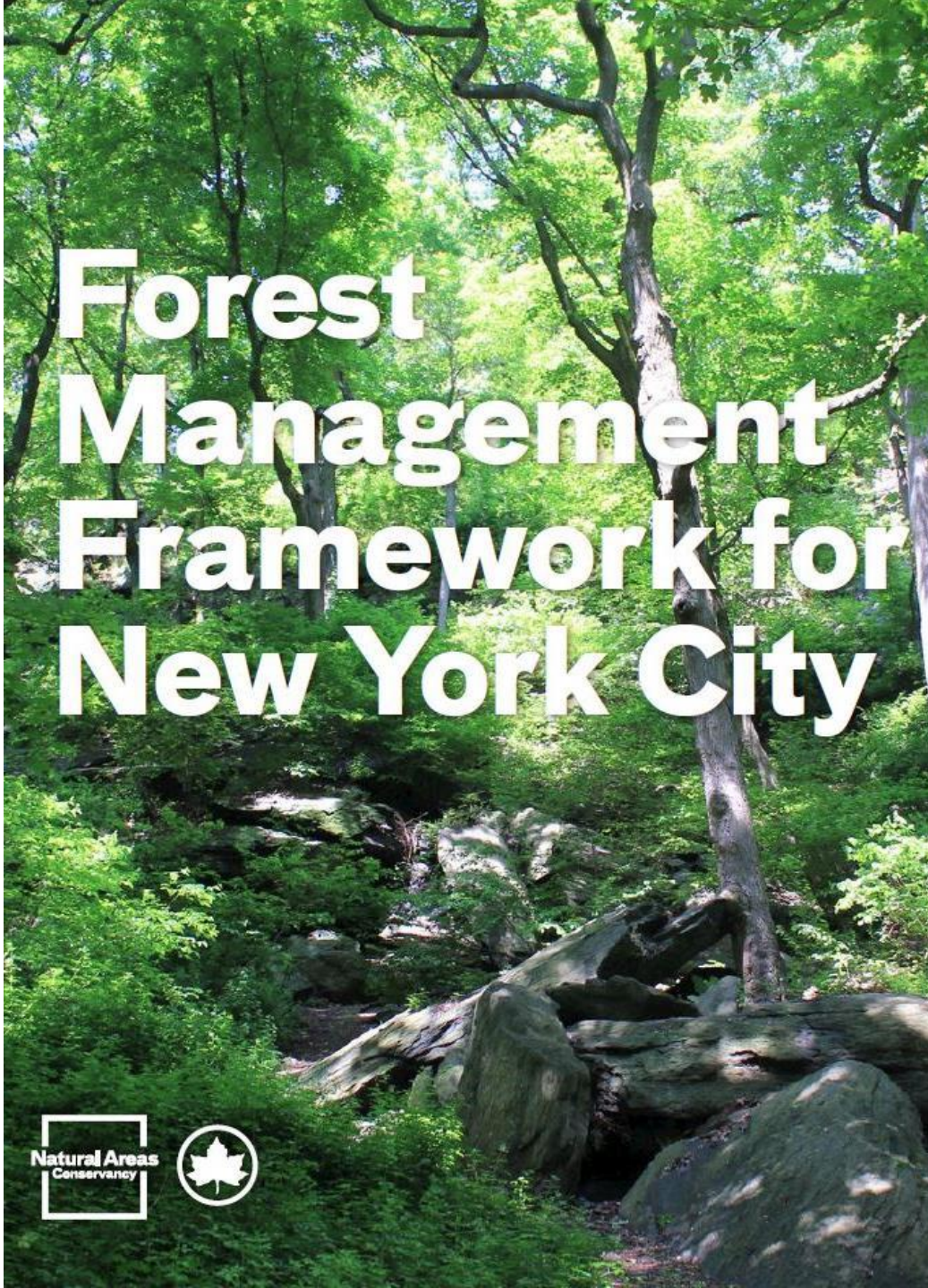
Forest Management Framework for New York City



Forest Management Framework for NYC

Healthy forest that is fully supported socially and financially.

