Reading the Landscape: Citywide Social Assessment of New York City Parks and Natural Areas in 2013-2014

Social Assessment White Paper No. 2

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Executive Summary

In 2001, the New York City Department of Parks & Recreation (NYC Parks) Natural Resources Group created the Forever Wild Program to protect nearly 9,000 acres of forests, wetlands, and meadows citywide. Although these areas were set aside over a decade ago, we have little systematic evidence about how park visitors view, use, and value parks with these resources.

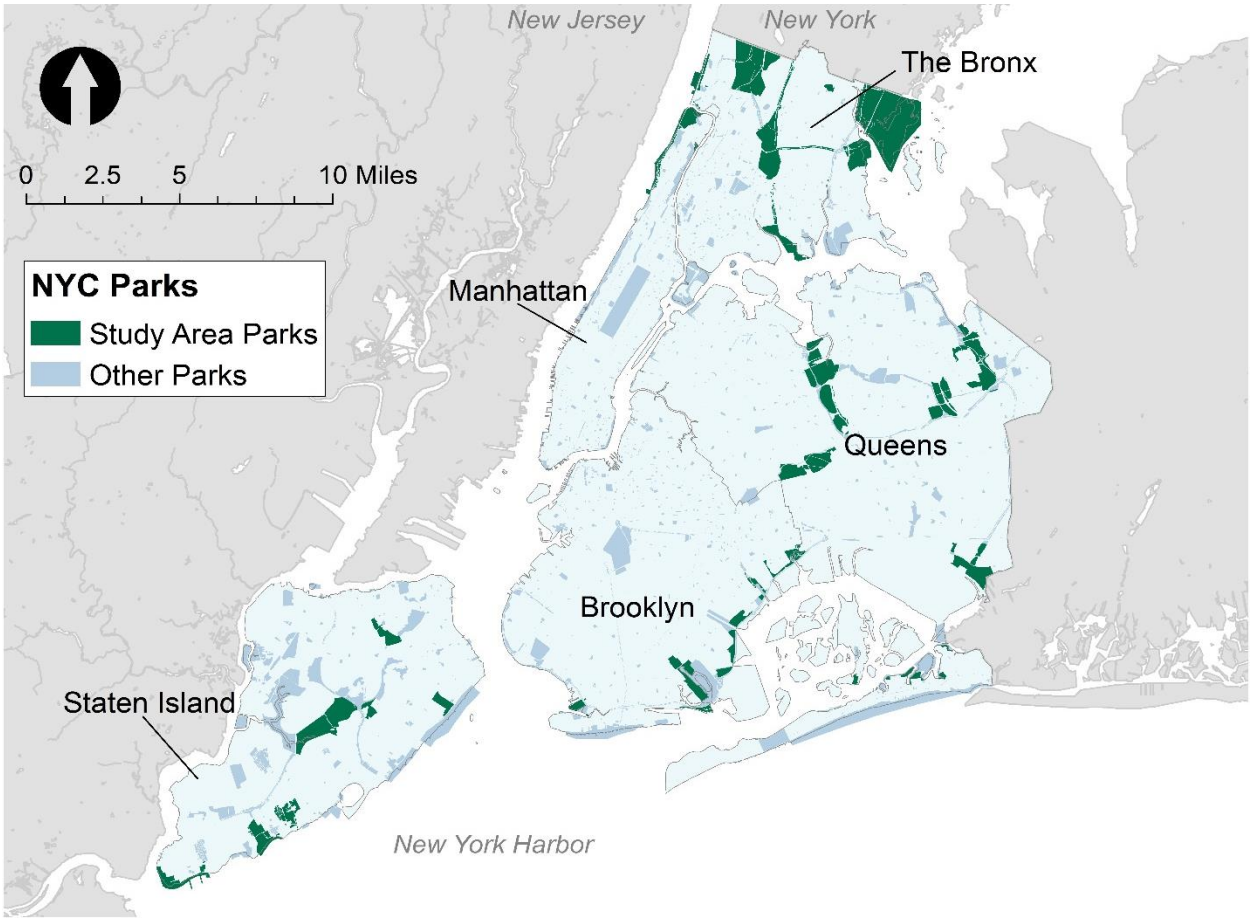
In 2013, an interdisciplinary team of scientists and natural resource managers at the New York City Urban Field Station embarked on a study to investigate the social dimensions and value of public green space in New York City. This study, a Citywide Social Assessment of New York City Parks and Natural Areas, explores approximately 9,000 acres of New York City parks in an effort to better understand the social meaning of these green spaces. Better understanding how urban parks are used and valued can provide insight into how all parks can best serve visitors in a rapidly changing environment.

The 2013-2014 Citywide Social Assessment

This report presents a project overview and research findings from the **Citywide Social Assessment of New York City Parks and Natural Areas in 2013-2014**. The **Introduction** provides a justification for the research and background information on ecological and social context of the study area. The **Study Area** section includes a map of the research area and an outline of sites included in the citywide social assessment. The **Methods** section presents a narrative description of the mixed-method approach to field observations and interviews with park users. Here we introduce both the system for moving through large areas of open space and the techniques for making and recording observations. The **Findings** section synthesizes findings by major themes of the research: park use, connectivity, meaning, stewardship, sociability, and perceptions and use of natural areas. The final sections, **Next Steps and Conclusions,** return the research to its context, discussing connections to existing knowledge, and implications for natural resource management and community well-being in New York City and other cities. A complete set of research protocols are included in the **Appendices**.

The report is a companion piece to the **Social Assessment of Parks and Their Natural Areas in Jamaica Bay Communities** (Svendsen et al. 2015), which took place in 2013. A third and separate report includes individual **park profiles** from all 39 park locations studied during 2013-2014. All park profiles include a site map and synthesis of our findings with illustrative photographs and summary tables and graphs. The profiles are arranged in alphabetical order by borough. All three reports are available for download on the New York City Urban Field Station web site, http://www.nrs.fs.fed.us/nyc/.

Study Area:
This map represents all parks assessed as part of the 2013-2014 Citywide Social Assessment and the 2013 Jamaica Bay Social Assessment.



Key Findings:
Summary findings of the 2013-2014 Citywide Social Assessment include:

- ***Parks are highly social spaces that support an important number and range of activities that are beneficial to human beings (p.18).*** *Nearly one-third (31.3%) of park users were observed socializing with friends and family, an indicator that parks can be platforms for strengthening social cohesion. Specifically within natural areas, we observed not only walking, hiking, and nature recreation, but also other practices that strengthen well-being through artistic expression, personal reflection, memorialization, and spirituality.*

- ***Number of park visitors is strongly correlated to park size, number of amenities, activities observed (p.22).*** *Over three summertime data collection visits, we observed 36,000 park users; of these, 63% were in parks larger than 400 acres. This figure does not include the flagship parks of Central Park and Prospect Park.*

- ***Across all age groups, parks are local resources and part of New Yorkers' everyday lives (p. 26).*** *New Yorkers use parkland throughout their lives as we observed all age groups enjoying NYC*

parks. Across both the full park areas and within natural areas only, 69% of users visit on a daily or weekly basis. Approximately one-third (29%) of respondents live within five blocks of the park they were visiting, while at the same time, 44% traveled more than 20 blocks to reach the park.

- ***Park users make connections between their local parks and a network of other green and blue spaces in the city and region (p. 28).*** *Parks serve as ecological corridors, and human park users serve as social connectors between outdoor sites. When asked where else they visit in the outdoors, over a third of respondents (37.3%) named other parks across New York City, showing how important the NYC park system is to visitors. Many park users (27.4%) also visited beaches and natural areas throughout the region and beyond, and approximately one-fifth of respondents (19.8%) said that they visit "nowhere else" besides the park in which they were interviewed.*

- ***Park edges can be an indicator of nearby communities' feelings of ownership or attachment to the park and their private property (p. 30).*** *Just as the "Parks Without Borders" effort is re-envisioning the design of edges and site lines in neighborhood parks to create enhanced user experiences, so to do the edges of natural areas offer an opportunity to create inviting entrances, clear wayfinding, and accessible nature experiences.*

- ***Parks are a crucial form of 'nearby nature' that provide space for activities, recreation, socialization, and engagement with the environment, and support social ties and place attachment (p. 33).*** *The primary reason that 42.4% of respondents gave for visiting parkland is that it is local or nearby, showing the importance of accessible neighborhood greenspace in a variety of forms from playground, to ball field, to forest, to wetland. Particularly in natural areas, users cited the importance of connecting with nature and the outdoors (22.9%) and experiencing refuge (16.2%).*

- ***The majority of adult park users currently do not participate in formal environmental stewardship groups, but information about other forms of engagement and barriers to stewardship provides insight on potential for increasing stewardship (p. 37).*** *There is an opportunity to build upon the 14.7% of park users who already engage in 87 different environmental stewardship groups through additional outreach strategies and programs that overcome challenges of time constraints and lack of awareness. Novel partnership with other forms of civic groups, including religious institutions and youth groups for example, present opportunities to engage new users in stewardship.*

- ***Natural areas are beloved and used by many, but not all New Yorkers (p. 43).*** *The majority of respondents interviewed (56.6%) visit woods, wetlands and trails. Out of the respondents who visited natural areas, the top three most common activities were walking (51.4%), nature recreation (24.4%), and exercise (15.7%). Those that do not visit cited personal preferences about how they like to recreate (45.3%), lack of awareness about natural areas (30.8%), or concerns about safety and accessibility (18.8%).*

Introduction

Urban parks play an important role in lives of urban residents and visitors to urban areas. Many urban parks contain "natural areas" or forests, wetlands, and meadows that are distinct from the more programmed and landscaped areas of the park. New York City natural areas in particular provide refuge to over 200 species that are federally and/or state listed, including the piping plover and seabeach amaranth, as well as the newly identified Atlantic coast leopard frog. At the same time, parks and their natural areas offer specific and unique benefits to the 8.4 million people living in New York City, as well as other visitors who come from further afield to enjoy the area.

In 2001, the New York City Department of Parks & Recreation (NYC Parks) Natural Resources Group created the Forever Wild Program to protect nearly 9,000 acres of forests, wetlands, and meadows citywide. Although these areas were set aside over a decade ago, we have little systematic evidence about how park visitors view, use, and value parks with these resources. In general, urban natural areas are understudied compared to rural counterparts even though many of the factors that influence natural areas are magnified in urban settings (e.g., invasive species introductions, increased population density, pollution, warming, elevated carbon dioxide, nitrogen deposition). Thus, better understanding how urban parks are used and valued can provide insight into how all parks can best serve visitors in a rapidly changing environment.

To investigate and ultimately support the many social values of public green space in New York City, our interdisciplinary team of scientists and natural resources managers have conducted a **Citywide Social Assessment of New York City Parks and Natural Areas**. This study explores approximately 9,000 acres of parks in New York City in an effort to better understand the social meaning of these green spaces. Often, park studies reflect only the biophysical properties of a particular site; however, managers and decision-makers also need data that reveal the meaning and function of these sites for park users and explore how these functions vary across a range of biophysical and built conditions. This research provides extensive social data that are a necessary complement to the ecological datasets available through remote sensing and biological field work, specifically a citywide ecological assessment of natural area parkland by the Natural Areas Conservancy (NAC). This social assessment seeks to understand park use and social meaning through systematic site observations and interviews with park users. We focus on individual perceptions of parkland and examine the social meanings of green spaces. We find that many of the ecosystem services produced by the interaction between people and parks include social cohesion and space for personal reflection alongside improved air quality, stormwater retention, and wildlife habitat. The intent of this study is to capture the enduring patterns of why, how, when, and where urban residents engage with the outdoors in New York City.

In this study, our **primary research question** asks:

What are the uses, functions, and values of parkland and natural areas as conveyed through people's park *behaviors*, *descriptions*, and *narratives*?

Study Area

New York City has one of the largest and most diverse park systems in the United States, with 29,000 acres of parkland citywide (City of New York 2011). Out of that, nearly 9,000 acres are designated as Forever Wild Preserves or Forever Wild Natural Areas.

For this paper, we selected parks from all five boroughs that fell into three main categories:

- Class 1: Parks larger than 400 acres that contain Forever Wild-designated land (excluding Central Park and Prospect Park because these have a different governance structure due to the presence of formal conservancies),
- Class 2: Parks under 400 acres that are greater than 80% Forever Wild-designated land, and
- Class 3: Parks under 400 acres that are less than 80% Forever Wild-designated land.

All Class 1 parks were assessed. In each borough, at least two parks in Class 2 and two parks in Class 3 were assessed. Once all of these parks were completed, the crew continued assessing additional parks that were selected as priorities by managers. The final list of parks assessed in 2013-2014 is in **Table 1** and shown in **Figure 1**.

We excluded the following from our study area:

(1) sites that contained no Forever Wild-designated land
(2) sites not accessible by foot, vehicle, or bicycle;
(3) golf courses, museums, and community gardens, whose physical form and use patterns require a different protocol; and
(4) parks closed for construction or inaccessible to the public as parkland.

Table 1. Characteristics of assessed NYC parks

Park	Acreage*		Amenities								Habitat Type			
	Total	Forever Wild	BBQ	Beach	Bicycling	Dog Park	Nature Center	Playground	Sports	Water Access	Uplands (Forest/Meadow)	Landscaped Parkland	Wetland	Year Sampled
Bronx	**3451**	**1769**												
Bronx Park	132	20			×	×		×	×	×	×	×	×	2014
Pelham Bay Park	2031	1104	×	×	×	×	×	×	×	×	×	×	×	2014
Riverdale Park	53	48			×	×					×		×	2014
Seton Falls Park	34	34						×	×		×		×	2014
Soundview Park	155	47			×			×	×	×	×	×	×	2014
Spuyten Duyvil Shorefront Park	9	7									×			2014
Van Cortlandt Park	1037	509	×		×	×	×	×	×	×	×	×	×	2014
Brooklyn	**1048**	**505**												
Calvert Vaux Park	78	17						×	×	×		×	×	2014
Canarsie Park	130	55				×		×	×			×	×	2013
Four Sparrow Marsh	50	46								×	×		×	2013
Fresh Creek Nature Preserve	40	38							×	×			×	2013
Marine Park	678	341			×	×	×	×	×	×	×	×	×	2013
McGuire Fields	72	8							×			×	×	2013
Manhattan	**285**	**167**												
Fort Washington Park	103	34	×		×	×		×	×	×	×	×		2014
Inwood Hill Park	175	127	×			×	×	×	×	×	×	×	×	2014
Sherman Creek Park	7	6								×	×			2014
Queens	**2481**	**1153**												
Alley Pond Park	494	404	×		×		×	×	×	×	×	×	×	2014
Brant Point Wildlife Sanctuary	9	4											×	2013
Broad Channel American Park	17	6		×					×	×		×	×	2013
Brookville Park	64	2	×		×			×	×	×	×	×	×	2013
Cunningham Park	374	255	×		×	×		×	×		×	×	×	2014
Dubos Point Wildlife Sanctuary	32	32								×			×	2013
Flushing Meadows Corona Park	693	50	×		×	×		×	×	×	×	×	×	2014
Forest Park	496	262	×		×	×	×	×	×	×	×	×		2014
Idlewild Park	120	96							×	×	×	×	×	2013
Jamaica Bay Park	64	11		×						×			×	2013
Spring Creek Park	118	31							×	×	×	×	×	2013
Staten Island	**1659**	**1297**												
Blue Heron Park	204	199			×		×				×		×	2014
Clove Lakes Park	174	109	×		×	×		×	×	×	×	×		2014
Conference House Park	141	121		×	×	×	×	×		×	×		×	2014
High Rock Park	89	85					×				×		×	2014
La Tourette Park	714	523			×		×		×	×	×		×	2014
Ocean Breeze Park	124	72				×					×		×	2014
Wolfes Pond Park	213	188	×	×	×	×		×	×	×	×	×	×	2014
Total	**8924**	**4891**												

*Total acreage was calculated using NYC Parks park_property.shp, with water bodies removed from acreage using the city_DPR_Hydro_Region_2001 feature class. Forever Wild acreage was calculated using the Natural_Areas.shp and Preserves.shp, clipped to park_property.shp and with water bodies removed from acreage. Removing water bodies through this process resulted in land acreage estimates smaller than official park acreage estimates.

