

**DIGGING TOGETHER:**  
**Why people volunteer to help plant one million trees in New York City**

*Environmental Stewardship Project at the  
Center for Society and Environment of the University of Maryland  
White Paper #1*

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## **Executive Summary**

Who volunteers to steward the urban forest in New York City and how do volunteer stewards get involved in these activities?

This is the second paper in a series that focuses on the social and organizational dynamics of urban environmental stewardship. This paper presents results from research on volunteer stewards at MillionTreesNYC tree planting events in spring and fall 2010, which were sponsored by the New York City Department of Parks and Recreation and the New York Restoration Project, a non-profit organization focused on enhancing underused green spaces throughout NYC. Although recent academic and policy studies have focused on the increasingly wide range of organizations working as stewards to conserve, manage, monitor, advocate for, or educate the public about the local environment, it remains unclear how individual citizens get involved in local stewardship initiatives. Such knowledge is needed by professionals working to manage environmental stewardship programs and by anyone seeking to understand better how the human infrastructure of environmental stewardship is established, maintained, and improved.

For this study, we surveyed a random sample of adult volunteers who participated in the spring and fall 2010 MillionTreesNYC planting events in parks throughout New York City. The volunteers planted trees and mulched wooded areas during morning and early afternoon hours. The survey included questions about where the volunteers came from to participate, how they heard about the event, with whom they came to the event, what prior connections they had with local environmental stewardship organizations, and their levels of civic/political engagement prior to the event.

### *Demographics*

Over half of the respondents of the study were women and most were relatively young (the median age was 30). Volunteer stewards tended to be white and well educated. In comparison to the New York City population as a whole, our sample population contains a greater percentage of whites, females, and highly educated people. These differences held across the spring and fall sample populations and are consistent with national trends in voluntarism.

### *Politics and Civic Engagement*

Politically, volunteer stewards tend to be more liberal than the American population. Volunteer stewards reported being engaged in all types of civic and political activities, from voting in an election to signing a petition. In most cases, the volunteer stewards were significantly more engaged in civic and political activities than the American population. This trend held for both the spring and fall sample populations.

### *Environmental Stewardship*

Although the majority of the volunteers at the MillionTreesNYC planting events were relatively inexperienced at environmental stewardship activities, roughly one-fifth of them demonstrated a high degree of prior engagement. These experienced volunteers had been to previous tree plantings, were members of local stewardship organizations, and took care of trees at other sites. They showed higher overall levels of civic engagement than the rest of the sample and overwhelmingly heard about the event through their affiliations with local stewardship organizations.

Roughly one-third of those surveyed were novice volunteers: they had never been to volunteer tree plantings before the event. These individuals were not members of local stewardship organizations and did not take care of trees at other sites. Personal ties played a much larger role for these novice volunteer stewards. They tended to hear about the event from their individual social networks comprised of family, friends, or colleagues. It is also worth noting that novice stewards were less civically engaged than the more experienced stewards (although they were still more engaged than the American population).

### *Future Research*

The greater degree of civic engagement amongst experienced volunteers relative to the rest of the sample suggests that planting trees leads to better citizenship—in other words, the more a person is involved in environmental stewardship, the more s/he engages with other types of civic and political activities. In order to understand fully the directionality of this relationship, however, more research is needed. For the next stage of this research project, we will conduct follow-up interviews with a sample of volunteer stewards who expressed interest in participating to explore this relationship in more detail.

## **About the Study**

This study was funded by a grant from the National Science Foundation (DEB-0948451). The grant, entitled *Understanding the Dynamic Connections among Stewardship, Land Cover and Ecosystem Services in New York City's Urban Forest* examines physical and social changes in the environment of New York City over the past 25 years.

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## **Introduction**

In recent years, academics and policymakers have examined environmentalism and social movement activity at the local level, highlighting the rising importance of environmental stewardship (see particularly U.S. EPA 2005, Corburn 2005; Horton 2004; Weber 2000; Kempton et al. 2001; Sirianni and Friedland 2001: chapter 3; Andrews and Edwards 2005; Kramer 2007; Svendsen and Campbell 2005, 2008; Fisher et al. forthcoming). Although these studies have focused on the increasingly wide range of organizations working as stewards to conserve, manage, monitor, advocate for, or educate the public about the local environment, it remains unclear how individual citizens get involved in local stewardship initiatives. As government agencies and civic organizations continue to provide crucial support for the human infrastructure of environmental stewardship, recent efforts to expand urban forests have mobilized a volunteer army to get their work done. In this context we define stewardship as the act of an individual or organization that takes care of the environment. These efforts can include participating in tree planting, care or maintenance, among other activities. Participation in these activities can be conducted as a volunteer or as part of a paid program of professionalized service. Analyzing data on volunteer stewards involved with the MillionTreesNYC campaign in New York City, this whitepaper explores who participates in such efforts to plant and maintain the urban forest and what mobilizes them to environmental stewardship.

Particularly since the 1990s, many scholars have conducted extensive research on the apparent withdrawal of Americans from political and social life. Contrary to earlier observations of a vibrant civic life in the United States (see particularly Tocqueville 1966; see also Almond and Verba 1963; Ladd 1999; Schofer and Fourcade-Gourinchas 2001; Wuthnow 1991), much of this work finds that individuals have become increasingly disconnected from one another and

detached from the world around them (for a full discussion of social isolation in America see McPherson et al. 2006). In the words of Putnam: “Americans today feel vaguely and uncomfortably disconnected” (2000: 402; see also Putnam 1995, 1996; but see Paxton 1999, 2002; Rotolo 1999; Fischer 2005). Similarly, in the introduction to the updated edition of their well-known work on *individualism and commitment in American life*, Bellah and his colleagues find public life in America is fading and there is increasing pressure to disengage from civil society (1996). These conclusions have been corroborated by scholars who work on multiple aspects of the political system—from voting behavior (e.g. Levine and Lopez 2002; Nie et al. 1979; Piven and Cloward 1988, 2000; Reiter 1979; Verba et al. 1995; but see McDonald and Popkin 2001), to social capital, political trust, volunteering and participation more broadly defined (e.g. Almond and Verba 1963; Putnam 1995, 1996, 2000; Eliasoph 1998; see also Smith 1994).