- Biological health - comprehensive management
- Recreation, volunteerism, and green jobs

Goal: 100% Active Management

Requires $385 million over 25 years

www.naturalareasnyc.org/forests

Natural Areas Conservancy

Advocating for Increased Investment

State of Good Repair – ¼ of NYC Parkland is natural forests that are insufficiently managed

Equity – Investing in trails would offer many people new forms of recreation and enjoyment of nature.

Climate Resilience – NYC's forests are critical to protecting us from climate change. 5 million of NYC's 7 million trees are in natural forests.

Investment is Needed – NYC's natural forests are at a tipping point. Increased management is needed.

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NYC Parks

From Planning to Action

Natural Areas Conservancy

Implementation by NYC Parks

NYC Parks has adopted Forest Management Framework. Including:

- Pre/post monitoring of all restoration and management activities
- Proactive site selection
- Estimate costs of future projects based on citywide model

Natural Areas Conservancy

Conservancy Engagement

- Align the work of individual conservancies with goals of NYC Parks and Framework
- Develop 5-year management goals for each park
- Create a list of priority restoration projects (including a locator map, project description and cost estimate
- Train staff in monitoring protocol and data management
- Worked with Prospect Park Alliance and Forest Park Trust in 2018.

Natural Areas Conservancy

Adapting to Climate Change

Climate Impacts Addressed

Increased temperature

Stronger storms

Increased drought

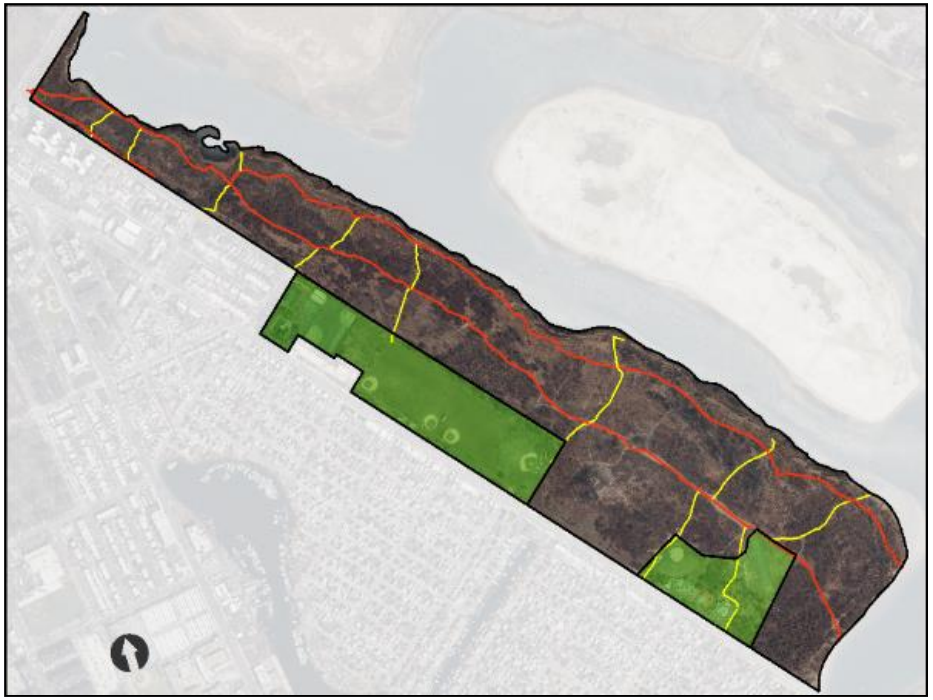
Project Results

Tool to assist foresters to select climate adapted species

Natural Areas Conservancy

Making Nature Accessible: Trails

- Create new recreation opportunities
- Job training + volunteerism
- Increase forest health
- Formalize 5 trails per year