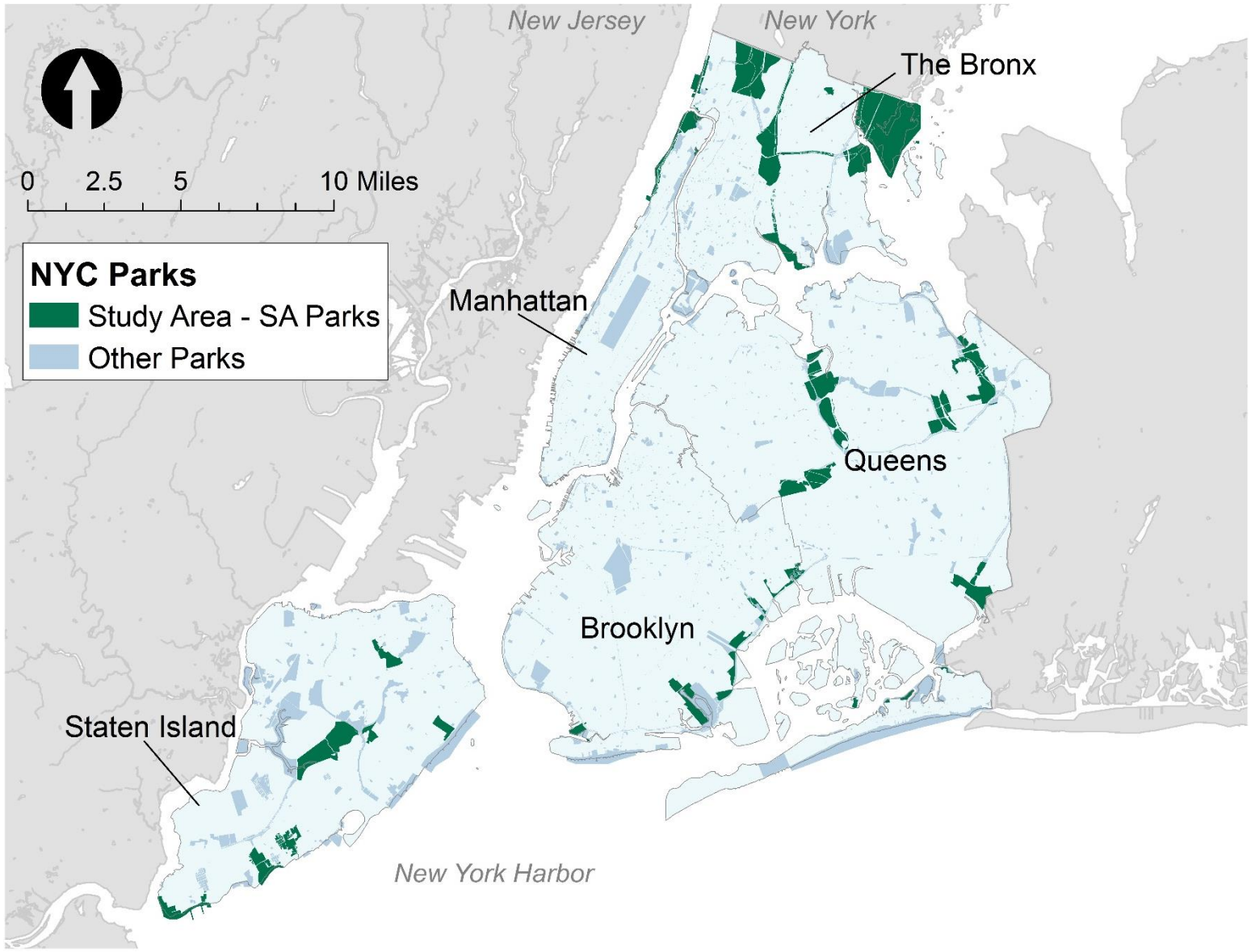


Figure 1. Map of NYC parks in the 2013-2014 citywide social assessment

Methods

This study was developed in an adaptive management context and conceived by researchers in conversation with NAC and NYC Parks managers. Adaptive management is a systems approach to resource management that, like resilience, was conceptualized by Holling (1978). Adaptive management is useful under conditions of uncertainty, enabling managers to adjust management techniques in a structured fashion (Williams 2011). Assessments are linked to the earliest stage of adaptive management – understanding – which is followed by planning, monitoring, and evaluation in the adaptive management feedback loop (Moser and Ekstrom 2010). From the early stages of question formulation, to protocol development, to preliminary findings, to the development of outputs, researchers consulted with natural resource managers, sought their input, and incorporated feedback. This was particularly crucial during the development of Park Profiles, which were designed to inform and serve managers directly.

Social and site data were collected in order to understand how urban park users value and engage with parks. Primary means of understanding were direct observations of human actions, observations of signs of human use, and assessment of language and narrative conveyed through interviews with park users.

The first phase of the project consisted of gathering relevant spatial data, conducting preliminary background informal interviews with knowledgeable NYC Parks and NAC staff and community informants, ground-truthing and scouting park sites, and developing and pre-testing all field observation protocols.

The second phase involved conducting field observations in NYC parks and natural areas in the Jamaica Bay region in 2013. Two field research supervisors led the data collection effort during June-September 2013. During July 2013, we worked with one team of 10 members from the Jamaica Bay Restoration Corps, who were fully trained in social and site assessment of large parks sites. This team of 10 was further broken down into five two-person field teams.

The third phase involved expanding field observations in NYC parks and natural areas citywide in 2014. Five field researchers led the data collection effort from June-August 2014, and two of the remaining field researchers continued data collection until September 2014. For two weeks in July 2014, we were joined by two interns from the National Hispanic Environmental Council.

Pairs were always used in order to enhance reliability through corroboration and to provide greater richness of daily debriefs and qualitative field notes. In addition to paired debriefs, full team debriefs were conducted at the end of each day in order to gather overall impressions, observations, and questions about sites as a whole. An end-of-season debrief was held with the full team, and field researchers participated in drafting narratives for park profiles and documenting particularly salient vignettes.

Data Collection

Drawing upon previous urban park research (e.g., Loukaitou-Sideris 1995, Chiesura 2004), we triangulated three data collection approaches: *direct observations of human activities*, *observations of signs of human use*, and *interviews with park users*. Human activities were grouped functionally by type (e.g. sitting, socializing, bicycling, exercise, nature recreation). We utilized two field observation protocols and one protocol for field interviews with park users (Appendices A-D). Field observation

protocols guided a mix of structured, quantitative counts; qualitative field notes; and photographic documentation:

1. Parks interior observation protocol
2. Parks edge observation protocol
3. Interview protocol (implemented only inside park boundaries)

Figure 2. Zone delineation in Conference House Park, Staten Island, NYC

The *parks interior observation protocol* (Appendix B) was implemented in the interiors of parks, which were subdivided into zones according to management practices, uses, infrastructure, and cover type (**Figure 2**). The park interior is defined as the area inside of the park boundary. Pairs implemented the protocol, taking photographs and logging observations of park users and signs of park use, with debriefs conducted at the completion of a zone and at the end of a day of fieldwork. Research crews covered all terrain that was navigable without extensive bushwhacking, following all established trails and desire lines within each park site before moving onto another site. Crews were instructed to complete zones in a single day (i.e., not to split zones across visits).

The *parks edge observation protocol* (Appendix C) was implemented along the edge of parks. The park edge is defined as the area directly adjacent to, but outside the park boundary. The park edge can serve as an inviting entry into the park or, in some instances, a barrier to park use. The protocol guided observations of the streetscape and properties adjacent to parks (**Figure 3**). While implementing the edge protocol, research crews were instructed not to make observations of the interior of the park in order to ensure that no double counting (of humans or signs) occurred. Crews did not conduct interviews on the edge but took detailed notes of all encounters with individuals who voluntarily approached them to speak.

Figure 3. From left to right: Edges of Bronx Park, Pelham Bay Park, and Seton Falls Park

Across all sites, inside parks and on the edge, *direct human observations* were collected in a consistent manner. Type of activity and level of sociability (individual, pair, small group, large group) were recorded for all people observed in a particular zone (e.g., **Figure 4**).

Figure 4. Park users working (left) and walking (right) in Flushing Meadows Corona Park

Observations of signs of human use were collected through attention to the following key areas: signs of activity; signs of neglect, decay, or damage; signs of environmental stewardship; and signage, writing, and art. See Detailed Methods and Definitions (Appendix E) and protocols (Appendices B-C) for examples of these categories. In other words, these signs are part of the traces that people leave behind in parks, offering important clues and insights into the use and value of a particular park or part of the park. Photos of key signs (as indicated with the camera symbol on the forms) were also collected.

Finally, the *interview protocol* was implemented in park interiors. Minors under the age of 18 were excluded from interviews and not approached. Researchers selected every third park user encountered and approached them for a rapid interview (Appendix D, **Figure 5**). This technique was used in order to introduce randomization and reduce selection bias (see Fisher et al. 2011). Interviews were voluntary and remained anonymous.

Figure 5. Interviewing a cyclist at Cunningham Park

The social assessment methods varied slightly from 2013 to 2014. In 2014, changes include tracking all protocols by zone (interview, signs, and activities), not only signs and activities. Edge observations were also more qualitative and focused more on the park side than the neighborhood side. We also added a question about natural area visitation, to complement assessment work being conducted by the Natural Areas Conservancy. For more details about differences between the 2013 and 2014 protocols, see Appendix A.

Data Analysis

We conducted quality assurance procedures by visually examining data for errors, discussing and resolving discrepancies, ensuring accurate data entry, and organizing data for analysis. In Excel, we created pivot tables to generate descriptive statistics (e.g., count, percentages) and analyze trends in quantitative field observations. Qualitative field observations and debrief notes were transcribed into Word documents. All photos were cataloged and organized by park, zone, and observation type. Interview responses were entered into Excel, with closed-ended questions and coded interview data summarized via pivot tables.

Open-ended interview data were analyzed qualitatively. Responses to questions were coded separately by two different researchers via an open coding scheme that identified key phrases and concepts (Lofland et al. 2005; Miles & Huberman 1994). Initial codes were compared and discussed, and discrepancies were examined using an iterative approach until consensus was reached among the coders, thereby enhancing reliability (Neuman 2003). Thematic clusters were then created to aggregate common codes together into broader themes. These clusters emerged out of key phrases, repeated language, and common ideas (Ryan & Bernard 2003). Specific subcategories were retained.

Once data were cleaned, they were combined into a personal geodatabase. Interview, activity, and sign data were associated with specific park polygons and, where possible, by park zone. The goal of this process is to develop a platform for examining park use and meaning across space, as well as facilitating long-term storage of these data. In addition to individual park narratives, we have included cross-park comparisons in order to reveal key patterns and differences in the data across the study area.

Findings

Park Profiles

Individual park findings are described in stand-alone park profiles posted on www.nrs.fs.fed.us/nyc**.**

System-Wide Analysis and Cross-Park Comparison

It is important that we understand these park sites at multiple scales: zones within the park, the park as a whole, the park in relationship to other parks spaces, and ultimately, to other neighborhood, city, and regional sites. In short, parks and people are part of a much larger socio-ecological system. Below, we describe findings at the citywide and borough level. When presenting graphs that compare all sampled parks, parks are listed from largest to smallest in area (top to bottom). We present these findings organized by the themes of the study:

- Park use
- Connectivity
- Meaning
- Stewardship
- Sociability
- Perceptions and use of natural areas (only available for parks sampled in 2014)

Park Use

Parks are highly social spaces that support an important number and range of activities that are beneficial to human beings.

Our counts of people engaging in directly observed activities offer a quantitative snapshot of what people are doing in urban parkland (**Table 2**, **Table 3**, **Figure 6**). Across the entire park, the most common activity citywide was *socializing in place* (31.6%). This category refers to people who were observed in groups solely sitting and talking in place (e.g. barbecuing, picnicking, or talking on a bench). It was not applied to people engaged in educational tours or sporting events; although these too are social activities, they were categorized more specifically as educational tours or sports.

The next most common activities citywide were *sports and recreation* (25.6%) and *walking* (18.5%), which is not surprising given that parks are designed to foster uses of this kind. At the same time, parks also serve as a space to be alone and to relax, as 7.2% of people citywide were seen *sitting, resting, or standing alone*. (See page 33 for an analysis of park meaning on the importance of refuge).

Many activities were concentrated in certain zones within the park. Some of the zone-based activities can be attributed to the physical design and infrastructure in the park (paths, playground equipment, sports fields, etc.) but other actions were emergent and represent adaptations by park users.

Within the Bronx and Manhattan, the most common activities largely mirrored citywide patterns. However, within Brooklyn, the most common activity was *sports and recreation* (31.3%) while in Staten Island, the most common activity was *walking* (32.4%). This information suggest that parks in different boroughs serve different uses and users.

Table 2. Counts of observed human activities from three visits in parks citywide and within each borough (entire park)

	Citywide		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
Activity	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Socializing in Place	11359	31.6%	4864	38.3%	747	15.2%	743	25.5%	4526	33.1%	479	26.3%
Sports & Recreation	9216	25.6%	2898	22.8%	1534	31.3%	649	22.3%	3856	28.2%	279	15.3%
Walking / Dog Walking	6657	18.5%	1886	14.9%	1095	22.3%	446	15.3%	2641	19.3%	589	32.4%
Sitting / Resting / Standing / Waiting	2578	7.2%	890	7.0%	613	12.5%	194	6.7%	805	5.9%	76	4.2%
Bicycling	2297	6.4%	403	3.2%	353	7.2%	644	22.1%	834	6.1%	63	3.5%
Nature Recreation	1185	3.3%	894	7.0%	92	1.9%	23	0.8%	113	0.8%	63	3.5%
Jogging / Running	1155	3.2%	231	1.8%	215	4.4%	151	5.2%	444	3.2%	114	6.3%
Working	812	2.3%	330	2.6%	162	3.3%	22	0.8%	211	1.5%	87	4.8%
Educational Group / Tour	379	1.1%	41	0.3%	60	1.2%	17	0.6%	198	1.4%	63	3.5%
Other Activity	318	0.9%	243	1.9%	16	0.3%	20	0.7%	38	0.3%	1	0.1%
Stewardship	29	0.1%			13	0.3%			16	0.1%		
Plant Collecting / Foraging	15	0.0%	7	0.1%			1	0.0%	2	0.0%	5	0.3%
Grand Total	**36000**	100.0%	**12687**	100.0%	**4900**	100.0%	**2910**	100.0%	**13684**	100.0%	**1819**	100.0%

Within Forever Wild-designated areas, the most common activities observed were slightly different (**Table 3**). Citywide, most visitors were *walking* (31.9%), *bicycling* (16.9%) or *socializing in place* (13.4%).

This pattern was observed in the Bronx and Brooklyn as well. In Manhattan, over half of users (52.9%) were *biking* through the Forever Wild areas while in Staten Island, there were fewer cyclists (3.4%) compared to *joggers or runners* (8.5%), people participating in *education tours or groups* (6.9%), people participating in *nature recreation* (6.5%), or people *working* in the park (6.3%). In Queens, there were also more *joggers or runners* (16.9%) than people *socializing in place* (6.0%). This shows that citywide, many users used natural areas as trails for hiking and biking, and socializing remains an important activity in Forever Wild-designated areas. There were also slight variations in the ways Forever Wild areas were used in the different boroughs.

Table 3. Counts of observed human activities from three visits in parks citywide and within each borough (Forever Wild areas only)

	Citywide		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
Activity	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Walking / Dog Walking	1209	31.9%	239	31.8%	173	27.7%	82	19.8%	401	37.1%	314	34.2%
Bicycling	642	16.9%	119	15.8%	53	8.5%	219	52.9%	220	20.3%	31	3.4%
Socializing in Place	506	13.4%	89	11.9%	70	11.2%	28	6.8%	65	6.0%	254	27.7%
Jogging / Running	412	10.9%	71	9.5%	27	4.3%	53	12.8%	183	16.9%	78	8.5%
Nature Recreation	274	7.2%	117	15.6%	62	9.9%	5	1.2%	30	2.8%	60	6.5%
Sports & Recreation	244	6.4%	18	2.4%	124	19.9%	11	2.7%	62	5.7%	29	3.2%
Working	196	5.2%	59	7.9%	46	7.4%	14	3.4%	19	1.8%	58	6.3%
Sitting / Resting / Standing / Waiting	155	4.1%	36	4.8%	49	7.9%	2	0.5%	44	4.1%	24	2.6%
Educational Group / Tour	104	2.7%							41	3.8%	63	6.9%
Other Activity	29	0.8%	1	0.1%	11	1.8%			16	1.5%	1	0.1%
Stewardship	9	0.2%			9	1.4%						
Plant Collecting / Foraging	8	0.2%	2	0.3%					1	0.1%	5	0.5%
Grand Total	**3788**	100%	**751**	100%	**624**	100%	**414**	100%	**1082**	100%	**917**	100%

Figure 6. Left to right: observed human activities in Broad Channel American Park, Pelham Bay Park, and Van Cortlandt Park

To detect patterns of prior use, we observed signs in the landscape made by park users and consider these to be indicators of activity and engagement with the space (**Table 4**, **Table 5**, **Figure 7**). The most commonly identified signs of human use citywide were *trails* (34.9%), which were only counted if they were desire lines – or cut-throughs – created by erosion under people's feet. Paved or mulched trails created by park managers were not counted although NYC Parks is analyzing its system of formal and informal trails through natural areas to improve navigation and access.