The results are, by no means, universal. A number of scholars have come to conflicting conclusions (e.g. Boyte and Kari 1996; Eckstein 2001; Paxton 1999; Rotolo 1999; Skocpol 1996, 1999, 2003; Weir and Ganz 1997; Skocpol and Fiorina 1999; Skocpol et al. 2000; Sirianni and Friedland 2001; Wuthnow 2004), in many cases focusing on the ways that Americans *do* engage civically. Some of these studies have looked at how disconnected individuals become civically engaged as a means of self-fulfillment (Lichterman 1995, 1996; Westphal 2003; Wuthnow 1991, 1998; see also McCarthy 1987; Jasper and Poulsen 1995). Wuthnow, for example, finds that “individualism does not necessarily contradict holding altruistic values and engaging in a wide variety of caring and community-service activities” (1991: 23; see also 1998). Similarly, in his work on personalism and activism in America, Lichterman finds that an individual’s “personalized form of political commitment underlies significant portions of numerous recent

grassroots movements in the US” (1996: 5). In Putnam’s work, in fact, he actually discusses environmental groups as an example of what he calls “countertrends” in his observations of America’s declining social capital (1995, 2000). However, his analysis focuses specifically on national environmental organizations that have paid members (see particularly Putnam 2000: chapter 9).

At the same time, a number of studies conducted by non-profit organizations in the United States do find Americans to be civically engaged, with some noting a recent trend toward increased voluntarism (e.g. Bureau of Labor Statistics 2010; New York Cares 2009; New York City Nonprofits Project 2002; United Way of New York City 2005; Wing et al. 2009). A study supported by the Urban Institute reports that over a quarter of the American population (about 27%) have volunteered at least once in a year for a charitable organization. The study finds that this rate has been relatively steady over the past decade (Wing et. al 2009; but see Bureau of Labor Statistics 2010).

Studies of volunteering in New York City have come to more detailed conclusions. A three-year analysis of New York City’s nonprofit sector, for example, indicates that there was a general increase in voluntarism in the City in the early 2000s, and that most nonprofits were still not meeting their demand for volunteers after the increase (New York City Nonprofits Project 2002). These findings were echoed in the United Way’s June 2005 study of New York City’s “evolving human service delivery system” (2005). According to the report, voluntarism has gone up within New York City. However, even though the number of volunteers has increased, the need for volunteers to assist non-profit organizations in their work has also risen (United Way of New York City 2005). These findings are corroborated by a 2009 study of trends among participants at one of the largest volunteer recruitment organizations in the City: New York

Cares. Studying internal data from 2004 to 2008, New York Cares found a 76.5% increase in new volunteers. In this same time period, the study also found that individual volunteers took part in more projects overall (New York Cares 2009).

This whitepaper explores what drives urban voluntarism, with a specific focus on environmental stewardship within one locality. In it, we present the results of two waves of a study of individuals that participated in MillionTreesNYC planting days in New York City. The MillionTreesNYC campaign is “a cornerstone of Mayor [Michael] Bloomberg’s PlaNYC vision to establish a healthier, more sustainable New York City.”<sup>1</sup> The goal of the campaign is to plant and care for one million new trees in New York City by 2017. The project is being carried out through a formal partnership between New York City’s Department of Parks and Recreation (NYC Parks) and the New York Restoration Project (NYRP), a civil society organization focused on enhancing underused green spaces throughout the city. NYRP has a stated goal of instilling “both individual and civic respect for nature and responsibility for contributing to New York City’s environmental sustainability.”<sup>2</sup> In addition, the City has linked its recruitment efforts for the MillionTreesNYC campaign to its citywide volunteer program—NYC Service. This program seeks to “ensure every young person in New York City is taught about civic engagement and has an opportunity to serve.”<sup>3</sup> The MillionTreesNYC campaign is an example of an urban environmental stewardship project that formally connects the work of government agencies with civil society organizations and explicitly promotes environmental stewardship as an act of civic engagement.

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<sup>1</sup> See [www.milliontreesnyc.org/html/newsroom/pr\\_spring\\_planting\\_day.shtml](http://www.milliontreesnyc.org/html/newsroom/pr_spring_planting_day.shtml) (Accessed 15 June 2010).

<sup>2</sup> See [www.nyrp.org/About/Our\\_Mission\\_and\\_Strategic\\_Plan](http://www.nyrp.org/About/Our_Mission_and_Strategic_Plan) (Accessed 15 June 2010).

<sup>3</sup> See [www.milliontreesnyc.org/html/newsroom/pr\\_spring\\_planting\\_day.shtml](http://www.milliontreesnyc.org/html/newsroom/pr_spring_planting_day.shtml) (Accessed 16 July 2010).

In order to understand better the ways that individual citizens get involved in stewardship initiatives through the MillionTreesNYC campaign, we studied volunteers who participated in two tree planting days in 2010. Through analysis of survey responses, we learn who is participating as volunteer stewards in New York City. We also learn about how volunteer stewards are mobilized and how they are connected to local environmental groups as well as to one-another. In the sections that follow, we describe our methods of analysis and the general characteristics of volunteers at the planting days. We then present analyses of the demographics of the volunteer stewards, their political and civic engagement, as well as their overall involvement in environmental stewardship in New York City. The results demonstrate that voluntarism associated with the MillionTreesNYC campaign is a local-level example of what Putnam described as a “countertrend” to his thesis of the declining civic engagement of Americans (2000). These volunteers are motivated by their personal, social, and organizational ties to serve as stewards of New York City. Far from isolated and civically disinterested, they are digging together to help better their local environment.

## **Data and Methods**

Data were collected from a random sample of volunteers who participated in the MillionTreesNYC spring and fall planting days on 24 April and 23 October, 2010.<sup>4</sup> During the events, volunteers planted trees at public parks throughout New York City. The purpose of the volunteer planting events was to make “New York City greener and greater” by planting trees

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<sup>4</sup> For more information on the Initiative, go to [www.milliontreesnyc.org](http://www.milliontreesnyc.org) (accessed 15 June 2010).

and mulching in wooded park areas.<sup>5</sup> A one page (two-sided) survey was administered to volunteer planters as they registered and participated in the events from 9am-2:30pm.

### *Site Selection*

Due to the project's research focus on understanding volunteer stewards and the project's Human Subjects Protocol,<sup>6</sup> which required that all participants in the study be over the age of 18, five sites from the spring planting day that were being coordinated with specific schools and Boy Scout troops were not included in the study. Also, because this study is interested in understanding volunteer stewards, the Brooklyn Botanic Garden site, which coordinated employees to plant trees, was also removed from the spring sample. During the fall, all sites were expected to draw a diverse set of volunteers. As a result, data were collected at six of twelve spring planting sites and at all nine fall planting sites. There were two sites that were surveyed in both the spring and fall, for a total of 13 unique survey locations and 15 survey collection sessions (15 is the total number of survey collection sites referred to in the remainder of this paper). The survey sites were located in four of the five boroughs of New York City: Brooklyn, Queens, Staten Island, and the Bronx. All of the sites were on the grounds of medium to large-sized public parks. The sampling methodology is described in detail in the section that follows.