Beyond New York City

Natural Areas Conservancy

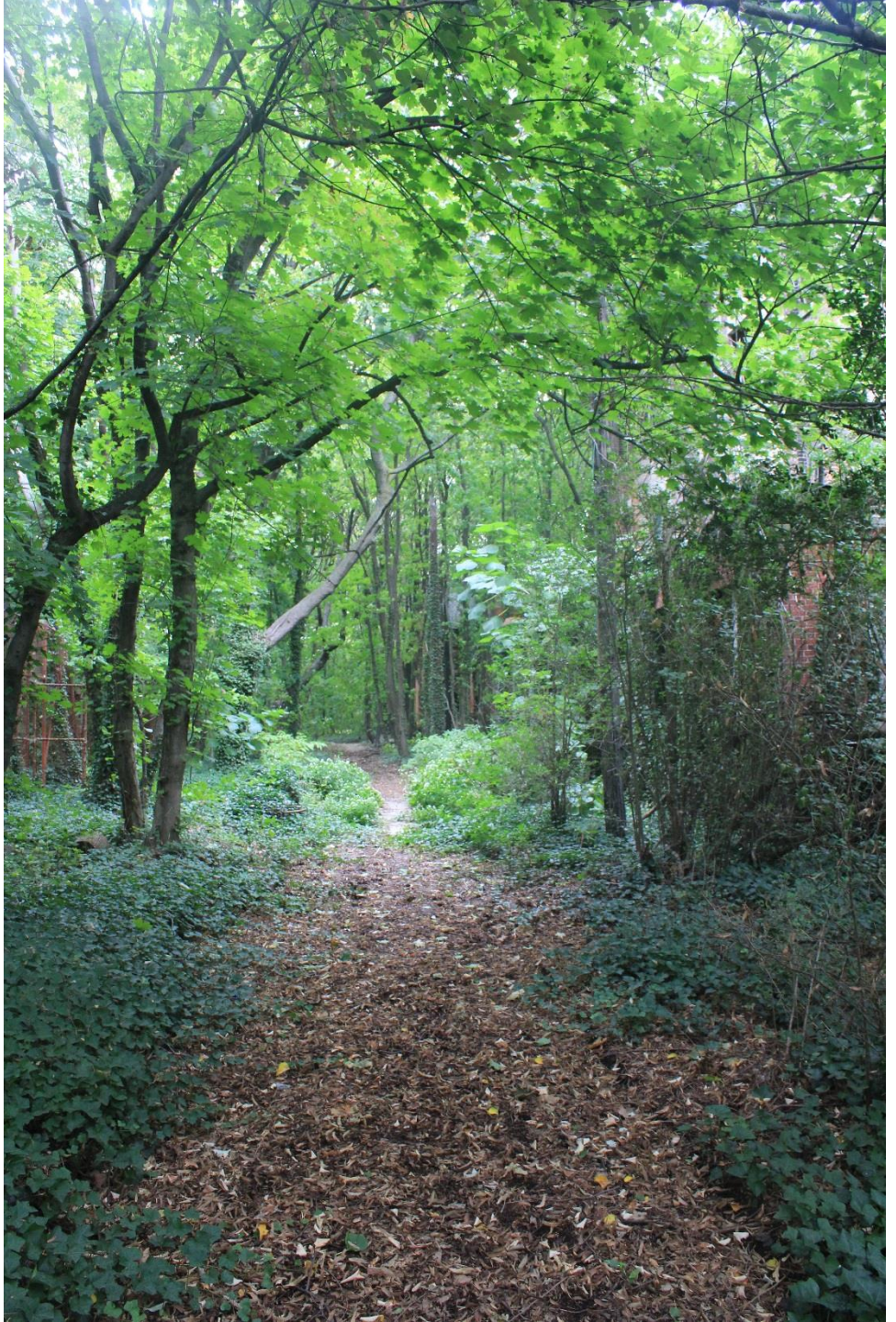
Importance of Urban Forests in Addressing Climate Change

Extreme heat kills more people than hurricanes, flooding and storms combined.

Urban forests lower local temperatures by up to 10 degrees Fahrenheit.

Urban forests save $4.7 billion in electricity and $3.1 billion in heating costs each year.

And they’re good for communities and individuals!