The next most common signs citywide were classified as "*other*" and did not fall under any of our existing categories (16.1%). These included signs that were a combination of informal sitting areas with substantial dumping or debris and occasionally decorations. We also saw flagging tape, lean-tos constructed from branches, piles of burnt charcoal, bicycle terrain areas, and a variety of other signs largely in the natural areas of parks.

Graffiti, art, and murals (14.8%) that were written, drawn, or painted as forms of communication, turf-marking, and/or artistic expression were the third most common sign of prior use citywide. While our protocol instructed field researchers not to count standard institutional signage common to city streets and park land, other forms of *signage, flyers, and stickers* (12.0%) that were left by individuals, community groups, and businesses – along with unique or uncommon signs placed by park management indicating special uses or rules – were the fourth most common sign of prior use citywide. The information displayed on these signs also provides material for further textual analysis.

The types of observed signs within individual boroughs were similar to ones observed citywide, although the most commonly observed signs of prior use in Brooklyn parks were *graffiti, art, and murals* (26.3%). Within Forever Wild areas only, the patterns were also very similar (**Table 5**).

Figure 7. Left to right: signs of prior use in Alley Pond, La Tourette, and High Rock Parks.

Table 4. Signs of prior use of parks citywide and within each borough (entire park)

	Citywide		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
Activity	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Informal Trails	1012	34.9%	309	42.6%	136	22.0%	60	43.2%	378	34.2%	129	41.5%
Other Sign	466	16.1%	109	15.0%	88	14.2%	17	43.2%	198	17.9%	54	17.4%
Graffiti, Art, Murals	430	14.8%	83	11.4%	163	26.3%	23	16.5%	143	13.0%	18	5.8%
Signage, Flyers & Stickers	349	12.0%	58	8.0%	127	20.5%	11	7.9%	108	9.8%	45	14.5%
Substantial Dumping / Debris	178	6.1%	32	4.4%	43	6.9%	3	2.2%	88	8.0%	12	3.9%
Informal / Improvised Sitting Places	156	5.4%	39	5.4%	22	3.6%	11	7.9%	69	6.3%	15	4.8%
Fire pit	79	2.8%	24	3.5%	4	0.6%	3	2.2%	31	2.8%	17	5.5%
Encampment / Sleeping Area	49	1.7%	11	1.6%	13	2.1%	8	5.8%	16	1.4%	1	0.3%
Memorial / Shrine / Sacred Symbol	46	1.6%	9	1.3%	10	1.6%			17	1.5%	10	3.2%
Damaged / Vandalized Property	41	1.4%	8	1.2%	1	0.2%			28	2.5%	4	1.3%
Garden in Park	32	1.1%	2	0.3%	8	1.3%	1	0.7%	19	1.7%	2	0.6%
Bird Feeder / Birdbath / Bat box	24	0.8%	5	0.7%	4	0.6%	2	1.4%	9	0.8%	4	1.3%
Grand Total	**2862**	**100%**	**689**	**100%**	**619**	**100%**	**139**	**100%**	**1104**	**100%**	**311**	**100%**

Table 5. Signs of prior use of parks citywide and within each borough (Forever Wild areas only)

	Citywide		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
Activity	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Informal Trails	717	44.2%	195	45.9%	84	35.7%	46	48.9%	272	45.3%	120	44.9%
Other Sign	302	18.6%	81	19.1%	42	17.9%	15	16.0%	115	19.1%	49	18.4%
Graffiti, Art, Murals	180	11.1%	54	12.7%	31	13.2%	13	13.8%	64	10.6%	18	6.7%
Signage, Flyers & Stickers	119	7.3%	35	8.2%	30	12.8%	6	6.4%	27	4.5%	21	7.9%
Substantial Dumping / Debris	101	6.2%	21	4.9%	21	8.9%	3	3.2%	44	7.3%	12	4.5%
Informal / Improvised Sitting Places	67	4.1%	6	1.4%	13	5.5%	4	4.3%	29	4.8%	15	5.6%
Fire pit	40	2.5%	11	2.6%		0.0%		0.0%	12	2.0%	17	6.4%
Encampment / Sleeping Area	34	2.1%	8	1.9%	8	3.4%	5	5.3%	12	2.0%	1	0.4%
Damaged / Vandalized Property	21	1.3%	6	1.4%		0.0%		0.0%	11	1.8%	4	1.5%
Bird Feeder / Birdbath / Bat box	17	1.0%	4	0.9%	2	0.9%	2	2.1%	5	0.8%	4	1.5%
Memorial / Shrine / Sacred Symbol	17	1.0%	3	0.7%	2	0.9%		0.0%	7	1.2%	5	1.9%
Garden in Park	7	0.4%	1	0.2%	2	0.9%		0.0%	3	0.5%	1	0.4%
Grand Total	**1622**	**100%**	**425**	**100%**	**235**	**100%**	**94**	**100%**	**601**	**100%**	**267**	**100%**

"Covered by tall trees and no other mid- or understory to distract, this space was ideal for a large group of people to hang out. There were a few fire pits, a few logs made into informal seating, and a little garbage strewn about. Before descending the slope into the hang out area, we saw silver writing on a black spray painted background on a tree reading "Smoke & Drink" with an arrow pointing to the hang out. This space, more than others that we've seen in parks, seemed like a popular, well-used spot by teenagers. The little bits of graffiti, the fresh coal / ash, and the well-trodden trail that really isn't too deep into the park are all signs of this."

Vignette from field researcher's notes on Riverdale Park

Number of park visitors is strongly correlated to park size, number of amenities, activities observed.

People use the parks for many activities (**Table 6**). Across all parks, we found that the number of observed people was correlated to park size (**Figure 8**, **Figure 9a**). At the same time, the number of observed people was also correlated with the number of amenities and the variety of activities observed (**Figure 9b & c**). These patterns suggest that, in addition to size, park programming and design may influence the number of park users and types of activities observed. For example, although La Tourette Park is the third largest park in our sample, it has a modest number of park users (136 users across all 3 visits, **Figure 8**) compared to Fort Washington Park (1288 users across all 3 visits, **Figure 8**), which is much smaller. This may be because of the way that La Tourette Park is programmed: it is part of the Staten Island Greenbelt, a 2,800 acre area that is a nature preserve for a variety of plant and animal species. While there are many miles of trails for biking, running, and walking in La Tourette, it does not contain the range of programmed areas that Fort Washington Park has, which include tennis courts, a playground, and barbecue areas in addition to trails for biking, running and walking.

In general, we observed a wide variety of activities at many parks. These included twelve identified categories:

- Bicycling
- Educational Group / Tour
- Jogging / Running
- Nature Recreation
- Plant Collecting / Foraging
- Sitting / Resting / Standing
- Socializing in Place
- Sports & Recreation
- Stewardship
- Walking / Dog Walking
- Working
- Other Activity

Observed activities in the Other Activity category include, but are not limited to dirt biking, motorized scooters, jet skis and boats, roller blading, praying, and gathering bottles from a dumpster.

Table 6. Number of people engaged in activities by park

	BICYCLING	EDUCATIONAL GROUP / TOUR	JOGGING / RUNNING	NATURE RECREATION	OTHER ACTIVITY	PLANT COLLECTING / FORAGING	SITTING / RESTING / STANDING	SOCIALIZING IN PLACE	SPORTS & RECREATION	STEWARDSHIP	WALKING / DOG WALKING	WORKING	GRAND TOTAL
Bronx													
Bronx Park	51	34	29	3	12	2	103	428	427		445	45	**1579**
Pelham Bay Park	195	3	53	841	28	2	546	3159	885		913	204	**6829**
Riverdale Park			3				1				21	1	**26**
Seton Falls Park	4						16	18	78		26	5	**147**
Soundview Park	21		10	28			16	485	161		93	5	**819**
Spuyten Duyvil Shorefront Park								5			5	2	**12**
Van Cortlandt Park	132	4	136	22	203	3	208	769	1347		383	68	**3275**
Brooklyn													
Calvert Vaux Park	13		2	13			33	97	228		33	10	**429**
Canarsie Park	77		121	19	1		226	383	387	1	311	92	**1618**
Four Sparrow Park													**0**
Fresh Creek			1	7	2		12	6	14		8	3	**53**
Marine Park	263	60	90	48	13		259	252	735	11	682	44	**2457**
McGuire Fields			1	5			83	9	170	1	61	13	**343**
Manhattan													
Fort Washington Park	617		100	5	1	1	86	147	158		172	1	**1288**
Inwood Hill Park	27	17	51	16	19		107	587	491		274	12	**1601**
Sherman Creek Park				2			1	9				9	**21**
Queens													
Alley Pond Park	82	67	58	15	1	1	91	283	381		287	28	**1294**
Brant Point Park	5			1	1		6				1		**14**
Broad Channel American Park	1			48	4		3	6	20		4		**86**
Brookville Park	48		48	5			61	95	279		206	19	**761**
Cunningham Park	86	49	56				44	290	509		271	21	**1326**
Dubos Point Wildlife Sanctuary	2			7	3		2						**14**
Flushing Meadows Corona Park	452		114	30	14	1	346	2924	1478	16	1303	106	**6784**
Forest Park	138	76	164		12		248	915	1153		549	31	**3286**
Idlewild Park		6		1			1	13	28		1		**50**
Jamaica Bay Park				6	3		2		3				**14**
Spring Creek Park	20		4				1		5		19	6	**55**
Staten Island													
Blue Heron Park Preserve	1			2				2			3	1	**9**
Clove Lakes Park	27		88	49	1		53	213	141		376	11	**959**
Conference House Park	11		5	1			8	36	6		50	21	**138**
High Rock Park		40	1				2				28	4	**75**
La Tourette Park	13	23	17					8	30		36	9	**136**
Ocean Breeze Park	1						3				2	5	**11**
Wolfe's Pond Park Preserve	10		3	11		5	10	220	102		94	36	**491**
Grand Total	**2297**	**379**	**1155**	**1185**	**318**	**15**	**2578**	**11359**	**9216**	**29**	**6657**	**812**	**36000**

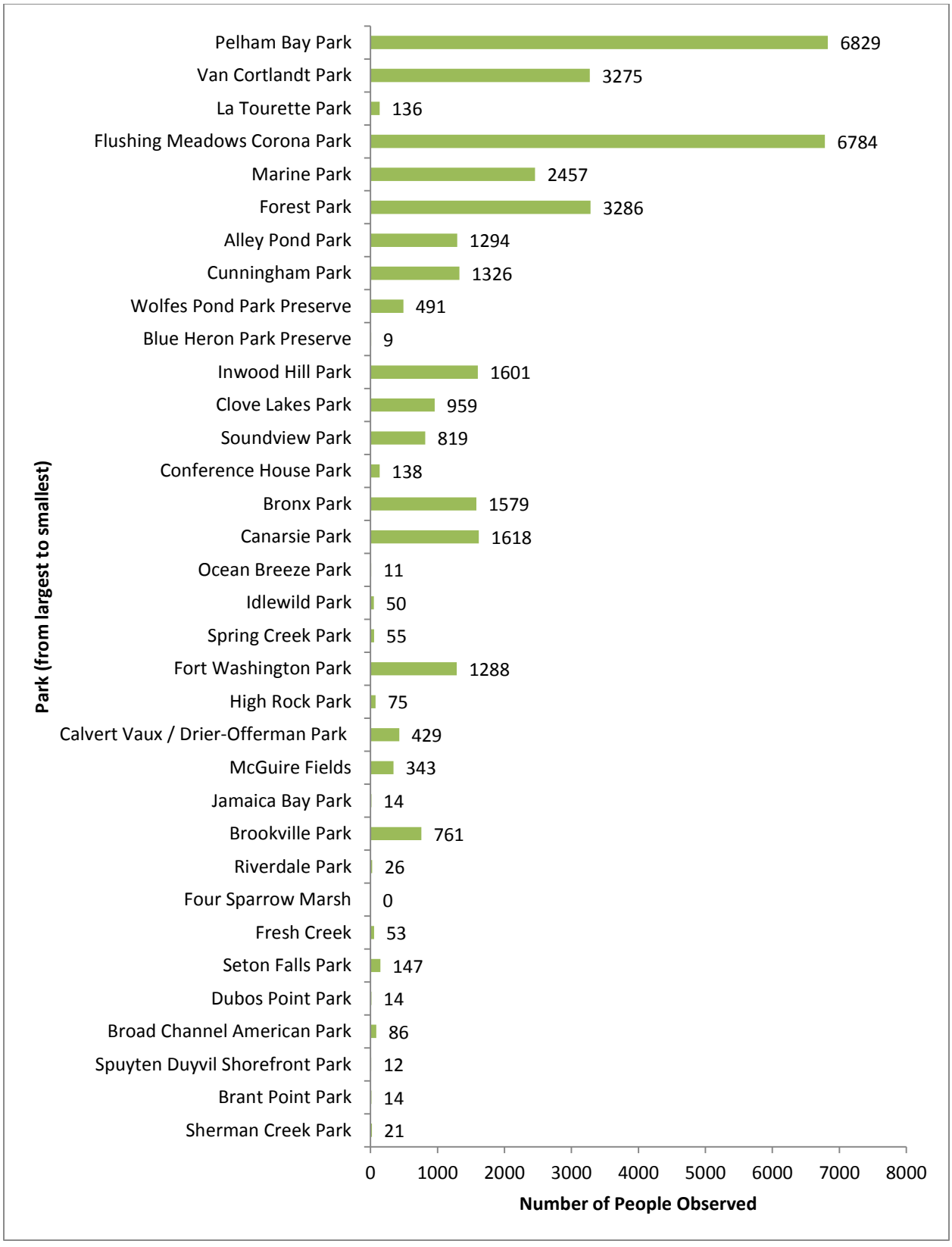


Figure 8. Total people observed within each park during all three visits

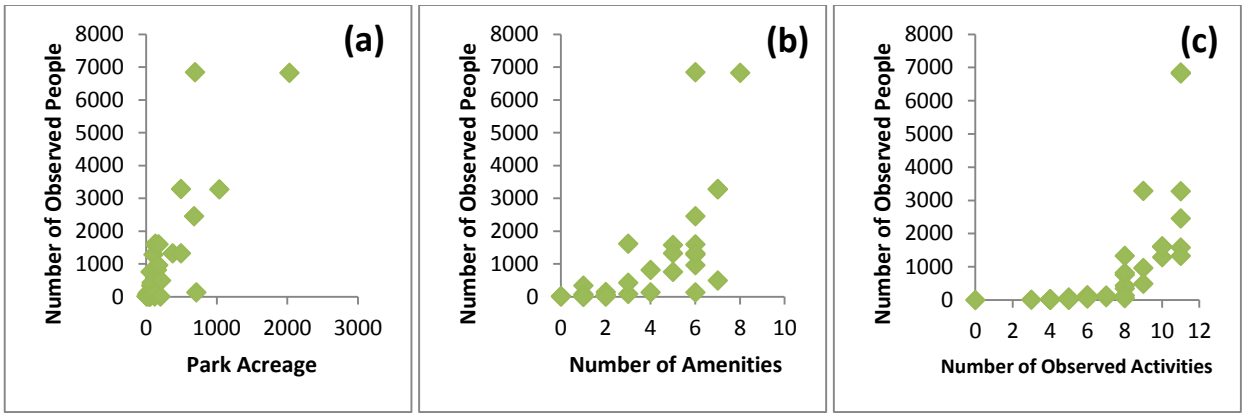


Figure 9. Number of people observed compared to (a) park acreage, (b) number of amenities, and (c) number of observed activities across all parks

"Mountain bikers regard Cunningham Park as having the best trails in the city, and it's easy to understand why. A thick overhead canopy gives the trails a truly wooded feeling while also helping to keep the area cool on sunny days. Trails wind through these woods, and riders have the option of taking easier or more challenging routes that include obstacles… On a Saturday morning, one of these areas was filled with riders who had come from all over the city to participate in a race."

Vignette from field researcher's notes on Cunningham Park

"I approached an older man who was standing at the edge of the stream through the middle of Clove Lakes Park. As I interviewed him – and he was generally happy with the park, an avid user for many years – I learned that his daughter and grandchildren were a few feet away actually walking around in the stream searching for little water creatures… They had no special gear or equipment for the nature recreation they were engaging in; it seems they simply went into the stream."

