MARYLAND SEA GRANT REPRINT

Who engages in environmental stewardship? Participation in the Maryland Watershed Stewards Academies

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Publication Number
UM-SG-RO-2015-05

UNIVERSITY OF MARYLAND
SEA GRANT COLLEGE PROGRAM
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Who Engages in Environmental Stewardship?
Participation in the Maryland Watershed Stewards Academies

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Abstract

Who participates in environmental stewardship? This paper focuses on the three Watershed Stewards Academies (WSAs) in Maryland that train citizens to conduct watershed protection and restoration projects and educate members of their communities about watershed issues. Members, stewards, and volunteers from these WSAs were surveyed for this study to learn more about who is involved in environmental stewardship. Compared with the general populations of the areas they serve, the WSA stewards in our sample are more civically engaged, politically liberal, predominantly white, near retirement age, female, and well-educated. The findings from this survey suggest that the WSAs have been successful in attracting a specific demographic of people, typical to that of similar organizations, and that environmental stewardship is connected to broader patterns of civic participation.

This project was funded by a grant from Maryland Sea Grant "Understanding the Effectiveness of the Watershed Stewards Academies in Maryland." This whitepaper is compiled with special thanks to the leaders of the Maryland WSAs for their assistance.

Executive Summary

How effective are the Watershed Stewards Academies (WSAs) in Maryland at connecting to communities and protecting the environment?

This paper focuses on the WSAs in Maryland to understand how these academies are training citizens to serve as environmental stewards in their communities. It presents results from a survey of members of the three WSAs in Maryland: Anne Arundel WSA, Howard County WSA, and National Capital Region WSA. These WSAs work to train citizens to conduct watershed protection and restoration projects and educate members of their communities about watershed issues. Members, stewards, and volunteers from the Anne Arundel, Howard County, and the National Capital Region WSAs were surveyed for this study. The online survey, which was conducted in the second half of 2014, included questions about individual respondents' motivations for joining the WSA program, their backgrounds, and their activities in the programs.

Compared with the general populations of the areas they serve, the WSA stewards in our sample are more predominantly white, near retirement age, female, and well educated. Further, they reported being highly engaged in a range of civic and political activities, as well as being politically liberal as compared to the American population as a whole. WSA stewards engaged in a wide range of activities related to watershed protection and restoration including education campaigns, tree planting, removal of invasive plants, and installation of rain barrels and rain gardens. The findings from this survey suggest that the WSAs have been successful in attracting a specific demographic of people, typical to that of similar organizations, and that environmental stewardship is connected to broader patterns of civic participation.

About the Study

This study was funded by a grant from the Maryland Sea Grant Program. The grant, entitled *Understanding the Effectiveness of the Watershed Stewards Academies in Maryland* studies the WSAs in Maryland to understand how these academies are training citizens to steward their communities, looking specifically at the internal dynamics of each group, along with the ways these groups are connecting to their communities.

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The authors would like to extend special thanks to the directors and board members of the three WSAs whose assistance has been integral to the success of this project.

Introduction

Social science research has highlighted environmental stewardship as a civic practice emerging at the intersection of the environmental movement and local environmentalism (see e.g. Weber 2000; Kempton et al. 2001; Sirianni and Friedland 2001; U.S. EPA 2005; Svendsen and Campbell 2005, 2008; Fisher et al. 2015). Following previous work by Fisher and colleagues, we define environmental stewardship as the act of "conserving, managing, monitoring, advocating for, and educating local people about a wide range of quality-of-life issues related to public and private resources in their local areas" (Fisher et al. 2012: 27). Researchers have explored how local environmental stewardship emerges in the context of civic education, self-help, and community capacity-building, with a particular focus on the organizations that facilitate environmental stewardship (Burch and Grove 1993; Shutkin 2000; Evans 2002; Westphal 2003; Sirianni 2006; Andrews and Edwards 2005; Fisher et al. 2012; Westphal et al. 2014; see also Lichterman 1996; Mertig and Dunlap 2001). Although these works have described what environmental stewardship may be, they have yet to address adequately the questions of who becomes involved in such a wide variety of organizations or what motivates them to become involved (but see Fisher et al. 2015).