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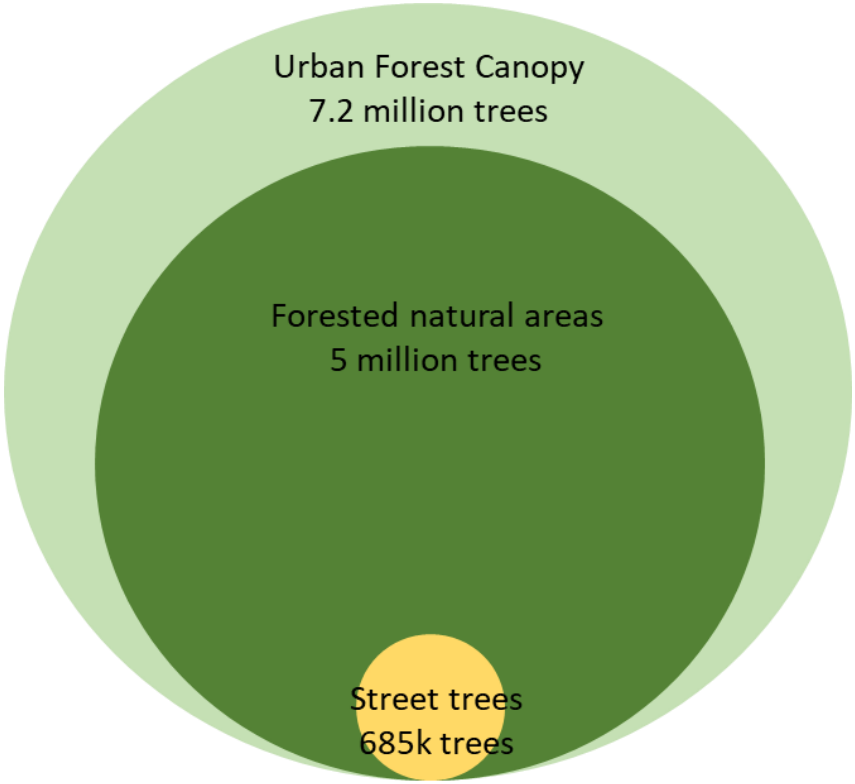
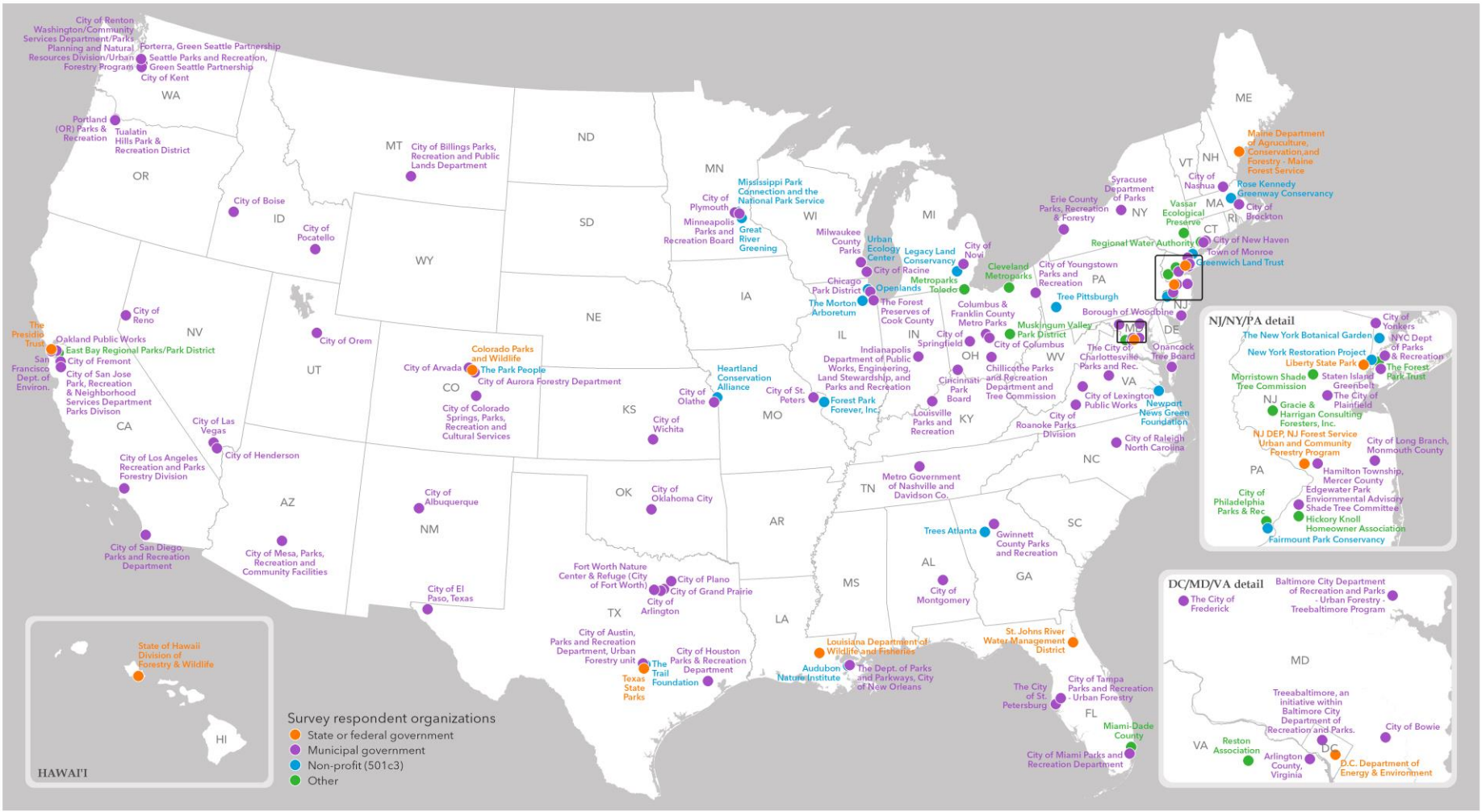
It’s More Than Street Trees