Vignette from field researcher's notes on Clove Lakes Park

"Despite the small size, the structure of the park allows for multiple private spots that are not easily visible. Once, when we went, we found a middle-aged black couple spending some quality time together, in private, on the small strip of sand that allows water access (to the Harlem River). They were walking around the "beach" and talking quietly. The second time, we walked to the end of one of the trails, which leads to a circular sitting area… They ended up being teenagers who were rolling joints. Because it was so private, they didn't see us coming, and we couldn't see them until we got there."

Vignette from field researcher's notes on Sherman Creek Park

"Paddleball in the handball courts seems to be a big thing—many ethnicities, long-term groups. We had also talked to paddleball players in Flushing Meadows who mentioned going up to the Bronx as well."

From Van Cortlandt debrief notes

Parks have a diverse user base.

We conducted 1541 interviews, with 381 refusals, for an 80.2% response rate. Though we did not collect detailed demographic information due to the rapid, on-site nature of the interviews, we did record the observed gender and age category of respondents. The gender composition was 978 male (56.8%), 647 female (42.0%), and 18 unrecorded (1%). The age composition was 1259 adults (81.7%), 257 seniors over the age of 65 (16.7%), and 25 unrecorded (1.6%). Those under 18 were excluded from interviews.

The most common reason for interview refusal was that the potential interviewee did not speak English. Members of the field research team possessed foreign language skills in Cantonese, Hindi, Mandarin, Portuguese, and Spanish. Wherever possible, interviews were conducted in native languages. However, not all park users were encountered by our foreign-language speaking team members or they spoke languages that our team did not (e.g. Korean, Russian). NYC is highly linguistically diverse, and we acknowledge that the inability to interview all park users in their native language potentially biases the study toward English speakers.

> "The interviewees and people in the park came from many diverse backgrounds. One of the interviews was conducted in Spanish. Other interviewees were said to be Italian (reference to bocce ball) or Eastern European descent. [The field researchers] observed two women with hijabs sitting in a park lawn."
>
> **From Forest Park field debrief notes**

Parks are part of New Yorkers' everyday lives.

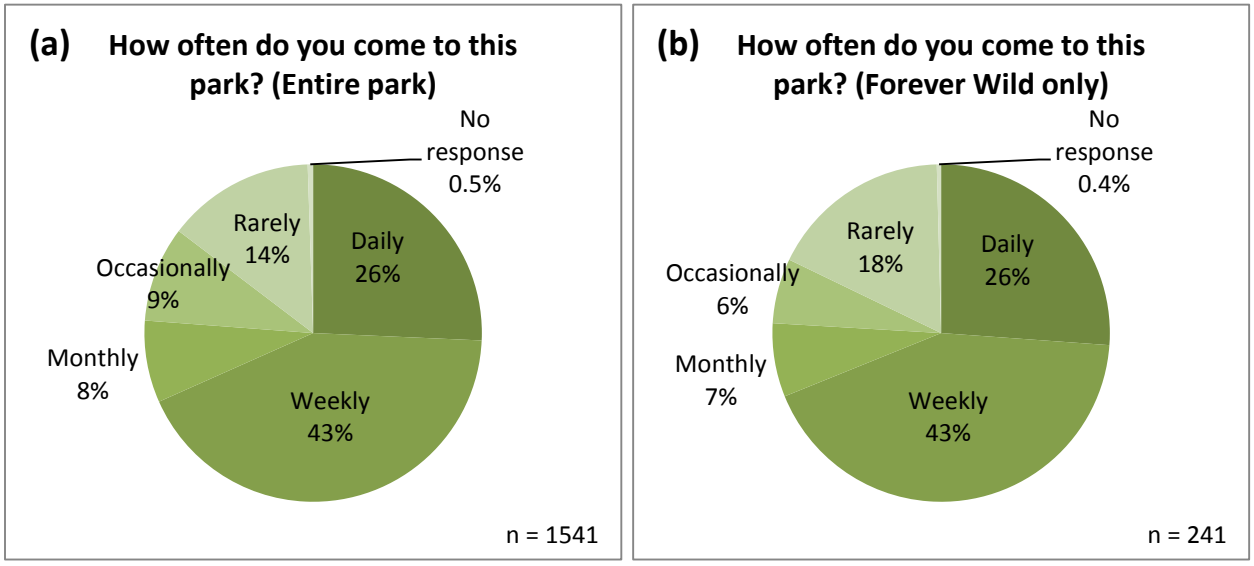


Figure 10. Frequency of park use (a) across entire park and (b) within Forever Wild areas only

We gathered information about frequency of park use via interviews by asking park users the closed-ended question, "How often do you come to this park?" Across the entire park, the majority of respondents reported using parks on a weekly (42.6%) or daily (25.7%) basis, showing that parks are playing a function in the everyday lives of their users (**Figure 10a**). To a lesser extent, other interviewees

replied that they visit parks only monthly (7.9%), occasionally (9.1%), or rarely (14.1%). This pattern was similar in Forever Wild areas of the 2014 parks (**Figure 10b**). Thus, not only do park amenities like ball fields and playgrounds attract daily use, but so too do woods, wetlands, and meadows. In addition, because there are differences in the uses of natural areas compared to other areas of the park, the benefits derived from these spaces may be different in terms of socio-cultural ecosystem services including psycho-social-spiritual dimensions. The woods, wetlands and meadows may even have more frequent and/or longer visits by individuals throughout the year, especially as the seasons change from fall to winter to spring.

Park Connectivity

Park users make connections between their local parks and a network of other green and blue spaces in the city and region.

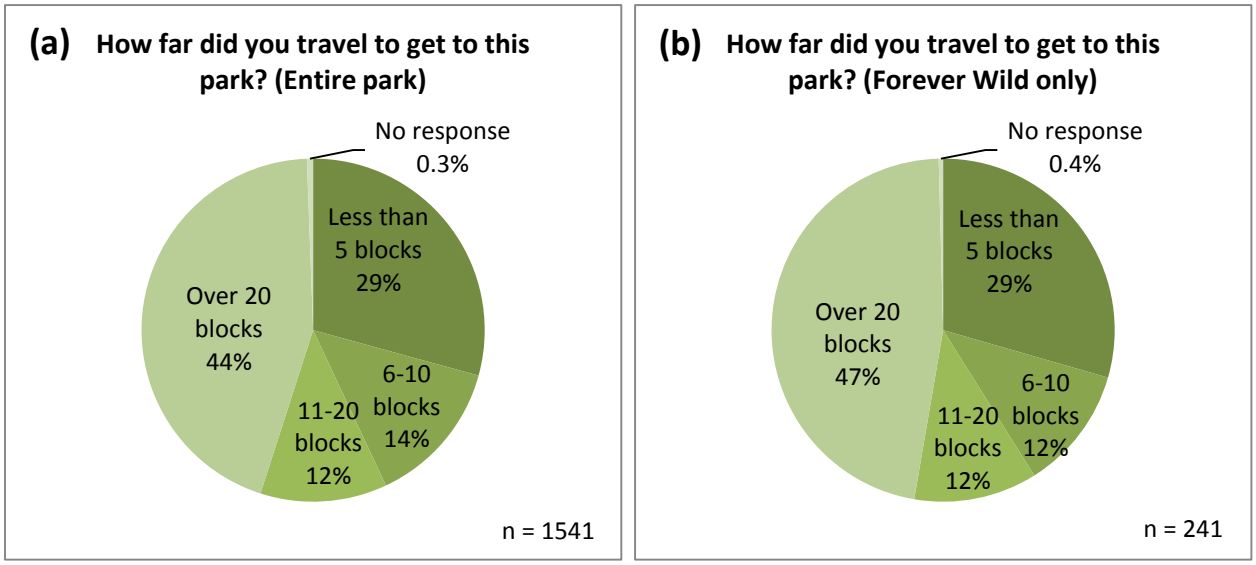


Figure 11. Distance traveled by park users (a) across entire park and (b) within Forever Wild areas only

Park users were bifurcated in how far they travel (**Figure 11a**), with 30.6% living within five blocks of the park in which they were interviewed, and 44% traveling more than 20 blocks to the park in which they were interviewed. This pattern is similar for people interviewed in only the Forever Wild areas of the parks surveyed in 2014 (**Figure 11b**). Parkland serves as ecological corridors; however, we can think of human park users as social connectors between outdoor sites as well. We asked park users to tell us where else they like to go in the outdoors. When respondents told us specifically named sites, we recorded these place names, which can be cleaned, standardized, and geo-referenced in order to create a social-spatial map of the connections between outdoor sites based on shared users. Overall, 37.3% of respondents named *specific New York City* parks that they visit, which shows the importance of the NYC park system to park users (**Table 7**). In this way, people are the social connectors among a network of parks and open spaces. In addition, many respondents identified types of sites that they visit, including *beaches or waterfronts* (27.4%) as the next most commonly identified site type. Notably, 19.8% of respondents said that they went "*nowhere else*" in the outdoors, meaning that the particular park that they were visiting was their primary outdoor recreation site. Some respondents also went to sites that were *out of town* (17.4%), and these ranged from sites within New York State to places as far as Oman and Korea. All other site types were mentioned much less frequently by 5% or fewer of respondents.

Table 7. Site types for other outdoor places visited by interview respondents

SITE TYPE	COUNT	% of REPONDENTS
Named NYC Park	575	37.3%
Beach-waterfront	422	27.4%
Nowhere else	305	19.8%
Out of town	268	17.4%
No response	62	4.0%
Nature preserve	55	3.6%
Sports	53	3.4%
Zoo or aquarium	37	2.4%
Playground	29	1.9%
Botanical garden	25	1.6%
Streets	22	1.4%
Amusements	18	1.2%
Local	18	1.2%
Greenway	12	0.8%
Schoolyard	8	0.5%
Barbecue	8	0.5%
Dog park	6	0.4%
Community facility	5	0.3%
Pool	4	0.3%
Wildlife refuge	3	0.2%
Amphitheater	3	0.2%
Campground	2	0.1%
Garden	2	0.1%
Urban farm	2	0.1%
Woods	1	0.1%
Nature center	1	0.1%
Total Respondents	**1541**	

Table 8. Top 20 named outdoor places visited by interview respondents

SITE TYPE	COUNT
Central Park	195
Prospect Park	95
Jones Beach State Park	85
Coney Island Beach and Boardwalk	80
Rockaway Beach and Boardwalk	76
Pelham Bay Park	51
Van Cortlandt Park	40
Flushing Meadows Corona Park	27
Bronx Zoo	26
Long Beach (New York)	25
Jacob Riis Park	24
Marine Park	23
Cunningham Park	23
Bear Mountain State Park	21
Riverside Park	20
Forest Park	18
Great Kills Park	18
Silver Lake Park	17
Riverbank State Park	15
Kissena Park	15

Out of the top 20 outdoor places named by respondents (**Table 8**), 16 are parks within NYC, and Central Park (195 respondents) and Prospect Park (95 respondents) were the most frequently mentioned places. Because beach or waterfront areas were the most common site type, many beach or waterfront parks were named such as Jones Beach (85 respondents), Coney Island (80 respondents), and the Rockaways (76 respondents). Many of the respondents who went to Pelham Bay Park (51 respondents) also mentioned Orchard Beach in particular.

Park edges can be an indicator of nearby communities' feelings of ownership or attachment to the park and their private property.

Across different parks and within each park, we observed large variations in park edges in terms of their porosity: some edges were very clearly marked, with fences or other physical barriers distinguishing between the park and the surrounding neighborhood (**Figure 12**) while other edges were less distinct (**Figure 13**). Along one of the fenceless edges of Conference House Park, we also observed signs of a bench in the shade of a private tree creating an intentional viewshed (**Figure 13b**).

Figure 12. Left to right: Distinct and clearly marked edges of Canarsie Park and Spuyten Duyvil Shorefront Park

Figure 13. Less clearly marked edges of (a) Brookville Park and (b) Conference House Park

Occasionally, it was difficult to distinguish between the park and the surrounding neighborhood. For example, in Clove Lakes Park, we saw a small informal garden (**Figure 14a**) on what appeared to be NYC Parks property according to our maps but also happened to be on the other side of a house at the end of the dead end road. Near Conference House Park, we saw a very large deck that appeared to extend to the edge of NYC Parks property, if not the park itself (**Figure 14b**). The deck was around 3 to 4 car lengths, so both its size and its location were unusual.

In simple terms, these overlapping territories can be seen as positive (engagement, stewardship, ownership, and attachment) or negative (encroachment, privatization of public space). Instances of blurred boundaries between park and home should be further investigated on a case-by-case basis as it may lead us to a greater understanding of how urban residents form attachment and meaning to parks and natural areas. At the same time, what may appear as encroachment or privatization may actually stem from the need to create a safe and viable space suggesting that these types of activities are a form of stewardship and civic engagement.

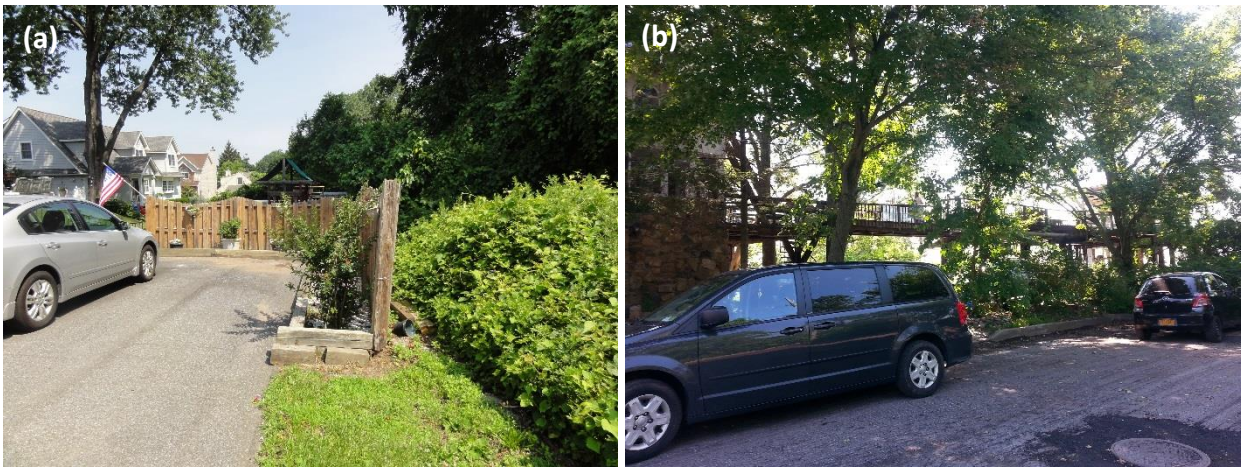


Figure 14. Edges of (a) Clove Lakes Park and (b) Conference House Park

At Forest Park, we saw signs of landscaping on the park edge that mirrored the neighborhood side directly across the street and was not found in any other part of the park or other parks (**Figure 15**). It was unclear whether this landscaping was done by NYC Parks workers or the community; nonetheless, it is notable that time and effort was invested into creating a sign that linked the park to the neighborhood.

Figure 15. Landscaping on the parks side (left) that mirrored the neighborhood side (right) near Forest Park

While some signs showed integration between the neighborhood and the park, we also observed signs of a desire to erect clear boundaries between the neighborhood and the park. At the edges of Brant Point Wildlife Sanctuary and Dubos Point Wildlife Sanctuary, residents installed fences along with "Private Property: No Trespassing" signs to clearly mark the border between the parks and their private

property (**Figure 16**). Similarly, residents near Alley Pond Park and Wolfe's Pond Park put up "No Trespassing" signs marking the boundary between the park and their property (**Figure 17**).

Overall, park edges can convey information about the surrounding neighborhood's attitudes towards their own private property in relation to the park. While some residents appear to welcome the blurry boundaries between the park and the neighborhood, other residents feel the desire to make those boundaries explicit and marked.

Figure 16. Left to right: Edges of Brant Point Wildlife Sanctuary and Dubos Point Wildlife Sanctuary

Figure 17. Left to right: Edges of Alley Pond Park and Wolfe's Pond Park

Park Meaning

Parks are a crucial form of 'nearby nature' that provide space for activities, recreation, socialization, and engagement with the environment and support social ties and place attachment.

We triangulated the quantitative results of human activities and signs of human use with qualitative information gleaned from interviews with park users. Interviewees were asked "Why do you come to this park?" Depending upon the respondent's interpretation, this open-ended question elicits information about the behavior of park users as well as the motivations driving park use and the meaning of parks (**Table 9**). Twelve primary themes emerged from the responses to this question, each of which will be discussed in descending order of frequency mentioned. Each interview response was coded with up to three distinct themes, so percentages total to greater than 100%.

Local

The primary reason that nearly half of users (42.4%) gave for visiting parks is that the site is local or nearby. Some respondents mentioned that the park was "close to home" or "in the neighborhood" while others mentioned that the park served as a shortcut or pleasant walking route.