This paper focuses on the Maryland Watershed Stewards Academies (WSAs), a network of stewardship organizations that recruit, train, and support community members to serve as leaders on watershed restoration issues in their communities. Participation in the WSAs is volunteer-based: most individuals become certified as "Master Stewards" through WSA courses, which provide them with tools and support to lead restoration and education efforts in their own communities. Environmental stewardship activities carried out by WSA participants include installing of rain barrels and rain gardens, planting vegetation and trees, and removing non-

native plants in addition to a range of other activities that contribute to watershed restoration efforts. WSA participants also engage in advocacy education campaigns aimed at educating members of their communities about watershed issues. This paper examines who participates in the WSA programs, comparing survey data collected from WSA members to the demographics of local populations to understand better the social landscape of environmental participation and the connections between stewardship and broader forms of civic participation

Despite observations of civically active and engaged Americans in previous work (see particularly Tocqueville 1966; see also Wuthnow 1991; Ladd 1999), recent research on civic participation in the United States has shown evidence of an increasingly narrow public sphere (see McPherson et al. 2006 for a more in-depth discussion of social isolation in the US). Putnam, for example, describes a social environment in which "Americans today feel vaguely and uncomfortably disconnected" from one another and their communities (2000: 402; see also Bellah et al. 1996; Putnam 1995; Sander and Putnam 2010). Related research that focuses on various aspects of the political system, such as voting behavior (e.g. Piven and Cloward 2000; Eisner 2004; but see McDonald and Popkin 2001), social capital, political trust, volunteering and participation more broadly defined (e.g. Almond and Verba 1963; Eliasoph 1998; see also Smith 1994) has also affirmed these sweeping conclusions.

However, a number of scholars offer conflicting views of civic engagement (e.g. Boyte and Kari 1996; Skocpol 1996, 2003; Weir and Ganz 1997; Paxton 1999; Rotolo 1999; Skocpol and Fiorina 1999; Eckstein 2001; Wuthnow 2004; Sampson et al. 2005), which tend to center around ways that Americans *are* civically engaged. For example, Wuthnow argues that "individualism does not necessarily contradict holding altruistic values and engaging in a wide variety of caring and community-service activities" by demonstrating that self-fulfillment may

be the goal of otherwise disconnected individuals in becoming civically engaged (1991: 23; see also 1998; Lichterman 1995, 1996; Westphal 2003; McCarthy 1987; Jasper and Poulsen 1995).

The environmental movement is one of the cases Putnam (2000) defines as a "countertrend" to broader declines in civic participation, where individuals *are* becoming more civically engaged (see also Berry 1999). Numerous studies have shown evidence that Americans are becoming more civically engaged in environmental stewardship at the local level (see particularly Weber 2000; Sirianni and Friedland 2001: chapter 3; Portney 2005; Kramer 2007; Portney and Berry 2010). For example, Overdevest and colleagues find that volunteering with local stream monitoring efforts was linked in increases in both social capital and civic engagement (2004). In their study of tree planting volunteers in New York City, Fisher and colleagues find that the environmental stewards in their sample were statistically significantly more likely to participate in a range of civic and environmental activities when compared to the national average (for a full discussion, see Fisher et al. 2015). Follow-up interviews with volunteer tree planters supported the notion that environmental stewardship served as a gateway to other forms of civic engagement: not counting religious participation or voting in an election, 56% of their sample (consistent regardless of race) reported "having a greater or equal portion of their lives participating in environmental stewardship activities" than other civic activities (2015:112).

Although the New York City volunteer stewards studied by Fisher and her colleagues worked in racially and economically diverse urban areas, they were well-educated and racially homogenous as a group—in other words, the group of volunteers did not reflect the composition of the neighborhoods in which they worked (Fisher et al. 2015). These findings are not necessarily unexpected, given recent research on civic engagement showing support for

differences in participation based on race and class (see particularly Verba et al. 2003; Schlozman et al. 2012; see also Schlozman et al. 1999). For example, Travaline and Hunold find that people involved with urban agriculture in Philadelphia were mostly female, white, and middle class (2010). Looking specifically at race and environmentalism, Johnson and colleagues find that Blacks and foreign-born Latinos are "least similar to Whites" in terms of environmental beliefs and behaviors (2004: 178; see also Barkan 2004). These findings support earlier research showing that Blacks were less likely to participate in mainstream environmental activities (e.g. Jones 1998). However, this body of research has largely focused on civic engagement broadly, rather than on environmental stewardship and the intersection of race of and class specifically (but see Arp and Boekelman 1997).