The Volunteer Stewardship Survey (The Survey) was designed to be short and non-invasive so as to facilitate data collection in the field and encourage the widest possible participation among volunteers. The questions focus on how individual volunteers got involved and became engaged with the system of urban environmental stewardship in New York City.

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<sup>5</sup> [www.milliontreesnyc.org/html/involved/spring\\_planting\\_2010\\_registration.shtml](http://www.milliontreesnyc.org/html/involved/spring_planting_2010_registration.shtml) (accessed 15 June 2010). Those sites where volunteers were recruited by other organizations are not listed on this public website.

<sup>6</sup> Data collection was conducted in accordance with Columbia University policies on the research on Human Subjects (IRB Protocol #AAAF1445).

The survey includes questions about where the volunteers came from, how they heard about the event, with whom they came to the event, what prior connections they had with local environmental stewardship organizations, and their levels of civic/political engagement prior to the event. The civic engagement questions were based in part on the “political activity” section of the General Social Survey’s cumulative file (1972-2008) and on portions of the Roper Center Civic and Political Trends Data (1973-1994). Results are also compared to the findings of the CIRCLE Civic and Political Health of the Nation Survey (2006), and the Roper Center Social Capital Community Survey (2006).

#### *Random Survey of Volunteer Stewards*

Volunteer stewards were randomly surveyed at the spring and fall planting sites using a methodology consistent with that employed by studies of activism and protest around the world (e.g. Bédoyan et al., 2004; Fisher et al., 2005; Fisher 2006, 2010; Heaney and Rojas, 2008). Survey participants were chosen using a field approximation of random selection at the events. Because the field situations varied somewhat, random selection was achieved by choosing every third adult volunteer queuing up to register, or choosing every third person who was waiting to get coffee or receive instructions as determined by the researcher working in a particular area.

Overall, 454 volunteers were randomly selected to take the survey from an estimated 1,212 eligible registered volunteers at the 15 research sites (eligible volunteers are defined as those who were above the age of 18 and the total was established by subtracting the estimated percentage of volunteers under 18 reported by the site surveyor from the total registered volunteers). Four hundred and twenty volunteer stewards—or 92.5 percent of those asked—agreed to participate in the survey. In total, 34 people refused to participate in the study,

representing an overall refusal rate of 7.5 percent. Table 1 presents an overview of the volunteer planting sites included in the study, along with the response and refusal rates at each site.

**Table 1: Volunteer Stewards by Research Site**

<b>Site (Park Name/Borough)</b>	<b>Round</b>	<b>Total Adult Volunteers</b>	<b>Completed Surveys</b>	<b>Refusals</b>
Bronx River Park/ Bronx	Spring	45	14	0
Spring Creek/ Brooklyn	Spring	46	15	0
Roy Wilkins Park/ Queens	Spring	71	17	1
Clove Lakes / Staten Island	Spring	139	34	3
Ocean Breeze/ Staten Island	Spring	90	51	3
Wolfe's Pond/ Staten Island	Spring	180	62	2
Powell's Cove/ Queens	Fall	60	22	0
Ferry Point/ Bronx	Fall	34	12	2
Van Cortland Park/ Bronx	Fall	99	35	4
Pelham Bay Park/ Bronx	Fall	112	41	12
Marine Park/ Brooklyn	Fall	92	24	0
F. Bennett Field/ Brooklyn	Fall	60	27	0
Wolfe's Pond/ Staten Island	Fall	53	22	4
Conf. House/ Staten Island	Fall	78	25	3
Clove Lakes/ Staten Island	Fall	54	19	0
<b>Total</b>		<b>1212</b>	<b>420</b>	<b>34</b>

Data from all of the research sites were aggregated into a spreadsheet and, where appropriate, given a numerical code. Data were analyzed using PASW Statistics 19 (SPSS) statistical software. In the pages that follow, we present the results of our analysis of volunteer stewards in New York City.

### *Comparison of Results*

The spring and fall sample populations showed only minor variations. The fall cohort had a more balanced gender ratio than the spring (47% male in the fall versus 42% male in the spring). The fall cohort was slightly older than the spring (median age = 31 years in the fall and 28 years in the spring). In terms of race and ethnicity, the only considerable difference was a larger percentage of black volunteers in the fall (17% versus 10% in the spring). Political views, educational attainment, and employment sector showed little variation for the two sample populations. There were some differences in how volunteers reported coming to the planting day: more people reported coming alone in the fall (18.9% versus 7.8% in the spring) and more people reported coming with members of an organization in the spring (34.7% versus 25.6% in the fall). Otherwise, responses were quite similar for the two groups. Refusal rates were largely stable across the two samples (0-3 refusals per site was common). The one exception was the 12 refusals reported above for Pelham Bay Park in the Bronx. This site was one of the largest that we surveyed and, as a result, surveying went the longest at this site. It is possible that people were less willing to fill out the survey toward the end of the work day than they were when they first arrived in the morning.

Overall, the sample populations in the two waves of data collection were very similar. For example, in both spring and fall, most respondents heard about the event through work or school, were first time tree planting volunteers, did not take care of trees at other sites, were well educated, and politically liberal. In a series of independent sample t-tests shown in Table 2 below, the results of the spring and fall groups of respondents are not significantly different for any of the responses tested, supporting the assertion that the two sample populations can be aggregated and reported together.

**Table 2: Independent samples t-test comparison of results for key variables in the spring and fall rounds of data collection.**

<b>Variable</b>	<b>Mean: Spring</b>	<b>Mean: Fall</b>	<b>Levene Statistic Significance</b>	<b>t-test significance</b>
Number of plantings in past five years	1.64	1.67	.519	.767
Takes care of street trees (0=No, 1=Yes)	.20	.19	.926	.963
Heard from School/Work (0=No, 1=Yes)	.35	.34	.880	.940
Political Views (Scaled from extremely liberal =1 to extremely conservative=7)	2.94	3.09	.424	.348

The above results show that for the variables tested, the mean values of responses are very close in the spring and the fall. The Levene test for homogeneity of variances is not significant for any of the variables (all are well above the .05 threshold). Therefore, we fail to reject the hypothesis that the variances are equal. Thus, we conclude that a t-test which assumes equal variances is appropriate. T-test significance for all variables are also well above the .05 threshold. As a result, we reject the hypothesis that there is a significant difference between the two response groups. These results demonstrate that, while there are minor points of difference across the spring and fall sample populations, it is appropriate to aggregate results because there is no statistically significant variation across them. As such, in the pages that follow, we report on the aggregated results across the spring and fall sample populations.