Amenities

The next most common reason that respondents visited the park was because of its amenities (15.4%). This includes physical park infrastructure such as bathrooms, barbecue areas, community centers, nature centers, play equipment, parking, paths, trails, sports and recreation facilities, and many more.

Refuge

For 13.7% of respondents, the park serves as a site of refuge. Interviewees sought out green space in order to get away from the crowds, sounds, and traffic of New York City. In particular, they sought out a sense of isolation and cited "solitude", "fewer people", and "no one is here to bother us" as some of the reasons for visiting the park. At the same time, many respondents found the parks to be "quiet", "tranquil", "peaceful", "safe", and "good for the brain". Interviewees also came to the park to cultivate their personal health in the face of physical ailments (e.g. asthma), mental stressors (e.g. workplace stress), and social pressures (e.g. negative peer groups).

Nature-Outdoors

Similar in frequency to the previous category, 13.1% of respondents mentioned the ability to connect with material qualities of nature and the outdoors. Of the numerous sub-themes identified, the most commonly referenced attributes of nature were: "shade", "water", "fish", "wildlife", "view", and "trees". Also mentioned were qualities of the air, including "fresh air" and "cool". Other wildlife mentioned include birds, rabbits, frogs, and crabs. Others simply said that they came to the park to experience the beauty of nature and green space.

Quality

Many respondents (11.8%) cited the characteristics of the park itself – particularly cleanliness, maintenance, lack of crowds, size – along with the park maintenance staff. Interviewees also described the park they were visiting as the "best" or their "favorite" park.

Enjoyment

A number of respondents (10.0%) described the general enjoyment that they get from visiting the parks. Many of the interviewees described sites as "nice", "beautiful", "great", "good", "fun", or "pleasant". Some used words about their feelings about the sites such as "like" and "love".

Activity

Although a prior, separate question asked interviewees "What are you doing in the park today?" some respondents (9.8%) chose to answer the question about why they come by again discussing the activities with which they were engaging. This suggests that urban parks are valued as spaces that allow for certain types of activities: based on our respondents, these activities included sports, exercise, walking, working, cultural events, and many more. Some respondents engaged in sports mentioned that certain park sites were selected by leagues and teams. Parks also foster nature-based activities including stewardship and nature recreation.

Place attachment

Some interviewees (8.9%) offered responses that indicated a deep level of place attachment to parks. These park users described long-lasting ties to the sites, with some visiting the same parks for decades and some going out of their way to visit even though they no longer lived near the park. People used language such as "it was our childhood park", "I've always come here", and "I grew up coming here". As a result, many of these park users had finely honed local ecological knowledge of sites as well as deep historical understanding of the transformations that had occurred in the parks and surrounding neighborhoods. Users offered historical accounts, such as stories of parks and their surrounding neighborhoods becoming safer and parks that transformed from vacant lots to programmed sites.

Access

For some respondents (7.2%), ease of access was one of the reasons they were drawn to the park. Many mentioned that the park was "convenient", "free", or "centrally located". Others specifically mentioned the availability of parking and nearby transit. Interviewees also noted that some sites were "the only park around" or that there were no other parks in the area, which suggests that some respondents may be living in underserved areas with little green space.

Sociability and Social ties

These two thematic codes are distinct but related. Some respondents (6.1%) offered reasons for visiting the park that centered on the site as a place that supports sociability. Interviewees discussed visiting parks in order to socialize with friends, family, and the broader community. Other respondents (4.1%) described the social ties that they have to a park. This includes having family or friends who live nearby to the park or who referred the user to the park. Conceptually, these social ties have some overlap with the notion of place attachment. We coded responses as 'place attachment' if they specifically referenced an attachment that had developed over time to the site; and we coded them as social ties if someone identified having a social link to the park but did not specifically discuss this as a long-lasting, personal attachment to place.

Explore

Parks in New York City are a destination for tourists and visitors from near and far: 3.4% of respondents were visiting the park to "explore" or see "something different" based on information they had gotten online, from flyers, or from books. Many of these respondents were there for the first time, and some were visiting from other countries – for example, Taiwan or Grenada – while others were from other neighborhoods and boroughs in the city.

Ambivalence

Finally, a small portion of interviewees (0.5%) expressed ambivalence about why they were visiting the park. These park users used language such as "I don't know", they had "nothing else to do", or they were waiting for an appointment or for a person.

Table 9. Reasons for visiting park (entire park)

THEME	COUNT	% OF RESPONDENTS
Local	636	41.3%
Amenities	243	15.8%
Refuge	212	13.8%
Nature-outdoors	199	12.9%
Quality	187	12.1%
Enjoyment	160	10.4%
Activity	154	10.0%
Place attachment	143	9.3%
Access	110	7.1%
Sociability	95	6.2%
Social ties	64	4.2%
Explore	55	3.6%
Ambivalence	9	0.6%
No response	5	0.3%
Total Respondents	**1541**	

Table 10. Reasons for visiting park (Forever Wild only)

THEME	COUNT	% OF RESPONDENTS
Local	94	39.0%
Nature-outdoors	54	22.4%
Refuge	39	16.2%
Amenities	37	15.4%
Enjoyment	36	14.9%
Place attachment	32	13.3%
Quality	20	8.3%
Activity	18	7.5%
Explore	14	5.8%
Social ties	10	4.1%
Access	9	3.7%
Sociability	7	2.9%
No response	1	0.4%
Ambivalence	1	0.4%
Total Respondents	**241**	

For respondents who were interviewed in Forever Wild areas of parks surveyed in 2014, the most common reasons why they visited (**Table 9**, **Table 10**) were slightly different from respondents aggregated across all parks and zones surveyed in 2013-2014 (**Table 9**). Although the vast majority of respondents interviewed in Forever Wild areas visited the park because it was *local* (39.0%), experiencing *nature and the outdoors* (22.4%) and *refuge* (16.2%) were more popular responses than *amenities* (15.4%) among respondents in Forever Wild areas compared to general respondents. *Place attachment* (13.3%) was also a more popular reason offered by respondents in Forever Wild areas compared to general respondents. This suggests that although proximity to parks and natural areas are both important, being outdoors and surrounded by nature seems to draw respondents in natural areas more while amenities are more important to general respondents. A greater proportion of the respondents who were in natural areas also appear to have strong place attachment to the site.

"[We] had a few positive interactions with people on the edge, in the neighborhood. These people seemed to know the park well: where the entrances were, where you would and wouldn't see people in the woods... [They] said [that they] never see people in northern area."

From Blue Heron Park debrief notes

"On an August evening we saw a middle-aged couple sitting in the grass... They were in the shadow of the historic Conference House admiring the view of the ocean. The man and woman were both excited to talk about the park, but she was particularly animated in her affection for the area. "I love the woods," she exclaimed referring to the wooded areas and paved paths nearby. She lives a short drive away and comes to the park frequently to walk and take a painting class. We thanked her for speaking with us and walked away, but immediately heard her yell after us, "Want to see a picture of the deer I saw in the park?" She showed us several pictures of the deer she had seen… The park and its wildlife had obviously made a huge impact on her."

Vignette from field researcher's notes on Conference House Park

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"Four older men were sitting at a table on a bustling Saturday afternoon at the park. They met almost daily to walk through the wooded areas of the park. They walked almost four miles every day. One man talked about how he had come to the park as a child to play baseball and then brought his own son here to play. The man's grandson was in the park that day; he had a soccer game. "Three generations in one park!" he said with a grin."

Vignette from field researcher's notes on Inwood Hill Park

"The man had been fishing in Pelham Bay for about 25 years. He obviously had a strong connection with the spot as he took it upon himself to pick up trash in the park. He picks up at least four cans of trash each time he leaves the park. Several times he described fishing as his "high" while gazing out onto the water as the sun began to set. He doesn't eat the fish himself, but instead gives it to friends or neighbors who may need the food. It is obvious he feels a strong connection to his place, "I love it here" he said a few times."

Vignette from field researcher's notes on Pelham Bay Park

Stewardship

The majority of adult park users do not participate in formal environmental stewardship groups, but information about other forms of engagement and barriers to stewardship provides insight on potential for increasing stewardship.

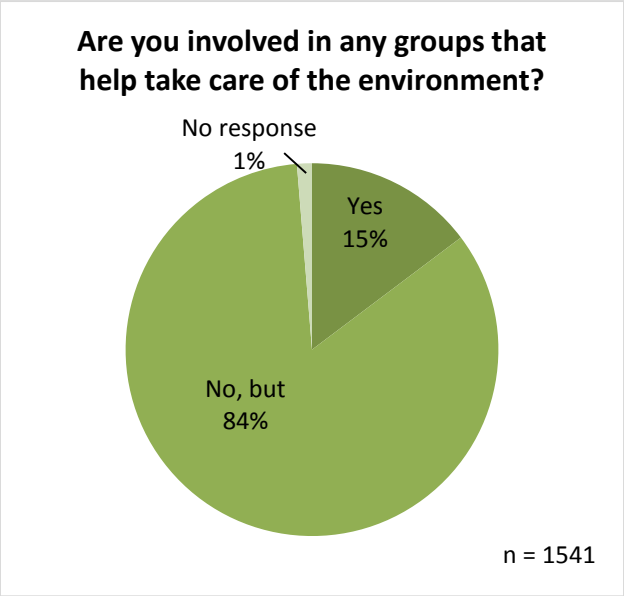

Figure 18. Participation in formal stewardship

In addition to park use and meaning, we examined environmental stewardship to understand levels of engagement in, potential for, and barriers to stewardship among park users. We found that 14.7% of interviewees participated in environmental organizations, while 84.0% do not (**Figure 18**). Although most interviewees were not involved in environmental organizations, many respondents pointed to *other ways that they engage in stewardship*, including through work (n = 20), participation in civic groups (n = 49), self-organized stewardship at home or in a park (n = 59), and other pro-environmental attitudes and behaviors (n = 77), including recycling, responsible consumption, and political advocacy (**Table 11**).

Some respondents we viewed as *potential stewards* because they fell along a spectrum ranging from lacking interest or awareness to expressing a desire to participate in stewardship or had ties to someone who did. A large number of interviewees did not specify a reason for not participating in stewardship (n = 259) while some interviewees lacked awareness or knowledge of how to get involved (n = 106). Some mentioned a desire to participate in the future (n = 66) while some mentioned that they lacked interest or that it was not a priority (n = 55). Others were apologetic or expressed embarrassment about the question (n = 22), mentioned that they had participated in stewardship in the past (n = 17) or a family member did so (n = 10), or listed changes in their life course such as becoming a parent or retirement (n = 13).

The primary *barrier to stewardship* was lack of time (n = 206) although some respondents mentioned other barriers (n = 29) such as health, mobility, language, etc.

Table 11. Other forms of engagement, potential stewards, and barriers to stewardship identified by interview respondents

TYPE OF RESPONSE	EXAMPLES	COUNT OF RESPONDENTS
Other forms of engagement		
Pro-environmental beliefs or action	"I recycle/compost" "I try not to produce trash"	77
Self-led stewardship	"I clean up after myself" "We gather trash"	59
Other civic engagement	"I volunteer at the food bank" "I'm involved with my church"	49
Work	"I'm a social worker" "I'm LEED certified"	20
Potential stewards		
No reason	"No particular reason" "No reason"	259
Lack of awareness	"Haven't been invited" "Don't know of any groups"	106
May participate in future	"I would like to" "Not yet"	66
Lack of interest	"Just not my thing" "Never got into it"	55
Self-critique	"I should for my son" "I wish I was. I feel bad"	22
Temporal	"I used to" "Not recently"	17
Life course	"We're retired"	13
Social ties	"My sister is" "My wife is involved"	10
Barriers to stewardship		
Lack of time	"Time is an issue" "Too busy with grandchildren"	206
Other barrier	"I don't speak English" "Limited mobility"	29
Total Respondents		**988**

"The dog park is extremely well loved and maintained. It has fresh wood chips on the ground, several double fences to protect the dogs, and shelters and play structures. None of this would be possible without the support and commitment of the dog park's volunteer organization, Wolfe's Pond Pooches. This group of volunteers petitions the city, volunteers their time, and contributes funds. Their hard work is apparent by the number of people who frequent the park."

Vignette from field researcher's notes on Wolfe's Pond Park

Those who are engaged in stewardship participate in 87 different organizations. A wide variety of stewardship groups were involved, including the following (bolded groups mentioned multiple times):

- Act Now Vote
- **Adirondack Mountain Club**
- Alley Pond Pet Lovers
- Alley Pond Striders
- American Littoral Society
- American Museum of Natural History
- **Appalachian Mountain Club**
- Bergen Beach Youth Association
- Blue Thong Society
- Bocce Club
- **Boy Scouts**
- Bronx River Alliance
- Brooklyn Botanical Garden
- Brookville Tennis Club
- Canarsie Community of Tennis Association
- Carmine Carrol Community Center
- **Central Park Conservancy**
- **Church of Jesus Christ of Latter-day Saints**
- Citizens for a Better Life
- Earthwatch
- **Eastern Queens Alliance**
- Environment Global Warming @ MS 31
- Environment Science Learning Center
- Environmental Work Group
- Food Bank of NYC
- Forest Hills Little League
- Forest Trends
- Free the Poor
- Friends of Hudson River Park
- Friends of Prospect Park
- Friends of Sands Point Preserve
- Friends of Soundview Park
- Friends of Van Cortlandt Park
- Gerritsen Beach Cares
- **Girl Scouts**
- Grassroots International
- Green City Force
- Green Party
- **Greenpeace**
- Habitat for Humanity
- Heifer International
- Hitchcock Center for the Environment
- Idlewild Environmental Education Center
- Knights of Columbus
- Marine Park Association
- Marine Park Civic Association
- Mill Basin Civic Association
- **MillionTreesNYC**
- **National Audubon Society**
- National Geographic
- National Park Service
- National Wildlife Federation
- **Natural Resources Defense Council**
- **New York-New Jersey Trail Conference**
- North Shore Animal League
- NYC Audubon
- **NYC Parks**
- One Acre Fund
- Police Athletic League
- **Protectors of Pine Oak Woods**
- Protectors of Pinewood Forest
- Queens Botanical Garden
- **Queens Hall of Science**
- Rosedale Center
- Salt Marsh Alliance
- Salt Marsh Nature Center
- **Sierra Club**
- Special Olympics
- Staten Island Athletic Club
- Staten Island Council for Animal Welfare
- Staten Island Museum
- Staten Island Zoo
- Suburbia Cricket Club
- Sudanese American Community
- **The Nature Conservancy**
- The Wilderness Society
- Transportation Alternatives
- Westchester Land Trust
- **Wildlife Conservancy Society**
- **Wolfe's Pond Pooches**
- World of Women
- **World Wildlife Fund**
- WPET
- YMCA
- Youth Basketball Empowerment
- Youth Ministry for Peace and Justice

Similar to the patterns seen in stewardship citywide (see Fisher et al. 2012), we find that environmental engagement is often nested within other community and quality-of-life issues. Groups include local civic associations, recreational and sports clubs, and groups focused on youth or seniors. In some cases, respondents specifically identified environmental groups, including both local, hands-on stewardship groups as well as national, membership-based organizations.

Sociability

People use parks to socialize.

This mixed method approach also draws attention to the role of parks as social spaces that support a range of social interactions, which strengthen community cohesion. The data demonstrate the pervasiveness of social activities in which park users engage, the ways in which these activities create patterns of use at gathering spaces (e.g. fire pits, improvised sitting places), and ways in which social ties and sociability of the space motivate people to visit particular park sites. These types of public and shared spaces are critical to the formation of social trust and neighborhood efficacy – much of which is currently discussed as highly desirable in terms of cultivating a more resilient city.

Many of the largest parks had a large number of social groups and heavily observed socializing. For example, Pelham Bay Park, Van Cortlandt Park (**Figure 19a**), Flushing Meadows Corona, and Marine Park are highly sociable sites (**Table 12**, **Figure 20**). At the same time, smaller parks like Brookville Park and Fort Washington Park (**Figure 19b**) also had an incredible diversity of social activities taking place, likely because of their programming. Both parks had numerous sports games and barbecues or picnics. Fort Washington Park's lighthouse and waterfront also attracted many couples, families, and photographers. In this way, these sites become social nodes in a network of park space. Notably, parks with less diverse amenities had less socializing occurring (**Figure 21**).