The WSAs in Maryland provide an interesting case for exploring the relationship between environmental participation and civic engagement. The WSAs in Maryland are a part of a national effort to recruit and train individuals to become master watershed stewards, to assess watersheds, educate their local communities about watersheds, and contribute to the overall reduction in pollutants to watersheds (see www.aawsa.org for information about the WSA model). In other words, these WSAs provide an opportunity to look at the demographics of participation in a specific type of stewardship across the urban-rural gradient within the state of Maryland.

Studying the WSAs of Maryland

In 2009, Anne Arundel County established the first WSA in Maryland. This franchise served as the original model for the development of two additional, independent WSAs—National Capital Region WSA and Howard County WSA (several other WSAs are in the process of

development). Although each WSA is free to address the specific needs of their region, contextualized by their individual civic and government relationships, community demographics, and environmental needs, each WSA adheres to a consistent model of training and outreach. In fact, anyone who wishes to start a new WSA franchise in Maryland is required to have completed training in one of the previously established programs (interview with WSA leaders, May 2014). Between the time that the Anne Arundel WSA began training stewards in 2009 to the end of 2014, over 175 master stewards had completed the WSA certification process in one of the three WSAs. This certification process involves completing a course over several months that culminates in the completion of a capstone project where individuals go out into their communities to organize their own project aimed at affecting positive environmental change. The training provided by the WSAs supports individual stewards in becoming leaders and encourages them to recognize their local communities' specific needs and capabilities and to tailor their conservation efforts to meet those needs.

This paper presents finding from a survey of the WSA stewards, which helps us to learn more about the people being trained as watershed stewardship leaders and assess the effectiveness of the WSAs in reaching out to the diverse set of communities within their respective regions. We begin with a description of our methods for conducting an online survey of WSA participants and the process by which survey data were analyzed. Then, we present our findings, focusing on the social and demographic characteristics of respondents.

Data and Methods

Data were collected from a survey of all WSA participants during the summer of 2014. Respondents include Master Watershed Stewards (participants in WSA programs and training courses), volunteers, board members, paid and unpaid staff, and consortium members. WSA directors contacted potential participants on behalf of the research team and requested that they participate in the survey.