In NYC:

Forested natural areas – 85% native (natural regeneration)

Street trees – 43% native (planted)



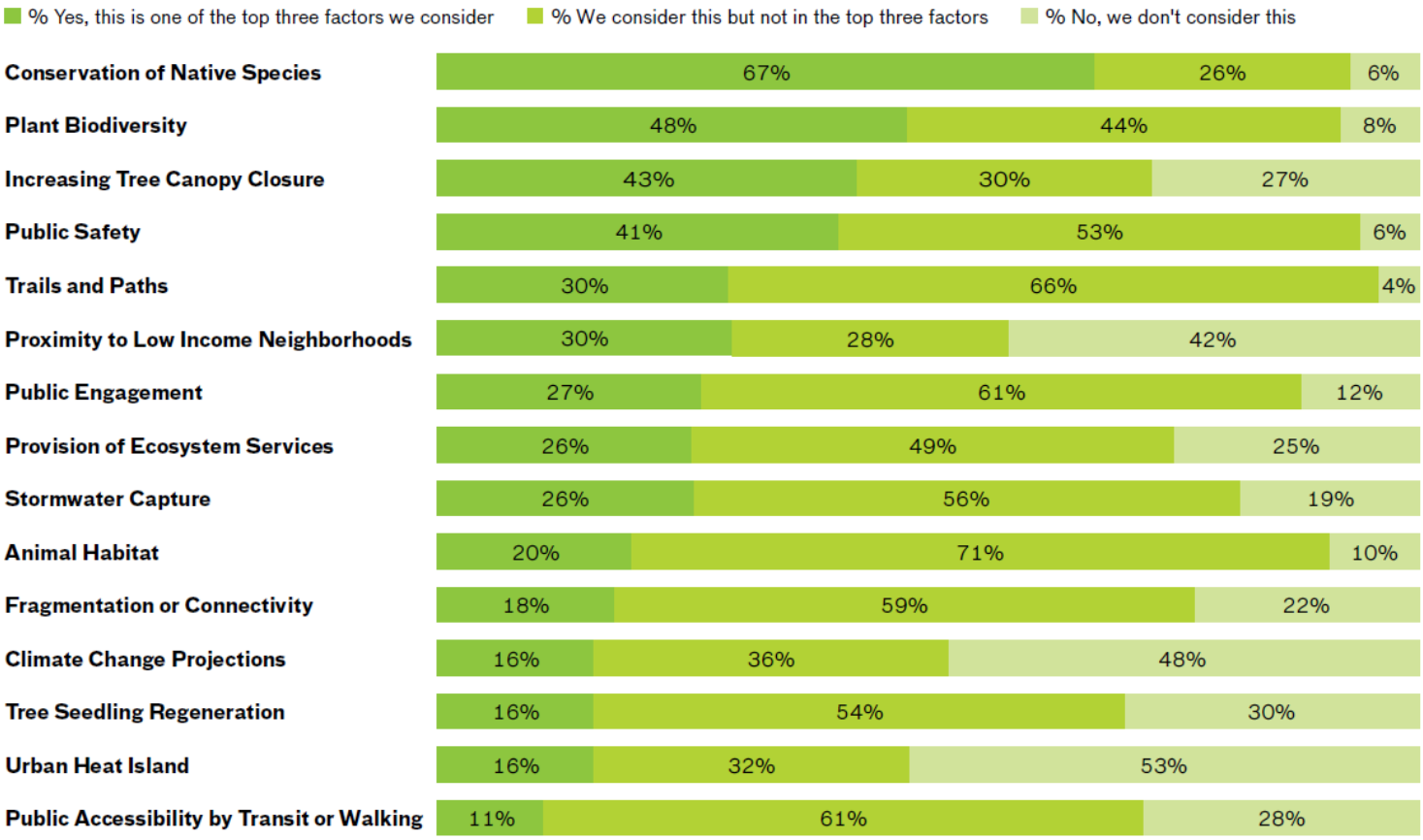
Organizations that work in urban forested natural areas