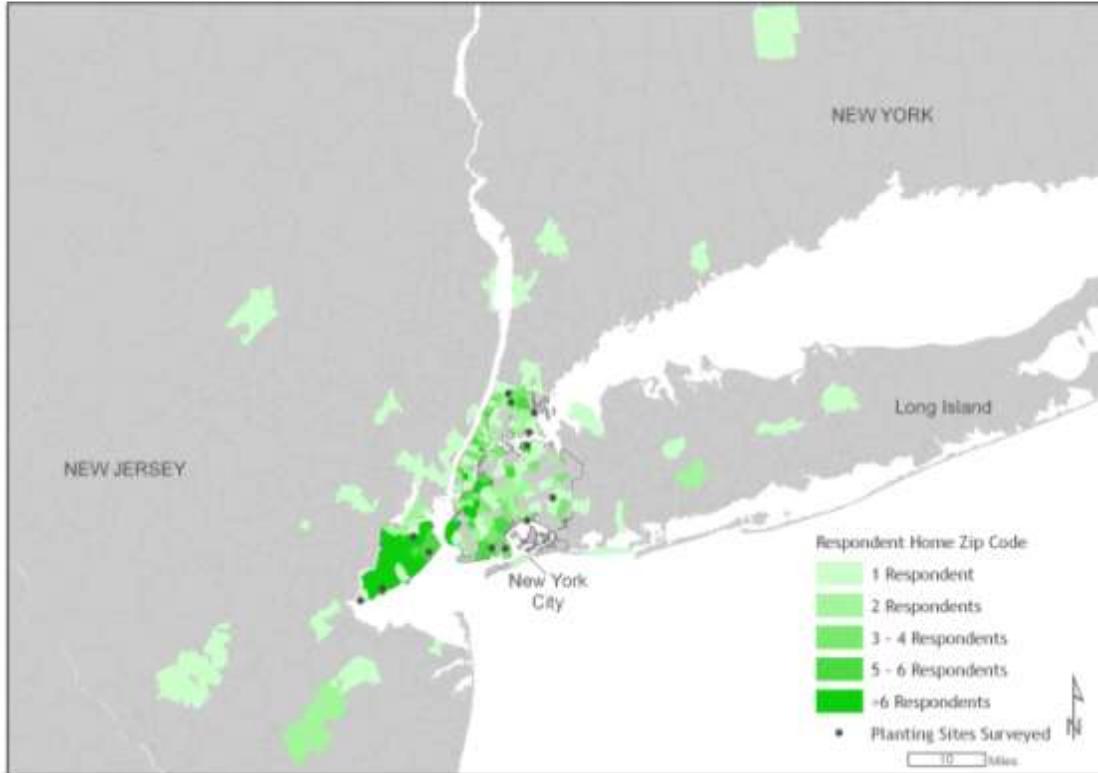
## **Findings**

We focus on three main themes in the findings of this study of volunteer stewards in New York City. We begin by providing some general demographic information on our sample population. We compare these demographics to citywide and national trends. Next, we explore the civic and political engagement of volunteer stewards in our sample. In this section, we also compare the sample to the national population. Then, we discuss volunteers' engagement with environmental stewardship activities outside of the MillionTreesNYC planting days. By exploring the organizational affiliations, level of prior experience with tree care, and the means by which volunteers were recruited, we take a first step in understanding the individual and organizational dynamics that shape the wider field of environmental stewardship. Finally, we discuss how these findings relate to one another.

### *Demographics*

Participants in the 2010 MillionTreesNYC Spring and Fall Planting Days came from all five boroughs of New York City, as well as from nearby suburban locations in New Jersey, Long Island and Westchester County. Figure 1 presents the home ZIP codes of the volunteer stewards participating in the study.

**Figure 1: Home ZIP Codes of Volunteer Stewards**



Over half of the respondents to the study were women (54%), 43.6% were men, and 2.3% did not specify their gender. The mean age of the volunteer stewards was 33.5 (the median age was 30).<sup>7</sup> Of those who responded to questions about their racial/ethnic backgrounds (91.4% of the sample), more than half identified themselves as white (56.8%). About a fifth reported being Hispanic (18.8%), and among the least represented groups in this category were blacks and Asians (13.5% and 10.7% respectively). Respondents tended to be well educated. In fact, over a quarter of the respondents reported having completed a graduate degree (28.1%). Exactly forty percent reported holding a university degree, and about a third of those respondents with less than a university degree reported that they are currently enrolled as students.

<sup>7</sup> As has been previously noted, only volunteers over 18 years of age were included in the study.

When compared to the population of New York City, our sample of volunteer stewards contained a greater percentage of whites, females, and highly educated people. In contrast to the 68.1% of our respondents who hold a university, graduate or professional degree, only 38.5% of the New York City population has achieved this level of educational attainment. Within the entire sample of volunteer stewards, there is an under-representation of blacks (12.4% of our sample versus 25.1 % of the New York City population) and Hispanics (17.1% of our sample versus 27.5 % of the New York City population). Other racial and ethnic groups are far more comparable, though minorities are underrepresented in all categories of the volunteer stewards with the exception of Native Americans. The gender ratio of the sample population is slightly skewed toward females when compared to the New York City population (roughly 2% more females and 4% fewer males in our sample). Table 2 presents the general demographic characteristics of the volunteer stewards in comparison with the New York City population.

The demographic differences between our sample of volunteer stewards and New York City as a whole are reflective of national trends in voluntarism. According to a Bureau of Labor Statistics report (2008), in the United States, women tend to volunteer at a higher rate than men. The same is true for individuals with higher educational attainment. In terms of race and ethnicity, the report states, “Whites continued to volunteer at a higher rate (27.9 percent) than blacks (18.2 percent) and Asians (17.7 percent). Among Hispanics, 13.5 percent volunteered.” These findings are also consistent with the report by a New York City based non-profit volunteer recruitment organization, New York Cares, which found the majority of their volunteers to be female, white, and educated (2009: 16).