Figure 19. (a) Puppet show at Van Cortlandt Park, (b) Photographers at Fort Washington Park

Table 12. Number of social groups by park

	PAIR (2)	SMALL GROUP (3-10)	LARGE GROUP (10+)	TOTAL
Bronx				
Bronx Park	97	79	14	**190**
Pelham Bay Park	519	532	54	**1105**
Riverdale Park	1	1		**2**
Seton Falls Park	10	5	1	**16**
Soundview Park	22	59	10	**91**
Spuyten Duyvil Shorefront Park	2	1		**3**
Van Cortlandt Park	127	148	45	**320**
Brooklyn				
Calvert Vaux Park	22	25	10	**57**
Canarsie Park	104	113	37	**254**
Four Sparrow Marsh				**0**
Fresh Creek Nature Preserve	15	1	1	**17**
Marine Park	228	137	15	**380**
McGuire Fields	28	31	4	**63**
Manhattan				
Fort Washington Park	108	43	1	**152**
Inwood Hill Park	106	78	17	**201**
Sherman Creek Park	2	3		**5**
Queens				
Alley Pond Park	98	55	11	**164**
Brant Point Wildlife Sanctuary		3		**3**
Broad Channel American Park	8	10	1	**19**
Brookville Park	57	33	3	**93**
Cunningham Park	100	74	17	**191**
Dubos Point Wildlife Sanctuary		1	1	**2**
Flushing Meadows Corona Park	388	426	102	**916**
Forest Park	146	102	30	**278**
Idlewild Park	1	2	1	**4**
Jamaica Bay Park	1	1		**2**
Spring Creek Park	8	2		**10**
Staten Island				
Blue Heron Park	2	1		**3**
Clove Lakes Park	115	83	7	**205**
Conference House Park	18	10		**28**
High Rock Park	5	2		**7**
La Tourette Park	5	4		**9**
Ocean Breeze Park				**0**
Wolfes Pond Park	28	30	8	**66**
TOTAL	**2371**	**2095**	**390**	**4856**

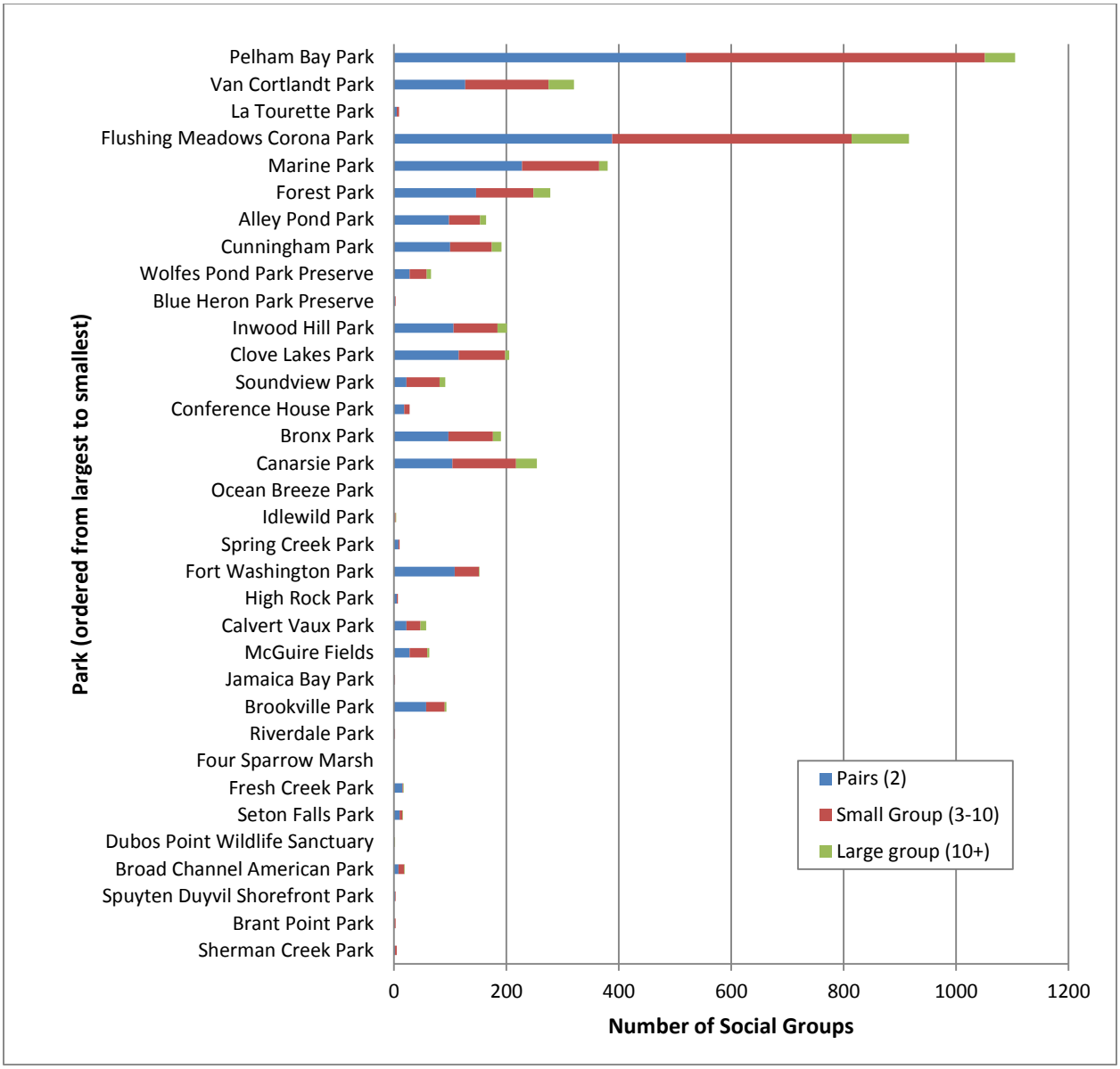

Figure 20. Number of social groups in each park

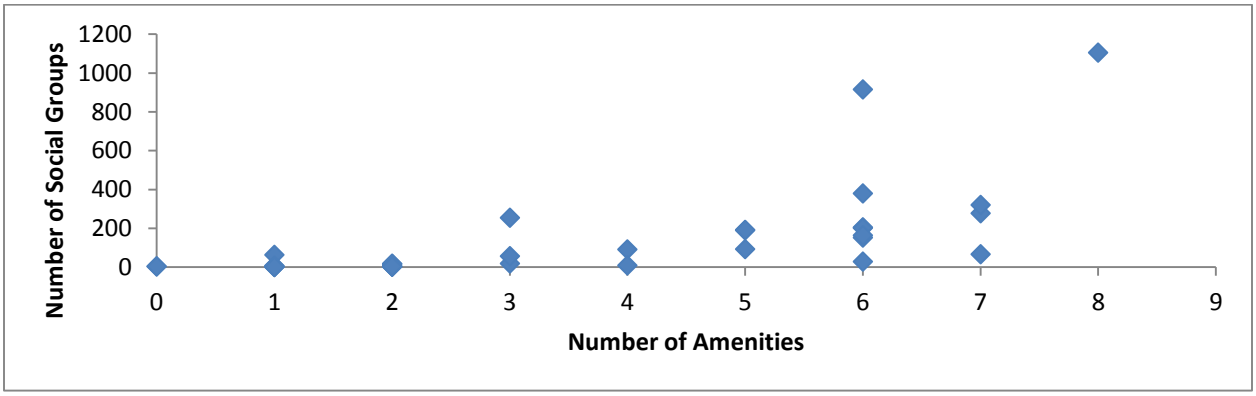

Figure 21. The relationship between number of social groups and number of amenities.

Perceptions of and Interactions with Natural Areas (only 2014 parks)

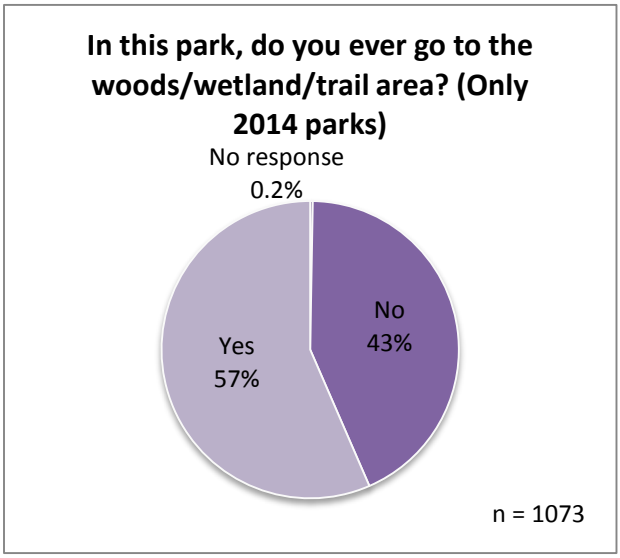

Figure 22. Park users' perceptions of natural areas

To complement the Natural Areas Conservancy's Ecological Assessment of natural areas, in 2014, we asked park users if they have ever gone to the wooded, wetland, or trail areas of the park. Over half (57%) of the respondents said yes (**Figure 22**). We asked these respondents what they typically do in the natural areas (**Table 13**), and their answers were largely consistent with our human observations data (**Table 3**).

The most common answers involved physical activity: 51.4% would *walk*, 15.7% would *exercise* (e.g., jogging or running), and 9.9% would *bike*. Many respondents would go to natural areas to interact with nature or the outdoors: 24.4% participate in *nature recreation* (e.g., boating, building forts, fishing, horseback riding, wildlife viewing) while 15.7% simply enjoy being surrounded by *nature or the outdoors*. Respondents also saw natural areas as a place to r*elax* (8.4%): they saw these areas as a place to meditate, "get away from everything," or "distract my mind from the busy city." Similar with our human observations data, natural areas were an important space for *socializing* (6.4%), and many respondents would go to natural areas with their family members and friends.

A subset of respondents who visited natural areas admitted that they had some *concerns* (5.4%), such as getting lost, the heat, insects, safety, ticks, or reluctance to go to the woods with their children. At the same time, some respondents went to the natural areas specifically to spend time with their *kids* (4.3%), to explore, to play, or to "pretend to be in a jungle." Others noted *prior engagement* (4.0%) with natural areas in the past, often when they were children. Some respondents were in natural areas to engage in *art and cultural activities* (3.6%) like photography, filming, or reading. A number of respondents were in natural areas to engage in *sports and recreation* (2.6%); this may be because some playgrounds, ball fields, model airplane fields are adjacent to natural areas, and visitors considered those to be a part of the natural area. A few respondents saw natural areas as a *free space* (1.3%) to do what they wanted even if the activities were unsanctioned like go to the bathroom, engage in romantic activities, or smoke marijuana. Finally, a small number of respondents would *work* (0.8%) in natural areas on environmental educational programs or collect recyclables, and some would engage in stewardship (0.7%).

"There were 15 elementary school aged boys bounding around the corner of the trail… One boy came up to us and demanded, 'Have you seen the bear?' I shook my head and began to explain that I didn't think there were any bears on Staten Island since it was an island, and I wasn't sure how the bears would get there. Part way through my explanation of animal habitats I noticed one of the groups' leaders was shaking his head at me and signaling for me to play along. 'Actually,' I said to the boy, 'I heard there was one bear living in these woods. You should probably keep an eye out for him.' The little boy's face grew into an enormous smile and he ran off to tell the others there was still hope of seeing a bear."

Vignette from field researcher's notes on La Tourette Park

Table 13. What users do in natural areas

THEME	COUNT	% OF RESPONDENTS
Walking	312	51.4%
Nature recreation	148	24.4%
Exercise	95	15.7%
Nature-outdoors	95	15.7%
Biking	60	9.9%
Relaxing	51	8.4%
Socializing	39	6.4%
Concern	33	5.4%
Kids	26	4.3%
Prior engagement	24	4.0%
Arts & culture	22	3.6%
Sports & recreation	16	2.6%
No response	10	1.6%
Free space	8	1.3%
Working	5	0.8%
Stewardship	4	0.7%
Total Respondents	**607**	

Table 14. Why users do not visit natural areas

THEME	COUNT	% OF RESPONDENTS
Preference	210	45.3%
Potential	143	30.8%
Fear-concern	87	18.8%
Access	22	4.7%
Life course	19	4.1%
No response	17	3.7%
Total Respondents	**464**	

For respondents who said that they do not go to natural areas, we asked them why they do not (**Table 14**). *Preferences* (45.3%) played the largest role in respondents who chose not to go into natural areas: they preferred to use other parts of the park or they had no interest. Many respondents seemed to have the *potential* (30.8%) to go into natural areas but had not done so yet. For example, these respondents did not know that the park had natural areas, they did not have a specific reason for not going to natural areas, or they mentioned that they would like to someday. Some respondents expressed *fear or concern* (18.8%) about being in natural areas: safety (for themselves and/or for their children), insects, and wayfinding were their top concerns. A few respondents noted that *access* (4.7%) was a problem, and they did not go to natural areas because natural areas were “too far”, “too bushy”, or that the respondents had a physical disability. Finally, respondents cited that they were at a stage in their *life course* (3.7%) –they were “too old” or their children were too young – which made them reluctant to go to natural areas.

Next Steps

The information from this report is being used in conjunction with other data sets, particularly the ecological attributes and values being assessed by our colleagues at the Natural Areas Conservancy. In addition, we have used or are currently using the citywide social assessment data and methods to accomplish the following:

- Use the social assessment method to deepen our understanding of park use in Inwood Hill Park throughout the four seasons.
- Prepare observation data on National Park Service property for use by the Science and Resilience Institute at Jamaica Bay.
- Prepare a database and map of social connectivity or which group of parks are most frequently visited by parks users surveyed.
- Prepare a manuscript on the community-based signs and images used in urban park space and natural areas.
- Further analyze the informal and formal rules used to regulate urban park space and natural areas.
- Further analyze stewardship engagement and potential, including comparing stewardship organizations identified by interviewees against the existing STEW-MAP inventory of environmental stewardship organizations in the NYC area.
- Further analyze use, values and perceptions of Forever Wild-designated areas compared to more landscaped areas of NYC Parks.

Publications:

- Campbell, Lindsay K, Svendsen, Erika S., Falxa-Raymond, Nancy, and Gillian Baine (2014). Reading the Landscape: A Reflection on Method, in PLOT: Hunting Grounds, Vol. 3, Spring City College of New York.

- Campbell, Lindsay K., Svendsen, Erika S., Sonti, Nancy F., Johnson, Michelle L. 2016. A social assessment of urban parkland: Analyzing park use and meaning to inform management and resilience planning. Environmental Science and Policy, http://dx.doi.org/10.1016/j.envsci.2016.01.014.

- Svendsen, Erika S., Campbell, Lindsay K. and McMillen, Heather. Stories, Shrines, and Symbols: Recognizing psycho-social-spiritual benefits of urban parks and natural areas. Journal of Ethnobiology, in press.

Conclusion

Importance of Considering the Social in Urban Parks and Natural Areas

Urban parks are important resources that serve large heterogeneous populations in many ways. Dependent upon the time of year, day, and proclivity of a person, they are spaces for quiet, solitary reflection, as well as spaces for people to connect to other people, to nature, and to the outdoors. For many urban residents, urban parks provide easy – and often daily – access to green space. There is mounting scientific evidence that having regular exposure to green space can improve aspects of human health including our personal outlook, levels of stress and overall state of well-being (e.g., Bowler et al. 2010). The social relationships that are formed and nourished in urban parks may also strengthen our human communities. In one of the most densely populated places on earth, parks provide us with a unique opportunity to 'know our neighbors.' In this sense, the scientific evidence is also clear that social ties help strengthen social cohesion and neighborhood efficacy (e.g., Sampson 2003). In short, investments in creating and maintaining urban parks are investments in improving not only the natural environment but also the health and well-being of individuals and communities. A community that is directly benefiting from the local environment is highly likely to be more protective and caring of it today and for future generations.

In order to maximize the full social ecological benefits of urban parks, it is important to consider human behavior and social meaning in conjunction with park management. For example, better understanding people's view of urban parks can help identify a particular stewardship tendency (or lack thereof), which can allow managers to better engage and involve people in sustaining and maintaining urban parks while taking into account the park user perspective. After a century of urban park management, it is clear that managers must attend to both the biophysical properties of parks as well as the social factors that can cultivate active use and care of parks.

In addition to providing a multitude of benefits to people, urban parks – especially ones with natural areas – also provide habitat and refuge for many other species. Balancing the protection of sensitive species and habitats while providing people with access to parks and natural areas can be a challenge, especially in urban areas where our human populations continue to grow and make active use of green space. Based upon this assessment, we have found that many New Yorkers, young and old, are actively using the natural areas and deriving socio-cultural benefits from these spaces that often cannot be found elsewhere in a densely populated city. NYC's natural areas are a unique resource that would benefit from an expansion in the area of public programming that includes new trails, signage, citizen science, and active stewardship activities.