Survey data provided by the Natural Areas Conservancy. Information on this map is provided for purposes of discussion and visualization only. naturalareasnyc.org www.tpl.org

- 84% of urban parkland are Natural Areas*. That's 1.7 million acres of natural areas in cities
- 82% of North Americans live in urban areas – that's 250 million people!

What Factors Do You Consider in Decision Making?

The proportion of factors considered in decision making by responding organizations.
Each organization ranked the importance of the factors and the top three factors are shown.



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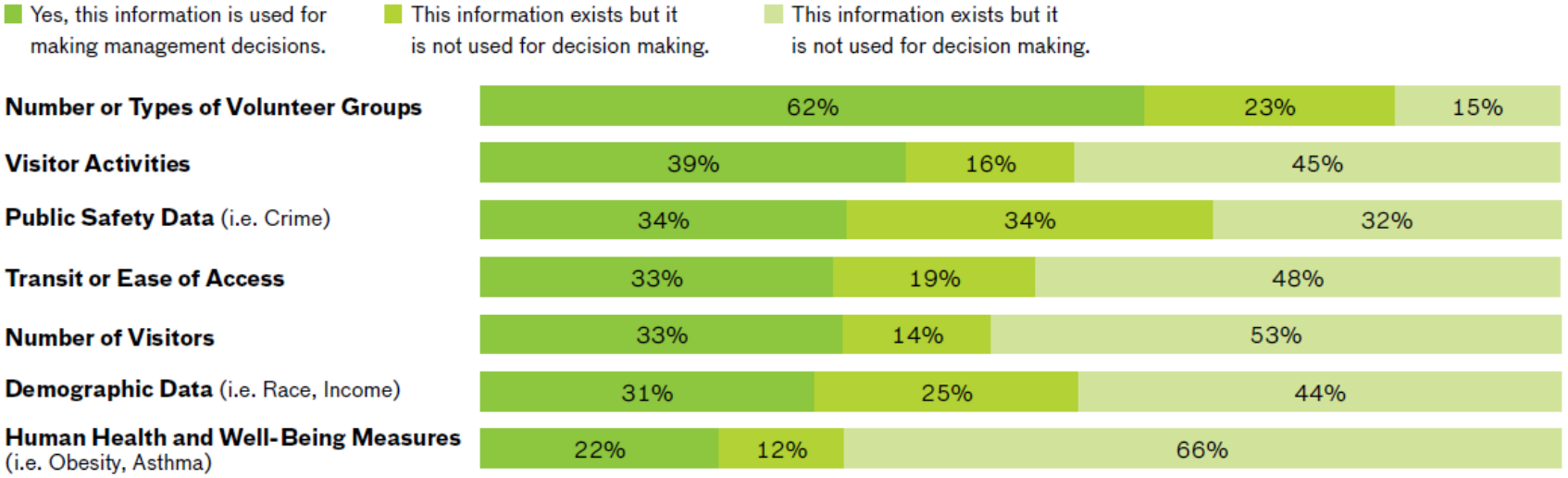
Social Baseline