**Table 3: Volunteer Stewards versus the New York City Population**

	<b>Percent of Volunteer Stewards</b>	<b>Percent in New York City<sup>8</sup></b>	<b>Difference</b>
<b>Race/Ethnicity</b>			
White	51.9%	44.6%	+7.3%
Black	12.4%	25.1%	-12.7%
Asian	9.8%	11.8%	-2.0%
Hispanic <sup>9</sup>	17.1%	27.5%	-10.4%
Native American	0.5%	0.4%	+0.1%
Missing Values	8.6%		
<b>Gender</b>			
Male	43.6%	47.7%	-4.1%
Female	54.0%	52.3%	+1.7%
Missing Values	2.3%		
<b>Education</b>			
Some High School	1.0%	10.4%	-9.4%
High School	8.6%	26.6%	-18.0%
Some University	20.5%	13.5%	+7.0%
University	40.0%	25.2%	+14.8%
Graduate or Professional School	28.1%	13.3%	+15.2%
Missing Values	1.9%		

*Politics and Civic Engagement*

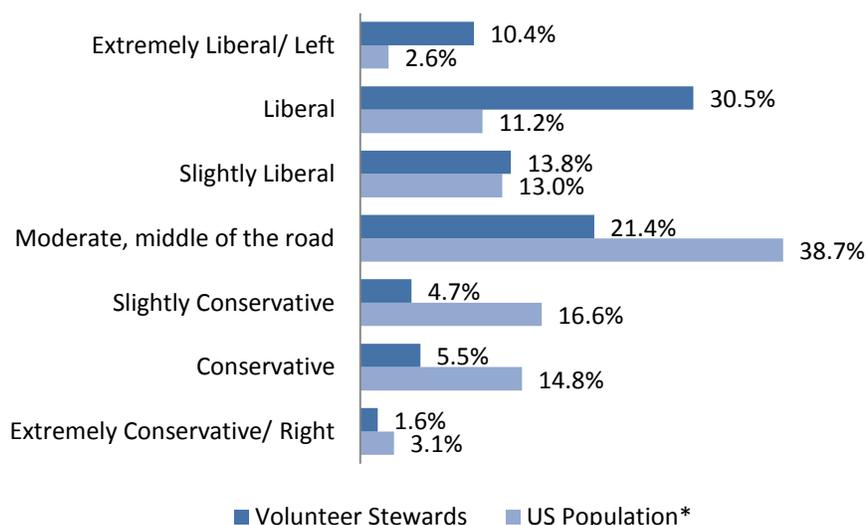
Volunteer stewards tend to be more politically liberal than the American population as a whole. Of those respondents who specified their political views, more than half (54.7%) identified themselves as extremely liberal, liberal, or slightly liberal. In contrast, only 26.8% of the U.S. population identifies themselves as extremely liberal, liberal, or slightly liberal. Only 11.8% of

<sup>8</sup> Source: 2006-2008 American Community Survey 3-Year Estimates for New York City Boroughs. Note that these data include respondents under 18, which may result in over-estimation of some differences between the populations as the survey sample does not include respondents under 18. This point is particularly important when looking at educational attainment, as younger respondents necessarily have lower educational attainment levels.

<sup>9</sup> Note that Hispanic is reported separately from race as an Ethnicity in the census data. As such, the race/ethnicity totals for the census categories add up to more than 100%.

the sample self identified as extremely conservative, conservative, or slightly conservative, in comparison to 34.5% of national population with the same political identity. The remaining 21.4% of respondents who offered their political affiliations identified themselves as moderate, which is in comparison with 38.75% at the national level. Figure 2 presents the distribution of respondents’ political views compared with national trends reported in the General Social Survey.

**Figure 2: Political Views of Volunteer Stewards Compared with the US Population**



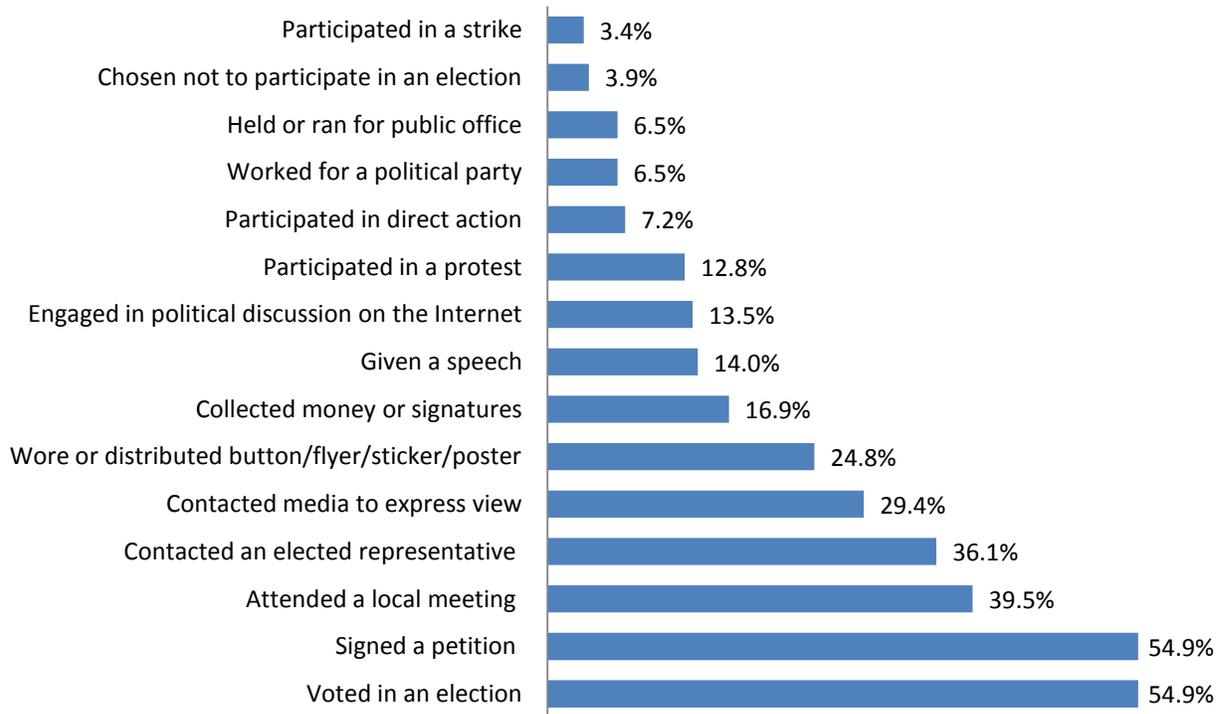
\*Results for US Population are taken from the the General Social Survey, cumulative file 1972-2008

Volunteer stewards reported being engaged in all types of civic and political activities. More than half of the sample reported having voted in an election (54.9%) in the past year.<sup>10</sup> Also, an equal number of the volunteer stewards had signed a petition in the past year and many

<sup>10</sup> Although volunteer stewards sampled during the fall planting day reported about voting in a national election and those during the spring planting day reported on a local election, the rates were relatively similar (56.8% versus 52.7% respectively).

were involved with local politics. Figure 3 presents the results of the civic and political engagement questions. All activities are reported for the prior year.