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Appendix A: Differences Between 2013 & 2014 Protocols

	2013	2014
PARK INTERIOR PROTOCOL		
Weather/Temperature	x	
Starting Intersection	x	
Personal Property Maintenance	x	Folded into "Other Activity"
Activity Observations / Signs of Human Use	Photos required for each observation	Photos required only for observations with 📷 symbol
PARK EDGE PROTOCOL		
Weather/Temperature	x	
Starting Intersection	x	
Personal Property Maintenance	x	Folded into "Other Activity"
Edge Observation	Counts for park side, field notes for neighborhood side	Field notes for both park & neighborhood side
INTERVIEW PROTOCOL		
Zone ID		x
Stewardship question	Only yes or no options	Includes yes; no; no, but options
Natural areas question		x

Appendix B: Park Interior Protocol

Park Interior Protocol in 2013

PARKS OBSERVATION

Team Name:	Date (MM/DD/YYYY):	Start Time:	Stop Time:	First Photo #:
Location ID:	Starting Intersection:	Weather Temperature:		Last Photo #:

DIRECT HUMAN OBSERVATION	# Kids (<18)	# Adults (18-65)	# Seniors (>65)
Sports (soccer, tennis, cricket, baseball, volleyball, football, Frisbee, playground use, etc.)			
Jogging / Running			
Nature recreation (birding, launching or landing boat, fishing, etc.)			
Bicycling			
Walking / Dog Walking			
Socializing in Place (people talking, barbecuing, party, in groups)			
Educational Group / Tour (remember primary purpose, note the activity - count each individual)			
Working (parks maintenance, vendor, utility, repair, building, re-building)			
Plant collection / Foraging / Gathering			
Personal Property Maintenance (home repair/painting, washing car, car/bike maintenance,)			
Stewardship (gardening, tree care, weeding, trash removal, watering, volunteers in parks)			
Sitting / Resting / Standing / Waiting / Keeping Watch (alone, not socializing)			
Other Activity (homeless person sleeping, musician on street)			
Encounter with Resident: positive (including in cars and in homes)			
Encounter with Resident: negative (including in cars and in homes)			

SOCIAL OBSERVATION	
# of pairs	
# of small groups (3-10)	
# of large groups (10+)	
# of dogs	

USDA Forest Service Northern Research Station NYC Urban Field Station

PARKS OBSERVATION

Name Team:	Date (MM/DD/YYYY):	Location ID:

FIELD NOTES

General Park Observations:

Zone Specific Observations:

Zone: **Zone Overview Photo #:**	
Zone: **Zone Overview Photo #:**	
Zone: **Zone Overview Photo #:**	
Zone: **Zone Overview Photo #:**	
Zone: **Zone Overview Photo #:**	

USDA Forest Service Northern Research Station NYC Urban Field Station

PARKS OBSERVATION

Name Team:	Date (MM/DD/YYYY):		Location ID:
ACTIVITY OBSERVATIONS			
Zone: Photo #	**Signs of Activity** ☐ Trails ☐ Encampment/Sleeping Area ☐ Sitting Places & Dinning ☐ Fire Pit ☐ Memorial/Shrine ☐ OTHER / exceptional: (note)	**Signs of Neglect/Decay/Damage** ☐ Illegal Dumping ☐ Damaged/Vandalized Building **Signage/Writing/Art** ☐ Graffiti, Art, Murals ☐ Community Bulletin Boards ☐ Other Signs (NOT parks signs) **Signs of Environmental Stewardship** ☐ Garden in Park ☐ Bird Feeder/Bird Box/Birdbath	**Field Notes**
Zone: Photo #	**Signs of Activity** ☐ Trails ☐ Encampment/Sleeping Area ☐ Sitting Places & Dinning ☐ Fire Pit ☐ Memorial/Shrine ☐ OTHER / exceptional: (note)	**Signs of Neglect/Decay/Damage** ☐ Illegal Dumping ☐ Damaged/Vandalized Building **Signage/Writing/Art** ☐ Graffiti, Art, Murals ☐ Community Bulletin Boards ☐ Other Signs (NOT parks signs) **Signs of Environmental Stewardship** ☐ Garden in Park ☐ Bird Feeder/Bird Box/Birdbath	**Field Notes**
Zone: Photo #	**Signs of Activity** ☐ Trails ☐ Encampment/Sleeping Area ☐ Sitting Places & Dinning ☐ Fire Pit ☐ Memorial/Shrine ☐ OTHER / exceptional: (note)	**Signs of Neglect/Decay/Damage** ☐ Illegal Dumping ☐ Damaged/Vandalized Building **Signage/Writing/Art** ☐ Graffiti, Art, Murals ☐ Community Bulletin Boards ☐ Other Signs (NOT parks signs) **Signs of Environmental Stewardship** ☐ Garden in Park ☐ Bird Feeder/Bird Box/Birdbath	**Field Notes**
Zone: Photo #	**Signs of Activity** ☐ Trails ☐ Encampment/Sleeping Area ☐ Sitting Places & Dinning ☐ Fire Pit ☐ Memorial/Shrine ☐ OTHER / exceptional: (note)	**Signs of Neglect/Decay/Damage** ☐ Illegal Dumping ☐ Damaged/Vandalized Building **Signage/Writing/Art** ☐ Graffiti, Art, Murals ☐ Community Bulletin Boards ☐ Other Signs (NOT parks signs) **Signs of Environmental Stewardship** ☐ Garden in Park ☐ Bird Feeder/Bird Box/Birdbath	**Field Notes**
Zone: Photo #	**Signs of Activity** ☐ Trails ☐ Encampment/Sleeping Area ☐ Sitting Places & Dinning ☐ Fire Pit ☐ Memorial/Shrine ☐ OTHER / exceptional: (note)	**Signs of Neglect/Decay/Damage** ☐ Illegal Dumping ☐ Damaged/Vandalized Building **Signage/Writing/Art** ☐ Graffiti, Art, Murals ☐ Community Bulletin Boards ☐ Other Signs (NOT parks signs) **Signs of Environmental Stewardship** ☐ Garden in Park ☐ Bird Feeder/Bird Box/Birdbath	**Field Notes**

USDA Forest Service   Northern Research Station   NYC Urban Field Station

Park Interior Protocol in 2014

DIRECT HUMAN OBSERVATION – 2014

☐ INTERIOR ☐ EDGE ☐ WEEKDAY ☐ EVENING ☐ WEEKEND

Team Name:	Park Name:		Zone:
Date (MM/DD/YYYY):	Camera #	First Photo #:	Last Photo #:

DIRECT HUMAN OBSERVATION	# Kids (<18)	# Adults (18-65)	# Seniors (>65)
Bicycling			
Jogging / Running			
Walking / Dog Walking			
Sports & Recreation (soccer, tennis, cricket, baseball, volleyball, football, frisbee, playground use, tag, etc.)			
Educational Group / Tour (remember primary purpose, note the activity - count each individual)			
Nature Recreation (birding, launching or landing boat, fishing, digging, building w nature, climbing, etc.)			
Plant Collection / Foraging / Gathering			
Stewardship (gardening, tree care, weeding, trash removal, watering, volunteers in parks)			
Sitting / Resting / Standing / Waiting / Keeping Watch (alone, not socializing)			
Socializing in Place (people talking, barbecuing, party, in groups, children in free play)			
Working (parks maintenance, vendor, utility, repair, building, re-building)			
Other Activity (homeless person sleeping, musician on street, washing or fixing car)			
Encounter with Resident: positive (remember to record what they are doing)			
Encounter with Resident: negative (remember to record what they are doing)			
SOCIAL OBSERVATION			
# of pairs			
# of small groups (3-10)			
# of large groups (10+)			
# of dogs			

Field Notes:

PARKS OBSERVATION – 2014 ☐ WEEKDAY ☐ EVENING ☐ WEEKEND

Team Name:	Date (MM/DD/YYYY):	Park Name:

DEBRIEF NOTES

General Park Observations:	Interview refusals

PARKS OBSERVATION – 2014 ☐ WEEKDAY ☐ EVENING ☐ WEEKEND

Team Name:	Park Name:		Zone:
Date (MM/DD/YYYY):	Camera #	First Photo #:	Last Photo #:

SIGNS OF HUMAN USE	COUNT
Informal Trails (cut-throughs, foot paths, desire lines, bike tracks)	
Encampment / Sleeping Area	
Informal / Improvised Sitting Places (bench, chair, grill)	
Fire Pit	
Memorial / Shrine / Sacred Symbol 📷 (colored ribbons, RIP, "in memory of," stuffed animals)	
Damaged / Vandalized Building or Property	
Substantial Dumping or Debris (NOT bagged trash or litter)	
Graffiti, Art, Murals 📷 (hand written/painted messages or signs – do NOT photo small, illegible tags)	
Signage, Flyers & Stickers 📷 (community bulletin boards, institutional signs, NOT city street signs or standard parks signs)	
Garden in Park	
Bird Feeder / Birdbath / Bird Box / Bat box	
Other (specify in Field Notes)	

Field Notes: *capture any official or unofficial name for the zone – via signage or in conversation with public / managers*

Zone Overview Photo #:
Zone Debrief Notes:

Appendix C: Park Edge Protocol

Park Edge Protocol in 2013

EDGE OBSERVATION: ☐ **Park Side** ☐ **Neighborhood Side**

Team Name:	**Date (MM/DD/YYYY):**	**Start Time:**	**Stop Time:**	**First Photo #:**
Location ID:	**Starting Intersection:**	**Weather Temperature:**		**Last Photo #:**

DIRECT HUMAN OBSERVATION	**# Kids (<18)**	**# Adults (18-65)**	**# Seniors (>65)**
Sports (soccer, tennis, cricket, baseball, volleyball, football, Frisbee, playground use, etc.)			
Jogging / Running			
Nature recreation (birding, launching or landing boat, fishing, etc.)			
Bicycling			
Walking / Dog Walking			
Socializing in Place (people talking, barbecuing, party, in groups)			
Educational Group / Tour (remember primary purpose, note the activity - count each individual)			
Working (parks maintenance, vendor, utility, repair, building, re-building)			
Plant collection / Foraging / Gathering			
Personal Property Maintenance (home repair/painting, washing car, car/bike maintenance,)			
Stewardship (gardening, tree care, weeding, trash removal, watering, volunteers in parks)			
Sitting / Resting / Standing / Waiting / Keeping Watch (alone, not socializing)			
Other Activity (homeless person sleeping, musician on street)			
Encounter with Resident: positive (including in cars and in homes)			
Encounter with Resident: negative (including in cars and in homes)			

SOCIAL OBSERVATION	
# of pairs	
# of small groups (3-10)	
# of large groups (10+)	
# of dogs	
Other Field Notes:	

EDGE OBSERVATION: ☐ **Park Side** ☐ **Neighborhood Side**

Name Team:	**Date (MM/DD/YYYY):**	**Location ID Street Intersection:**

SIGNS OF ACTIVITY	**Park Access Points** 📷 (formal & informal entrances)	
	Trails (cut-throughs, walking trails, desire lines, bike trails)	
	Sitting Places & Dining (bench, chair, gazebo, chair on porch, sidewalk cafe, grill)	
	Sporting / Play Equipment (basketball hoop, toys)	
	Bike (NOT in use & NOT a ghost bike)	
	Buildings / Lots with Signs of Repair / Construction (including lots repurposed as staging ground for repair)	
SIGNS OF NEGLECT, DECAY, DAMAGE	**Damaged Property** (rusty/broken fence, structural or signage damage – NOT graffiti)	
	Abandoned Car / Bike (white ghost bikes are memorials)	
	Damaged / Uneven Sidewalks (tripping hazard – note incidence per zone)	
	Illegal Dumping (NOT bagged trash or litter)	
	Standing Dead Street Tree / Empty Tree Pit	
	Vacant Building	
	Vacant Lot (NOT a garden)	
SIGNAGE / WRITING / ART	**Graffiti, Art, Murals** 📷 (hand written/painted messages/signs – do NOT photo small, illegible tags)	
	Community Bulletin Boards / Institutional Signs 📷 (i.e. church marquees – NOT commercial)	
	Other Signs, Flyers & Stickers 📷 (family & foreign language signs, but NOT city street signs)	
	No Parking signs	
	"Keep Out" Signs (i.e. ADT, Beware of Dog, No Trespassing, No Soliciting)	
	National Flags (US & other countries on buildings and parked cars)	
	Decorations on Buildings or in Gardens (lights, wind chimes, gnomes, non-national flags, etc.)	
SIGNS OF ENVIRONMENTAL STEWARDSHIP	**Memorial / Shrine / Sacred Symbol** 📷 (colored ribbons, RIP, "in memory of," stuffed animals)	
	Stewarded Street Tree (improved tree pit, tree guard, mulch, rocks, flowers, signage)	
	Streetscape Garden (planter, flower box in public right of way – NOT in tree pit)	
	Bird Feeder / Birdbath / Bird Box / Pond	
	HOUSE with Lawn – Actively Stewarded, any sign of care (i.e. mowed lawns, or tilled/seeded soil)	
	HOUSE with Lawn – Minimally Managed (no ongoing care, dry/barren lawn, or weeds)	
	HOUSE with Garden – Actively Stewarded, any sign of care (i.e. trimmed shrubs, annuals, or single tended potted plant)	
	HOUSE with Garden – Minimally Managed (no ongoing care, empty planters, dead shrubs, overgrown, weeds)	
	APARTMENT with Lawn – Actively Stewarded, any sign of care (i.e. mowed lawns, or tilled/seeded soil)	
	APARTMENT with Lawn – Minimally Managed (no ongoing care, dry/barren lawn, or weeds)	
	APARTMENT with Garden – Actively Stewarded, any sign of care (i.e. trimmed shrubs, annuals, or single tended potted plant)	
	APARTMENT with Garden – Minimally Managed (no ongoing care, empty planters, dead shrubs, overgrown, weeds)	
	Community Garden	
	Other Lawn (in front of non-residential structure, like a church or school)	
	Other Garden (in front of non-residential structure, like a church or school)	

EDGE OBSERVATION: ☐ **Park Side** ☐ **Neighborhood Side**

Name Team:	Date (MM/DD/YYYY):	Location ID Street Intersection:

FIELD NOTES – NEIGHBORHOOD SIDE

Natural Areas Edge Field Notes

1. Take orienting photo at each corner and as you cross zones.
2. Debrief with general observations at the end of each zone.
3. Conduct two separate pass throughs (one on the park side & one on the neighborhood side)

	Field Notes on Neighborhood Side of Street *(note general character – vibrant business district, residential with stewarded lawns, murals, flags; institutions; industrial areas excessive litter – **overall** impression of people's activities; NOTE photo number and describe exceptional photos taken in field notes).*		
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	
Street: **Zone:** **Corner photo #:**		**Street:** **Zone:** **Corner photo #:**	

Park Edge Protocol in 2014

DIRECT HUMAN OBSERVATION – 2014

☐ INTERIOR ☐ EDGE ☐ WEEKDAY ☐ EVENING ☐ WEEKEND

Team Name:	Park Name:		Zone:
Date (MM/DD/YYYY):	Camera #	First Photo #:	Last Photo #:

DIRECT HUMAN OBSERVATION	# Kids (<18)	# Adults (18-65)	# Seniors (>65)
Bicycling			
Jogging / Running			
Walking / Dog Walking			
Sports & Recreation (soccer, tennis, cricket, baseball, volleyball, football, frisbee, playground use, tag, etc.)			
Educational Group / Tour (remember primary purpose, note the activity - count each individual)			
Nature Recreation (birding, launching or landing boat, fishing, digging, building w nature, climbing, etc.)			
Plant Collection / Foraging / Gathering			
Stewardship (gardening, tree care, weeding, trash removal, watering, volunteers in parks)			
Sitting / Resting / Standing / Waiting / Keeping Watch (alone, not socializing)			
Socializing in Place (people talking, barbecuing, party, in groups, children in free play)			
Working (parks maintenance, vendor, utility, repair, building, re-building)			
Other Activity (homeless person sleeping, musician on street, washing or fixing car)			
Encounter with Resident: positive (remember to record what they are doing)			
Encounter with Resident: negative (remember to record what they are doing)			

SOCIAL OBSERVATION	
# of pairs	
# of small groups (3-10)	
# of large groups (10+)	
# of dogs	

Field Notes:

EDGE OBSERVATION – 2014 ☐ **WEEKDAY** ☐ **EVENING** ☐ **WEEKEND**

Team Name:	**Park Name:**		**Zones:**
Date (MM/DD/YYYY):	**Camera #**	**First Photo #:**	**Last Photo #:**

FIELD NOTES

General Edge Observations:

Zone Specific Observations on the Edge:
Note the **character** and **porosity** of the edge, **patterns and exceptions**, and **specific illustrative observations**:

- informal access points and trails
- informal sitting areas
- sport/play equipment left behind
- locked / abandoned bikes
- damaged property
- abandoned cars
- vacancy
- dumping or debris
- construction
- graffiti / art / murals
- bulletin boards / signage
- memorials / shrines / sacred symbols
- national flags
- condition of street trees / infrastructure
- streetscape stewardship
- birdfeeders or other wildlife boxes
- community gardens
- private property stewardship / care
- built form / neighborhood character

Zone: **Zone photo range:**	
Zone: **Zone photo range:**	
Zone: **Zone photo range:**	
Zone: **Zone photo range:**	

Appendix D: Interview Protocol

Interview Protocol in 2013

INTERVIEW

TEAM NAME:	DATE:	PARK NAME:

Approximate age: ☐18-65 ☐>65	Gender: ☐ Male ☐ Female
What are you doing in the park today?	
And why do you choose to come here?	
How often do you visit the park you are in today? ☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Rarely	
How far did you travel to get to this park? ☐ Less than 5 blocks ☐ 6-10 blocks ☐ 11-20 blocks ☐ Over 20 blocks	
Where else do you like to go in the outdoors?	
Are you involved in any groups that help take care of the environment? ☐Yes ☐No If yes, which group(s):	
FIELD NOTES:	

Approximate age: ☐18-65 ☐>65	Gender: ☐ Male ☐ Female
What are you doing in the park today?	
And why do you choose to come here?	
How often do you visit the park you are in today? ☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Rarely	
How far did you travel to get to this park? ☐ Less than 5 blocks ☐ 6-10 blocks ☐ 11-20 blocks ☐ Over 20 blocks	
Where else do you like to go in the outdoors?	
Are you involved in any groups that help take care of the environment? ☐Yes ☐No If yes, which group(s):	
FIELD NOTES:	

Interview Protocol in 2014

PARKS OBSERVATION – 2014 ☐ WEEKDAY ☐ EVENING ☐ WEEKEND

Team name:	Park name:	Date:	Zone:
Approximate age: ☐ 18-65 ☐ >65	Gender: ☐ Male ☐ Female		Time:

What are you doing in the park today?