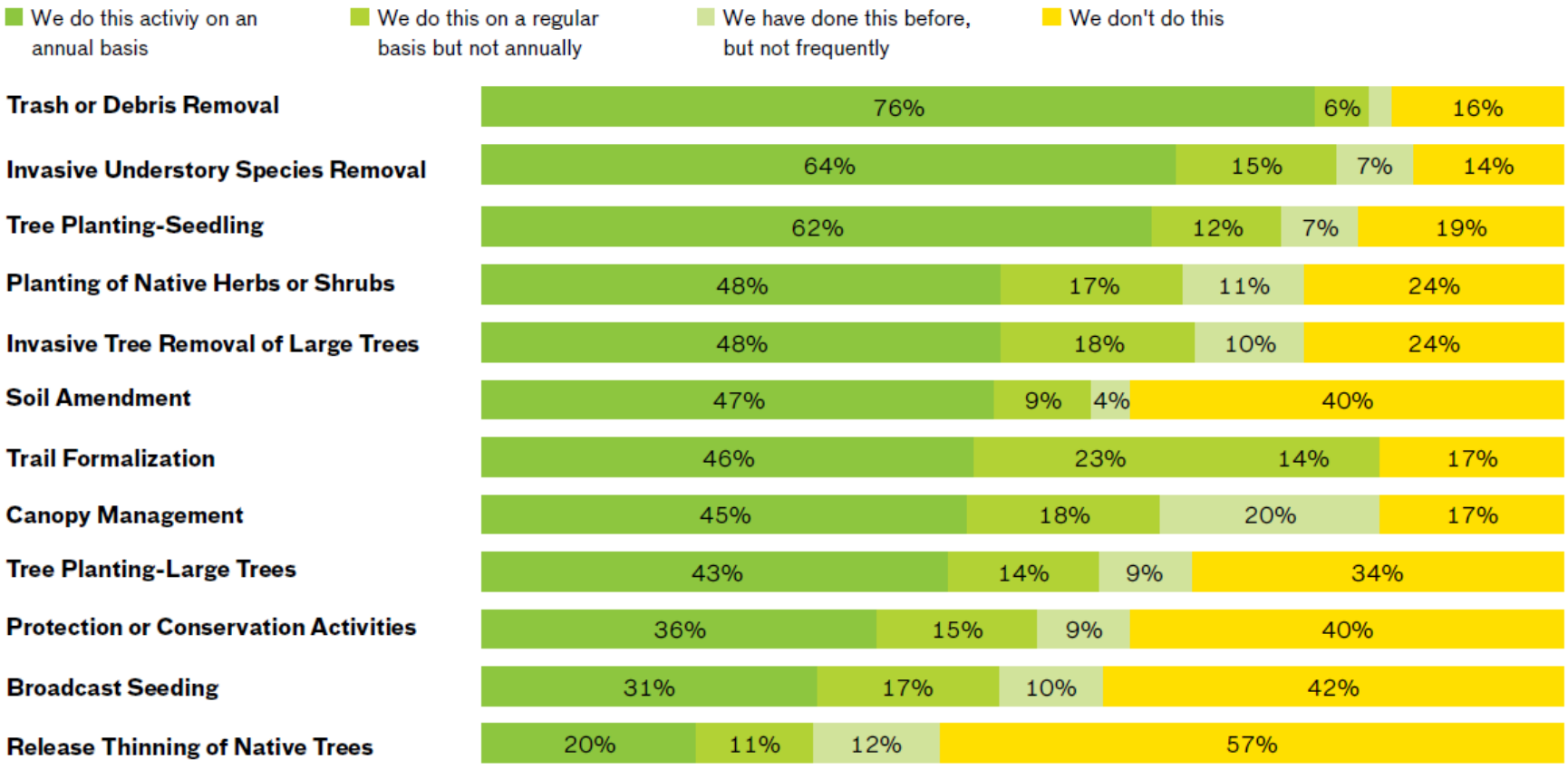
Proportion of respondents that have each type of ecological baseline data available and use it for decision making.