**Figure 3: Civic and Political Engagement of Volunteer Stewards in the Past Year**



In most cases, when comparing the sample of volunteer stewards at MillionTreesNYC planting days with results from national surveys, the volunteer stewards were significantly more engaged in civic and political activities than the American population. Specifically, volunteer stewards had contacted elected officials, contacted or appeared in the media to express their political views, attended a meeting on local political issues, signed a petition, engaged in political discussion on the Internet, participated in a protest, given a speech, or held/ran for public office more frequently than the national sample. Volunteer stewards were only less likely than the American population to have worked for a political party, or to have posted a button/flyer/sticker/poster for a political campaign. Table 3 presents these findings indicating the statistical significance of the comparison of means between the two samples.

**Table 4: Comparing the Engagement of Volunteer Stewards to a National Sample**

<b>Civic Action</b>	<b>Percent of Volunteer Stewards</b>	<b>Percent of American Population</b>
Signed a petition(a)	54.9% ***	35.2%
Contacted an elected government representative (a)	36.1% ***	22.3%
Attended a public, town, community board, or school meeting (b)	39.5% ***	24%
Wore or posted a button/flyer/sticker/poster of political campaign (d)	24.8%	29.3%
Participated in a protest (a)	12.8% ***	6.1%
Contacted the media to express view (a)^	19.0% ***	5.1%
Gave a speech (c)	21.7% ***	4.4%
Held or ran for public office (c)	6.5% *	.7%
Engaged in political discussion on the Internet (a)	13.5% ***	5.4%
Worked for a political party (c)	6.5% *	18.7%

\*t-test is significant at the 0.1 level. \*\*t-test is significant at the 0.01 level. \*\*\*t-test is significant at the 0.001 level.

(a)National sample data from the General Social Survey, cumulative file 1972-2008, see [www.norc.umd.edu/GSS+Website/](http://www.norc.umd.edu/GSS+Website/) (Accessed 16 June 2010).

(b)National sample data from the Roper Social Capital Community Survey, 2006, see [http://www.ropercenter.uconn.edu/data\\_access/data/datasets/social\\_capital\\_community\\_survey\\_2006.html](http://www.ropercenter.uconn.edu/data_access/data/datasets/social_capital_community_survey_2006.html) (Accessed 24 June 2010).

(c)National sample data from the Roper Social and Political Trends Data, 1973-1994, see [http://www.ropercenter.uconn.edu/data\\_access/data/datasets/roper\\_trends.html](http://www.ropercenter.uconn.edu/data_access/data/datasets/roper_trends.html) (accessed 24 June 2010).

(d)National sample data from the CIRCLE Civic and Political Health of the Nation Survey, 2006, see [http://www.civicyouth.org/research/products/youth\\_index.htm](http://www.civicyouth.org/research/products/youth_index.htm) (accessed 24 June 2010).

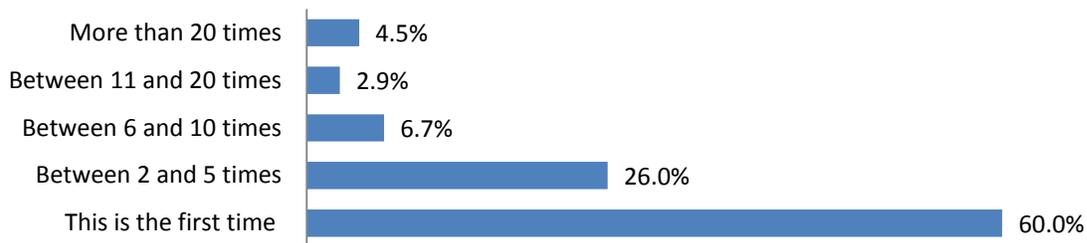
^ The “contacted the media to express view” variable reported here is derived from three survey question responses, aggregated to align with national survey question formats. The questions were: In the past year have you: 1) Written a letter to a newspaper 2) Written an article for a magazine or newspaper 3) Contacted the national or local media in another way.

### *Environmental Stewardship*

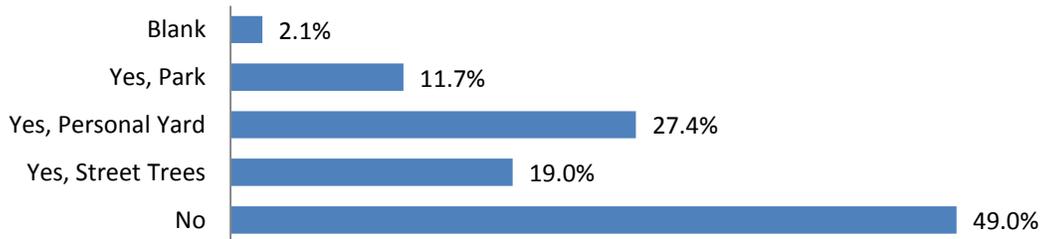
With regard to their involvement in other environmental stewardship activities, the majority of the volunteers at the MillionTreesNYC planting events were relatively inexperienced: nearly two-thirds (60.0%) of those surveyed responded that the event was the first time they had

participated in a volunteer planting day and the overwhelming majority were not involved in the MillionTreesNYC Stewardship Corps (92.1%). Looking beyond activities that were specifically related to the MillionTreesNYC campaign, more than half of the volunteers reported taking care of trees at another site (58.1%), and about a third were members of local environmental stewardship organizations (33.8%). The following three figures present the distribution of respondents to questions related to previous stewardship experience.

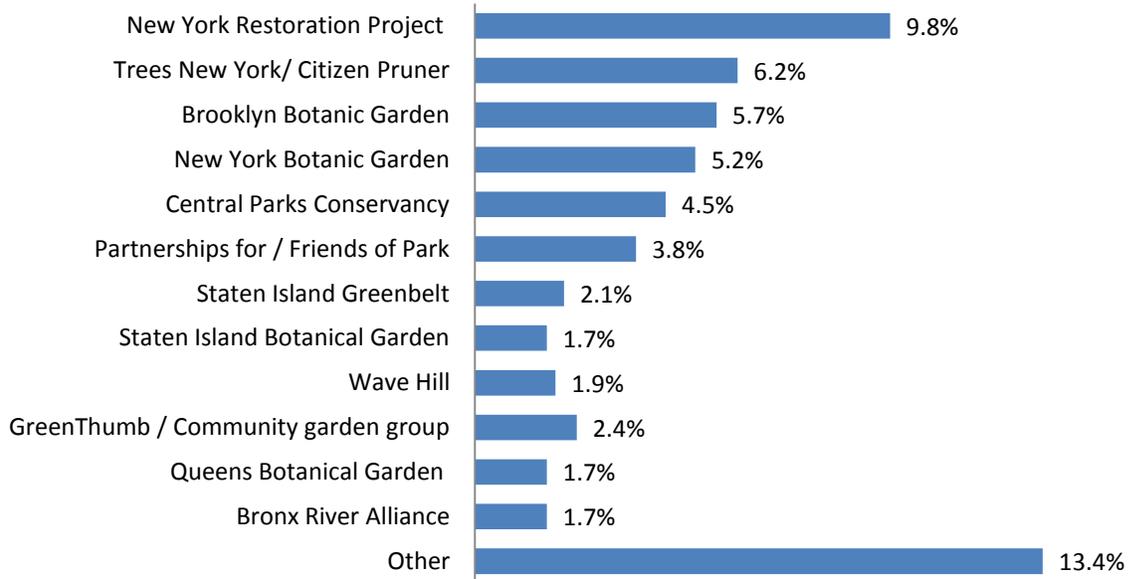
**Figure 4: Previous Involvement in Tree Planting Events**