And why do you choose to come here?

How often do you visit the park you are in today?

☐ Daily ☐ Weekly ☐ Monthly ☐ Occasionally ☐ Rarely

How far did you travel to get to this park?

☐ Less than 5 blocks ☐ 6-10 blocks ☐ 11-20 blocks ☐ Over 20 blocks

In this park, do you ever go to the woods / wetland / trail area? ☐ Yes ☐ No

(gesture or explain based on specific site & natural area)

→If yes, what do you do?

→If no, why not?

Where else do you like to go in the outdoors? *(capture named sites & specific geography whenever possible)*

Are you involved in any groups that help take care of the environment? ☐ Yes ☐ No ☐ No, but…

If necessary, prompt interviewee to think about LOCAL stewardship activities / groups, within NYC

→If" yes," which group(s)?

→If "no," why not?

→If "no, but," capture details: *(e.g.: related profession, individual practice, home stewardship, other volunteerism)*

FIELD NOTES:

Appendix E: Detailed Methods and Definitions

I. Defining the landscape

The NYC Department of Parks & Recreation (NYC Parks) manages approximately 30,000 acres of land across the five boroughs of New York City. Approximately one-third of these lands are designated "Natural Areas" and include forests, meadows, fresh- and saltwater wetlands. These natural areas are managed for multiple values other than active recreation, such as: biodiversity, ecosystem services, water control, wildlife habitat, etc.

II. Site visits:

Each site is visited three times during the summer season: 1) during a weekday (between 8am – 4pm); 2) on a weekday evening (after 4pm); 3) on a weekend between the hours of 8am and 8pm.

On the first visit, all protocols (direct human observation, signs of human use, edge observations, and interviews) and all parts of park (interior and edges) are executed. Subsequent visits (weekday evening and weekend day) entail a more rapid assessment—direct human observations and interviews within the park interior only. **Table 1** summarizes which protocol to use when and where.

Table 1. Summary of Site Visits

	Weekday	**Evening**	**Weekend**
Interior	Direct human observations Interviews Signs of human use	Direct human observations Interviews	Direct human observations Interviews
Edge	Direct human observations Edge observations*	--	--

*Note: In 2013, the signs of human use protocol was used for both the interior and the edge.

Inclement weather: Researchers may work in light rain but should call off work in cases of heavy rain that precludes note-taking, and intense and/or electrical storms. Research may also be aborted under conditions of extreme heat.

III. Zone delineation:

Each named park property is divided into zones, which define sections of the park that share prominent land cover features, infrastructure, habitat type, and / or parks designation. This zone delineation may be compared to the delineation of stands or management units used in traditional forestry, in which portions of the forest are identified as units according to certain degree coherence across key characteristics. In this assessment, key characteristics and features

to consider are: parks infrastructure, vegetation cover type, and major boundaries (roads, waterways, trails, etc.) that fragment the park into smaller units. For example, active recreation facilities are separated from open meadow / dog run areas, which are in turn be separated from wetlands and woodlands. As a priority consideration, these zones should follow exactly the existing NYC Department of Parks & Recreation's boundaries for Forever Wild Natural Area Preserves and Forever Wild Natural Areas. Other sections within the park are be divided by triangulating aerial photography, NYC Parks GIS data layers showing park infrastructure, and on-the-ground verification.

When a single homogenous zone (such as a forested area within a park) is very large, it may be subdivided further into more zones to facilitate the research process. The field researchers can assess the park in smaller spatial units and later aggregate data that applies to these smaller, contiguous, similar zones. This is particularly important as often field work is interrupted by darkness or changes in weather; and smaller spatial units allow researchers to more easily know document what ground has been covered and what ground remains.

While in the field, researchers should capture all formal and informal names / designations given to particular sites and areas, attending both to official park signs and to language used by community members / park users. Record these on the map and in field notes for appropriate zones.

IV. Park interior

The park interior is assessed on all three visits to the site. In some cases the interior is clearly defined by a guardrail, a fence, a wall, or a clear break from the sidewalk. Other park sites may abut directly to the road, with no barrier and no sidewalk (there may be a social trail / desire line running along the edge). In this case, researchers must make a note of the character of the edge and make the judgment of what constitutes interior vs. edge.

V. Park edge

The park edge is the interface between the park interior and the rest of the city. In some cases, this is clearly defined by a wall that separates the sidewalk (right-of-way) from a park meadow. In other cases, the boundary is less apparent (for example, unmown meadow that persists up to a sidewalk), and researchers have to make a note of the character of the edge and move along the adjacent feature (road, sidewalk, fence, guardrail, open boundary) considering a narrow buffer as the boundary / edge space. Pay particular attention to desire lines and informal entry points.

While researchers do not physically cross the street, they should visually scan across the street and make notes about: built form, neighborhood character, land use, stewardship evidence and stewardship hubs, community gardens, vacancy, flags, home aesthetics, human activity

patterns, murals, business district features, etc. Direct human observations are made on both the park side and the community across the street. General edge observations and direct human observations along the edge are divided up into the same zones as the parks interior.

Exception: For larger parks that are transected by large busy roads with high levels of human activity (e.g., Woodhaven Blvd, which goes through Forest Park), the road is treated as a park edge. Edge observations and direct human observations are only made on one side of the street to avoid double counting.

VI. Moving through space in the park interior

Within the park interior, research teams move through the park site zone by zone, sweeping across all passable and visible land. They make observations, conduct interviews, and record field notes that apply to the entirety of one zone before moving onto the next zone.

Where the entire zone is accessible and viewable, researchers should move through space and assess their immediate vicinity (within clear visibility lines), making every attempt not to double count humans or signs of human use. It helps to imagine moving with a bubble to capture everything that falls within that bubble, rather than casting your eyes far afield.

In portions of the park that are more densely vegetated or filled with other obstacles, researchers follow formal trails and informal desire lines that indicate human access of the space. They should also cast their gaze further afield to view portions of the park that they may not be able to access on foot. While bushwhacking and wading through marshlands is not required by the protocol, researchers should pursue all "social trails," holes in fences, and similar markings of human passage *to the extent that they feel comfortable and safe doing so*.

VII. Observing human activity

The direct human observation protocol requires the researcher to keep a quantitative tally of all people observed within the park site. People are assessed for *what* they are doing, *where* they are observed (zone), and their *approximate age*. These counts total all people observed in the site visit. Additionally, any encounters initiated by park users are counted, as are observations of social clustering (pairs, small groups, and large groups). Dogs are also counted as a part of the human activity observation protocol. Most activities are self-explanatory. Others are defined below.

Detailed notes and definitions:

- Researchers should make note of the dominant activity—a socializing worker is working. Answer the question: 'what is the primary reason that the person is in the park today?' and count the activity accordingly.

- If someone is seated with a bike, they are resting. We are observing what people are doing, not interpreting signs (they may have simply used the bike for commute).
- A person in a basketball jersey and seated on the sidelines with the team is playing basketball (sports).

- When **educational groups** are encountered in parks (and they are doing stewardship or birding) they are counted as educational groups only. These are groups of people who are primarily in the park to learn. Where possible, a field note is added to indicate what they are doing.
- When school groups or camp groups are seen on recess/playing, they are **not** be tallied as an Educational Group; rather for what they are doing, such as **Sports and Recreation**. They are not participating in an educational group/tour.
- Children on scooters and people on rollerblades or skateboards also fall under **Sports and Recreation.**
- **Nature recreation** is defined as any recreation that falls outside of formal parks infrastructure and engages with natural elements in the park – wildlife, plant life, water, soil, trees, twigs, shells, etc. Examples are included on the protocol.
- A note about kids at play: kids in free play, e.g., playing tag or hide-and-go-seek or imaginary games, are counted as **Socializing in Place. BUT**, when children are interacting with natural elements (e.g.: climbing trees, building forts with sticks, digging, collecting shells), they are counted in **Nature Recreation.**
- **Stewardship** is defined as any caring for the land, from litter removal, to infrastructure maintenance, to plant care. This category does not apply to the actions of NYC Parks employees (who are *working* if observed engaging in any of these activities).
- **Encounter with resident:** this observation is noted *in addition to* the primary activity observation. Thus, if a cyclist greets you in a friendly manner as she rides by, she must be recorded as *bicycling* and as and *encounter with resident (positive).*
- Similarly, **social observations** are made in addition to the primary activity observation. Ten people having a barbecue must be documented as ten individuals *socializing in place* and as a *single large group*.
- **A count of the number of dogs** is also part of the human observation protocol. This reflects the fact that dog walkers are using the park in a manner distinct from solo walkers. This variable helps elucidate a particular character / use / value of park sites.

VIII. Observing signs of human use

In observing *signs of human use,* researchers document evidence of human presence where the humans themselves are not observed in the act. **Within the park interior**, these signs of human use are recorded in a quantitative tally. Some key signs are also photographed (camera icon indicates which signs should **always** be photographed). **On the park edge**, signs of human use is captured qualitatively through field notes taken for each zone; and patterns, exceptions, and illustrative examples should be documented in photographs.

Most signs of human use are self-explanatory. Others are defined below:

- **Informal trails** are those carved by park users and not maintained or paved by NYC Parks.
- **Informal / Improvised Sitting Spaces** are those seats constructed / improvised by park users only and do not include official benches, bleachers, or seats.
- **Memorial / shrine / other sacred symbols** includes all materials of remembrance (ghost bikes, flowers, ribbons, memorializing signage, plaques, etc.,) as well as symbology from all religious and spiritual orders (crosses, Virgin Mary icons, star of David, menorahs, Buddhas, Taoist symbols, items from Hindu rituals, Santaria symbols, etc.)
- **Substantial dumping or debris** includes any large concentration of trash or debris but does not include garbage that has been bagged and appropriately placed for removal. Dumping and debris may be legal or illegal, and thus includes sites that NYC DPR is using for staging materials (large piles of bricks, gravel, old infrastructure, Hurricane Sandy debris etc.)
- **Graffiti, art, murals** includes all two- and three-dimensional art created in / on the landscape. These should be photographed in the park interiors **except in the case of small, illegible tags.**
- **Signage, flyers & stickers** does not include standard Parks signs or other official city signs.

IX. Interviews with park users

- This is a rapid interview conducted with a random sample of every third adult encountered in the park. Interviews are not conducted on the park edge or with minors under the age of 18.
- Researchers should not interrupt people if they are:
  - Sleeping,
  - Meditating,
  - Praying or involved in other religious ritual, or
  - Competing or involved in vigorous structured play (although it is fine to approach them if they are taking a break, and good to interview people on the sidelines to capture the sports related activities).
- Introduce yourself and the project, ask for a few moments to ask them a few questions. Explain that you are doing research working with the Parks Department to understand how people are using parks.
- If the individual refuses, please record this in the **Interview refusals** box on the General Park Observations Notes page.
- Be sure to distinguish between interviewees' language and your own thoughts / interpretations / observations.
- Whenever possible, debrief with your field partner after every interview to verify what you have captured

- If the person speaks another language in which you have language ability, feel free to conduct the research in that language – and note on the field notes. Be sure to include English translation in the write-up.

X. Field notes – zone notes

Field notes capture the overall feeling of a zone / park site, as well as notable features, patterns, exceptions, and surprises**.** Field notes also document any notable conditions of the day or research process (holiday? Special event? Heat wave? Interruption to research?). These notes should be kept consistently as researchers move through space, and attended to at every transition between zones, between sites, and at the end of each work day. See debrief section for special considerations for taking qualitative field notes. Some additional considerations to note:

- Excessive notable litter (broken security glass, dog poop, etc.),
- Notable street tree damage,
- Shopping carts that may be related to homelessness, not dumping,
- Standing dead trees,
- Multipurpose activities/users- parks workers also stewarding,
- Resting in car near park notable-rest spot (e.g. cab drivers, ambulance drivers on break), or
- Languages, ethnicities, races, other groups represented or excluded from a site.

XI. Structured debrief – end of every site (and / or every day)

Site debrief at completion of each site (or at end of each day if a site takes several days to assess). Assign one person as scribe and capture the details of the discussion with specific language **(see example at end of document):**

- Quickly review all forms for completion – ensure that date and time and full header are complete for each form. Make sure counts are tallied and circled legibly.
- Gather and share general impressions / reflections on both the human and site characteristics of the site.
- Download camera memory cards each day to the field laptop, back up laptop files at end of each week using the external drive.
- What did we see? What patterns did we notice – what are people doing in the park, and where? What surprises / exceptions to those patterns? Hot spots? Dead zones?
- Who did we observe? What languages did we hear? Social clustering? Any people or groups of people you might have expected to see but didn't?

- The **race** question. We are not formally recording race or ethnicity of people we see; but we can use the debrief to capture the demographic nature of who's present and who's absent, and to make general comments about diversity, inclusion, exclusion, segregation of users and use types, etc.
- Any significant encounters with park users, in interviews or in spontaneous exchanges?
- Tally all interview refusals.

Appendix F: Checklist for Conducting Field Work

I. FIELDWORK

Before going out in the field:

- Orient yourself to your park by looking at it on google maps
- Make sure you have the PDF maps printed out for your park
- Create zones for your park area – with consensus from your group
    - Don't create zones that are too fine-grained. A handful of zones (2-6) per park is probably a good number.
    - Natural Areas are their own zone.
- Make sure you have a print out of **each** protocol for **each** zone
    - Interior protocol
    - Edge protocol
- Bring a big stack of interview forms
    - You will interview every third person you encounter in the park –**adults only**
- Bring a pencil (or a few)
- Bring a hard surface to write on
- Bring a digital camera – set to highest resolution
- Be prepared for inclement weather – dress appropriately for being outdoors: coat, hat, scarf, boots, etc. as needed

Divide your team of four into roles; plan to work as pairs:

- Interviewer
- Direct Human Observer
- Photographer
- Counting signs of human use

Develop a plan to cover space and time:

- Cover all of the park interior zones: remember to take orienting photo of each zone
- Cover the entire edge of the park (walking along the park side of the street only)
    - Remember to take orienting photo of each zone and street turn
- Make 3 visits to each park
    - Weekday daytime
    - Weekday evening
    - Weekend daytime

Once in the field:

- Be sure to fill out the top of every form completely – full team names, time of day, date, photo starting #, weather conditions, etc.
- Fill out all forms – especially field notes--completely and **legibly**
- At the end of the day, write your final count for each cell as a circled number
- Remember to debrief as a team at the end of your day, with someone responsible for taking down the longer debrief notes and typing these up in a word document

II. DATA MANAGEMENT

Develop a plan for data management

- Make sure you are keeping track of cameras and photo files – download and back up each day
- Keep track of all forms – organized by zone, park, and time of visit
- Keep track of all digital photos in files – organized by zone, park, and time of visit
- Share all final files in one folder by team

III. ANALYSIS AND REPORTING

Develop a plan for data analysis, reporting, and presentations, drawing upon

- Key impressions and debriefs
- Statistics
- Photographic data
- Maps