Natural Areas Conservancy

Types and Frequency of Management Activities

Proportion of respondents that conduct each management activity



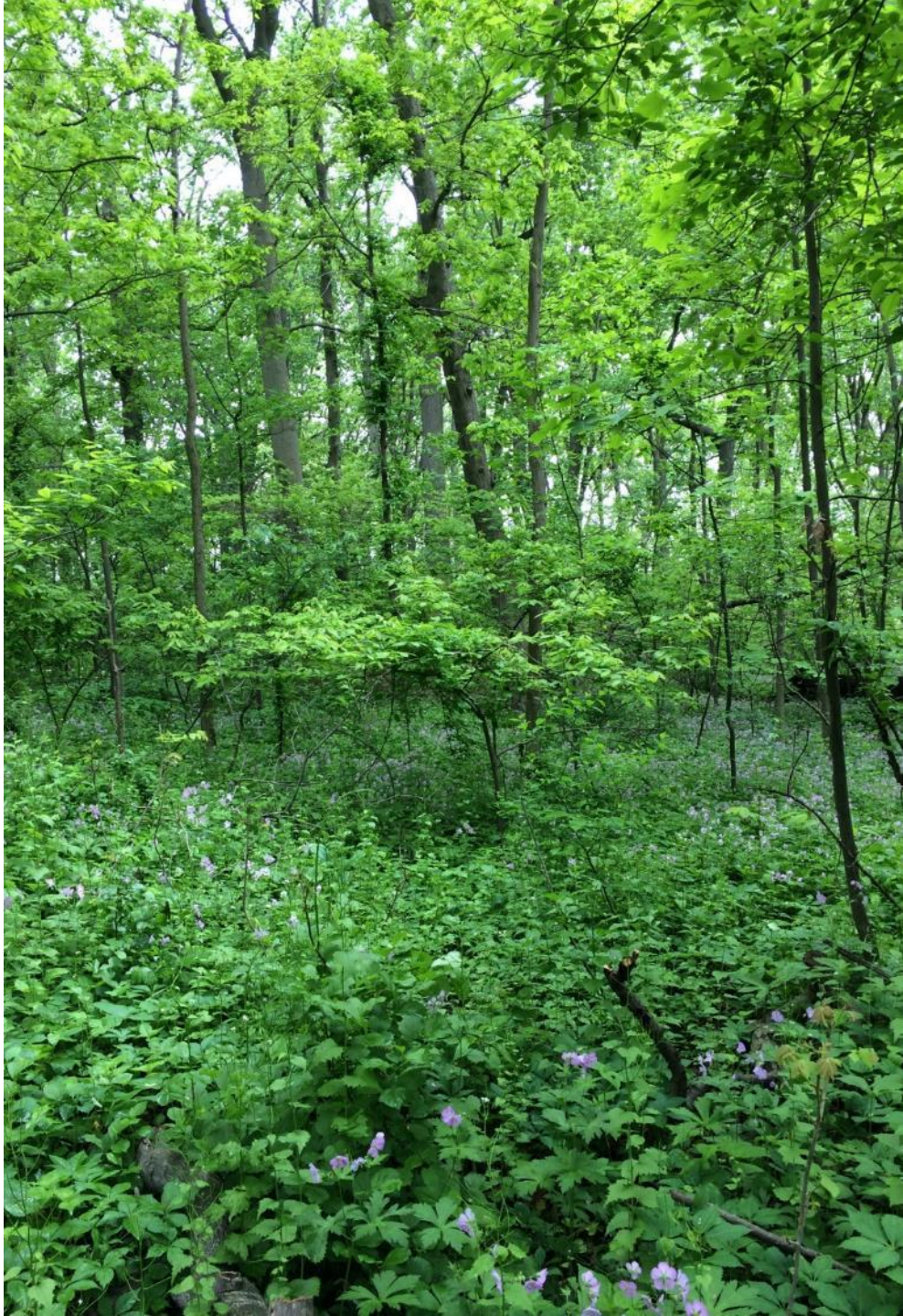
Natural Areas Conservancy

What We Learned?

Cities need best practices for management of natural areas.

Cities are disconnected and are working in silos – limited connection between resiliency efforts and natural areas management.

People value access to nature, but many urban natural areas are underutilized – need better design and more programming.



Natural Areas Conservancy

Opportunities

Forest management as a climate solution

Expand trails and access

Strengthen connection to public health

Expand funding for urban natural areas management

Bridge science and practice – tools + best practices

Learn More: www.naturalareasnyc.org

Natural Areas Conservancy


Thank You!