**Figure 5: Experience with Stewarding Trees at Other Sites**



**Figure 6: Membership in Local Stewardship Groups**



When we look at the relationship among these stewardship variables, there are significant differences between those volunteers who were previously engaged and those who were not and these differences held in both the spring and fall planting cohorts. Specifically, those volunteers who reported attending a high number (>20) of tree plantings in the past five years were very likely (72.2%) to be a member of a local stewardship organization, while most (78.6%) volunteers who were attending their first planting were not members. As well, 16 of the 18 highly engaged volunteers from the spring and fall samples who had attended more than 20 tree plantings in the past five years also reported taking care of trees at other sites, and most (79%) of the volunteers who did not take of trees at other sites were also not members of local stewardship groups. In short, the more plantings a respondent had attended, the more likely they were to be a member of a local stewardship organization and to take care of trees at other sites. Additionally, members of local stewardship organizations, whether experienced planters or not, were more likely to take care of trees at other sites.

In Pearson chi-square tests comparing these stewardship variables, the results are significant and the null hypothesis that participants engage in the same number of volunteer tree plantings no matter their organizational affiliations or previous tree planting experience is rejected. Tables 4, 5, and 6 summarize these findings. It is also worth noting that all three of these variables measuring the volunteers’ levels of environmental stewardship are correlated ( $p < 0.01$ ).

**Table 5: Planting Experience and Organizational Membership**

	Is member of stewardship organization		Pearson’s $\chi^2$
	Yes	No	
<b>First Planting Attended</b>	21.4% (54)	78.6% (198)	
<b>Attended Between 2 and 5 Plantings</b>	40.4% (44)	59.6% (65)	
<b>Attended Between 6 and 10 Plantings</b>	71.4% (20)	28.6% (8)	
<b>Attended Between 11 and 20 Plantings</b>	83.3% (10)	16.7% (2)	
<b>Attended More than 20 Plantings</b>	72.2% (13)	27.8% (5)	
			62.220***

\* Chi-square is significant at the 0.1 level.  
 \*\* Chi-square is significant at the 0.01 level.  
 \*\*\* Chi-square is significant at the 0.001 level.

**Table 6: Planting Experience and Tree Care**

	<b>Takes Care of Trees at Other Site</b>		<b>Pearson's <math>\chi^2</math></b>
	<b>Yes</b>	<b>No</b>	
<b>First Planting Attended</b>	30.8% (76)	69.2% (171)	
<b>Attended Between 2 and 5 Plantings</b>	56.1% (60)	43.9% (47)	
<b>Attended Between 6 and 10 Plantings</b>	73.1% (19)	26.9% (7)	
<b>Attended Between 11 and 20 Plantings</b>	91.7% (11)	8.3% (1)	
<b>Attended More than 20 Plantings</b>	88.9% (16)	11.1% (2)	
			58.453***

\* Chi-square is significant at the 0.1 level.

\*\* Chi-square is significant at the 0.01 level.

\*\*\* Chi-square is significant at the 0.001 level.

**Table 7: Tree Care and Organizational Membership**

	<b>Is member of stewardship organization</b>		<b>Pearson's <math>\chi^2</math></b>
	<b>Yes</b>	<b>No</b>	
<b>Takes care of trees at another site</b>	50% (91)	50% (91)	
<b>Does not take care of trees at another site</b>	21% (48)	79% (181)	
			38.207***

\* Chi-square is significant at the 0.1 level.

\*\* Chi-square is significant at the 0.01 level.

\*\*\* Chi-square is significant at the 0.001 level.

### *Mobilizing Volunteer Stewards*

Personal social ties and organizational affiliations played an important role in mobilizing New Yorkers to participate as volunteer stewards. Consistent with the results of recent studies of activism and protest, which focus on the different ways that people mobilize (e.g. Fisher and Boekkoi 2010; Fisher et al. 2005), there are interesting divergences in the roles played by

personal and organizational networks among volunteer stewards at the MillionTreesNYC planting events. In order to explore these separate roles, we specifically examine how volunteers heard about the event, and who they came with to the event.

*How Volunteer Stewards Heard About the Event.* Direct personal and organizational ties were the dominant method for recruiting people to the MillionTreesNYC planting day. In fact, 89.6 % of the volunteer stewards reported hearing about the event from people they knew or organizations with which they were affiliated. The most common way that volunteers heard about the tree planting event was through school or work (34.5%). Many volunteers also heard through personal outreach from an organization or group (26.5%), family and friends (19.8%), or an e-mail message (8.8%).

**Table 8: How Volunteer Stewards Heard about the Event**

	<b>Number</b>	<b>Percent<sup>^</sup></b>
School/ Work	145	34.5%
People from an organization/group	111	26.4%
Family/ Friends	83	19.8%
Web Site	60	14.3%
E-mail/ Mailing list	37	8.8%
Newsletter of an organization/group	31	7.4%
Other	19	4.5%
Flyers or Posters	18	4.3%
Newspaper	5	1.2%
Radio/ TV	2	0.5%

<sup>^</sup> Note that the percentages add up to more than 100% because more than one response was allowed for this question

*With Whom They Came to the Event.* Social ties to organizations and individuals also played a significant role in how people got to the event (85.2% of respondents indicated that they came with an organization, friend, family member, colleague, or some combination of those).

The largest percentage of volunteer stewards reported coming to the event with members of an organization (29.8%). Roughly comparable percentages of respondents came to the event with partners/family-members, or colleagues/co-students (27.9% and 25.6% respectively). In contrast, relatively few volunteer stewards reported coming to the event with friends or alone (14.3% and 13.8% respectively). Table 8 presents these findings. In sum, volunteers at the MillionTreesNYC planting days demonstrate the social and civic nature of stewardship. Volunteer stewards predominantly heard about the event and traveled to it with members of their personal and/or organizational social networks: they were digging together.

**Table 9: With Whom They Came**

	<b>Number</b>	<b>Percent</b>
With Members of Organization	125	29.8%
Colleagues/Co-Students	117	27.9%
Partner/Family	107	25.5%
Friends/Neighbors	60	14.3%
Alone	58	13.8%

<sup>^</sup> Note that the percentages add up to more than 100% because more than one response was allowed for this question

The role that social networks played in mobilizing volunteer stewards becomes even more pronounced when we look at the relationship between whether the volunteer knew a member of a local stewardship organization and the number of tree planting events that s/he had attended. Three-quarters (75.1%) first-time volunteers reported not knowing anyone who was a member of a local stewardship organization. However, more than three-quarters (76.7%) of the volunteers who had attended more than ten planting events in the past five years reported knowing a member of a local group. In a Pearson chi-square test comparing these variables, the

results are very significant and the null hypothesis that these variables are not related is rejected.

Table 9 presents these results.

**Table 10: Planting Experience and Knows a Member of a Stewardship Organization**

	Knows a member of a stewardship organization		Pearson's $\chi^2$
	Yes	No	
<b>First Planting Attended</b>	24.9% (62)	75.1% (187)	
<b>Attended Between 2 and 5 Plantings</b>	34.9% (38)	65.1% (71)	
<b>Attended Between 6 and 10 Plantings</b>	59.3% (16)	40.7% (11)	
<b>Attended Between 11 and 20 Plantings</b>	75.0% (9)	25.0% (3)	
<b>Attended More than 20 Plantings</b>	77.8% (14)	22.2% (4)	
			41.522***

- \* Chi-square is significant at the 0.1 level.
- \*\* Chi-square is significant at the 0.01 level.
- \*\*\* Chi-square is significant at the 0.001 level.

These findings provide even more support for the notion that stewardship organizations are essential drivers in mobilizing individual volunteer stewards, whether they are members of the organization or not. Even if they are not members of a stewardship group, *knowing* a member of such a group is strongly related to higher levels of participation for volunteer stewards. By contrast, those participants who reported hearing about the event from friends or family members, but reported that they did not know a member of an environmental stewardship group, were less likely to have attended numerous tree planting events. In an ordinary least squares (OLS) regression analysis, we find that taking care of trees at other sites ( $\beta = .259$ ), being a member of a stewardship organization ( $\beta = .213$ ), and knowing a member of an environmental organization ( $\beta = .160$ ), are significant predictors of how many plantings a volunteer steward has

attended. This regression equation yields an adjusted R-squared of 0.215. Table 10 presents these results.

**Table 11: Regression of Planting Experience on Selected Independent Variables**  
Shows Standardized Regression Coefficients and (Unstandardized Regression Coefficients) and **Significance Level** (Dependent Variable= number of plantings attended, N =410)

Independent Variable	Final Model
Is a Member of Local Stewardship Organization	.213 (.462) ** <b>.000</b>
Knows a Member of a Local Stewardship Organization	.160 (.348) *** <b>.001</b>
Takes Care of Trees at Other Sites	.259 (.537) *** <b>.000</b>
Constant	(1.141)
Adjusted R <sup>2</sup>	.215

\* Significant at the .1 level  
 \*\* Significant at the .01 level  
 \*\*\* Significant at the .001 level

Members of local environmental stewardship organizations continuously mobilize volunteer stewards for the MillionTreesNYC tree planting events through their personal social networks outside of the organization. This mobilization, however, tends to extend to people that are already engaged in environmental stewardship: they already take care of trees at other sites and/or have come out to numerous prior tree planting events. This type of mobilization does not necessarily extend to new stewards. Rather, the stewardship field is somewhat bifurcated between the committed stewards that continuously engage and the novice stewards who care for it much less frequently.

*How do Novices Mobilize?* Although organizational networks play a significant role in mobilizing engaged stewards, those with no prior experience mobilize very differently. Roughly

one third of the volunteer stewards (145 out of the 410 eligible respondents) were novices at the time of the tree planting event: they were not members of a local stewardship organization, they did not take care of trees at other sites, and they had never before been to a tree planting event. These volunteer stewards were considerably less likely to have heard about the event from an organization that they were involved with or from school or work. They were also markedly less likely to have heard about the event from a website or email. Novices were by and large mobilized through individual social ties with family, friends, and colleagues. Although this difference between novices and more experienced stewards showed a decline from the spring to the fall cohort, it remained a clear trend. As well, while novices tended to be just as likely to come to the planting event with an organization, family member, friend or colleague as the more engaged dedicated stewards, they were far less likely to come alone.

In all, personal ties play a larger role for volunteer stewards who are novices. It is also worth noting that novice stewards scored lower than the dedicated stewards on all of the measures of civic engagement. In other words, those volunteers with higher degrees of involvement in environmental stewardship also tended to engage more with stewardship organizations and with other civic and political activities.

## **Discussion and Conclusion**

The MillionTreesNYC tree planting events brought out people with all levels of stewardship experience to participate as volunteers. Overall, they were a relatively engaged group of individuals. In almost all categories, the volunteers surveyed were more civically engaged than the U.S. population. Comparing those volunteers with more stewardship experience to those who were novices provides some insights into the different mobilizing roles played by personal and

organizational networks within the system of environmental stewardship. Further, the differences between experienced and novice stewards go well beyond stewardship activities like planting trees and joining environmental groups. They are also visible in overall levels of civic engagement. Although they scored higher than the American population, novice stewards scored *lower* on all measures of civic engagement than the experienced stewards.

Although the results of this analysis of volunteer stewards in New York City provide some support for the claim that planting trees leads to better citizenship, more research is needed to understand the relationship between civic engagement and environmental stewardship. Future research will address this issue. First, we will expand our analyses of the differences between novice and experienced stewards. Second, we will collect more data to flesh out the relationship between the experience of being a volunteer tree steward and involvement in other stewardship activities, as well as broader civic engagement. One specific question that we will answer in this follow up research will be the degree to which volunteer stewards continue to be engaged and how their engagement has changed if at all.

Beyond the next stages of this project, future research should explore if the relationships we observe in New York City hold elsewhere. Currently, a number of other cities in the United States and abroad are engaging in similar types of re-greening efforts that engage volunteer stewards. Also, this research leads to questions regarding the nature of civic engagement more broadly. It is unclear if the type of civic engagement studied in the project—planting trees—is the same as other types of civic engagement, such as working in a soup kitchen or volunteering for a political campaign. Future research should look at how different types of civic activities are related to the various activities associated with engaged citizenship. It is possible that planting trees leads to good citizens but working for a campaign does not or vice versa. Through an

expanded study of such activities, we can unpack any differences among types of civic engagement and understand better what exactly makes good citizens.

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