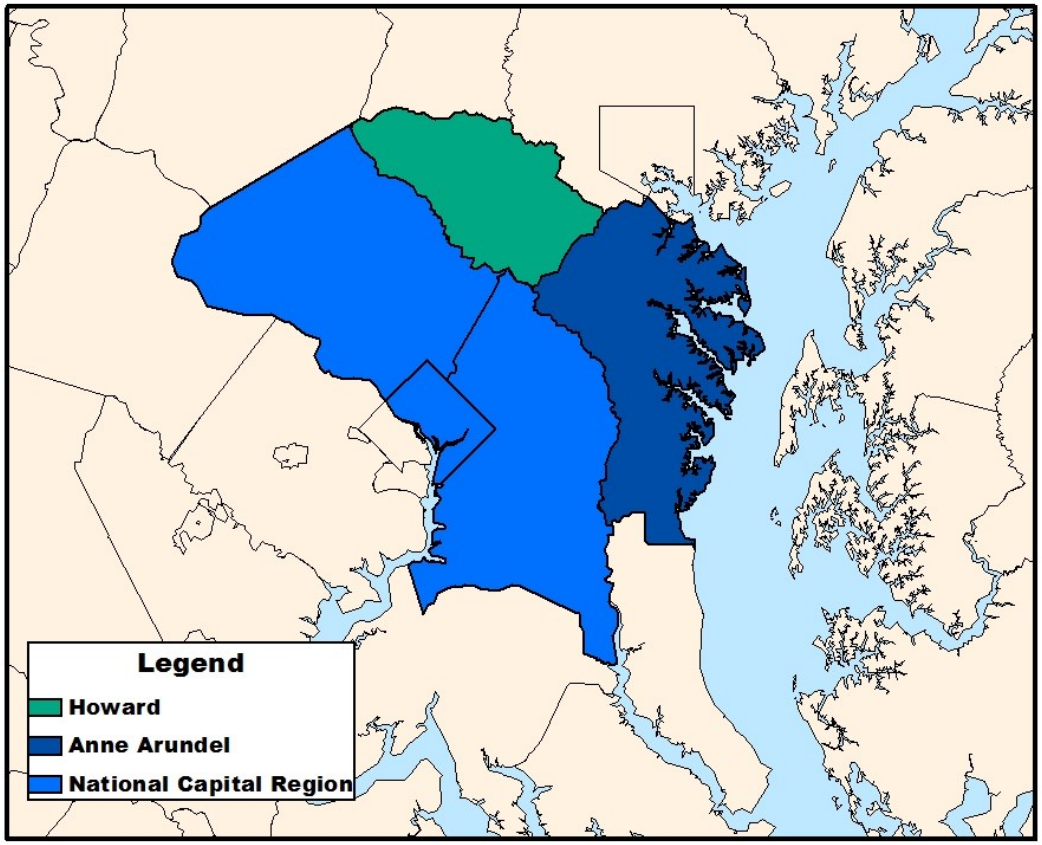
Site Selection

This study focuses on the three Watershed Stewards Academies that are currently functioning in the State of Maryland.[1] The first WSA chapter, established in Anne Arundel County, is a partnership between the Arlington Echo Outdoor Education Program of Anne Arundel Public Schools and the Anne Arundel County Department of Public Works. In 2011, the National Capital Region WSA was founded through a partnership between the Anacostia Watershed Society, the District Department of the Environment, and a coalition of watershed protection groups in the Potomac, Rock Creek, Anacostia, and East Patuxent watersheds[2]. Most recently, in 2012, volunteers in Howard County created a new WSA program with grant money from the National Fish and Wildlife Foundation and Howard County itself. Since the first WSA began in Anne Arundel County in 2009, over 175 master stewards have been trained across the three regions to work in their local communities. Figure 1 presents a map of the WSA programs in Maryland.

[1] Cecil County, Maryland recently began a new WSA, but their first cohort of stewards has not yet completed their training (http://www.ccgov.org/news/mcsorley.cfm accessed 19 February 2015).

[2] The National Capital Region WSA is based in Maryland, but also serves watersheds within the boundaries of Washington, DC.

Figure 1: Established WSA Programs in Maryland



Online Survey

The online survey builds on the Volunteer Stewardship Survey that Fisher and colleagues developed to study environmental volunteers engaged in tree planting activities (for a full discussion see Fisher et al. 2015). The survey instrument was modified to incorporate topics related to watershed stewardship and in response to input from the leaders of the WSAs. The survey was designed to be relatively short (respondents completed the survey in about 15 minutes) and non-invasive so as to encourage the widest possible participation among WSA members. Questions focused on how individual participants got involved with the WSAs and

how they became engaged with WSA programs, as well as asking about where WSA participants lived, how they heard about the WSAs, with whom they attended WSA events and courses, what prior connections they had with local environmental stewardship organizations, and their levels of civic/political engagement. The civic engagement questions were based in part on the "political activity" section of the General Social Survey's cumulative file (1972-2012) and on portions of the Roper Center Civic and Political Trends Data (1973-2014). Results are also compared to the findings of the CIRCLE Civic and Political Health of the Nation Survey (2006), the Roper Center Social Capital Community Survey (2006), and the American Community Survey (2012).

WSA leaders distributed the survey to their members via email. In these messages, WSA leaders introduced the research team, described the project, and requested that their members participate in the survey. Two sets of reminder emails were sent to organizational mailing lists. In total, 274 individual WSA participants were contacted across the three WSAs. If respondents had not filled out the survey after the initial round of emails, they were contacted by the research team on an individual basis. All research was conducted in accordance with the Institutional Review Board requirements of the University of Maryland (protocol #598272-1). In total, 154 members completed the survey, for a response rate of 56.2%. Table 1 presents an overview of the three WSAs included in the study, along with the response rates for each program.

Table 1: Survey sample, responses, and response rate by WSA

WSA	Valid emails provided as contact information	Surveys Completed	Response Rate by WSA
Anne Arundel County	153	90	58.8%
Howard County	21	15	71.4%
North Capital Region	100	49	49.0%
Total	274	154	56.2%

Data from the surveys collected from the three WSAs were aggregated into a spreadsheet and, where appropriate, given a numerical code. Data were analyzed using PASW Statistics 19 (SPSS) statistical software and Google fusion table GIS software. In the pages that follow, we present the results of our analysis of participation in the WSAs in Maryland.[3]

Findings

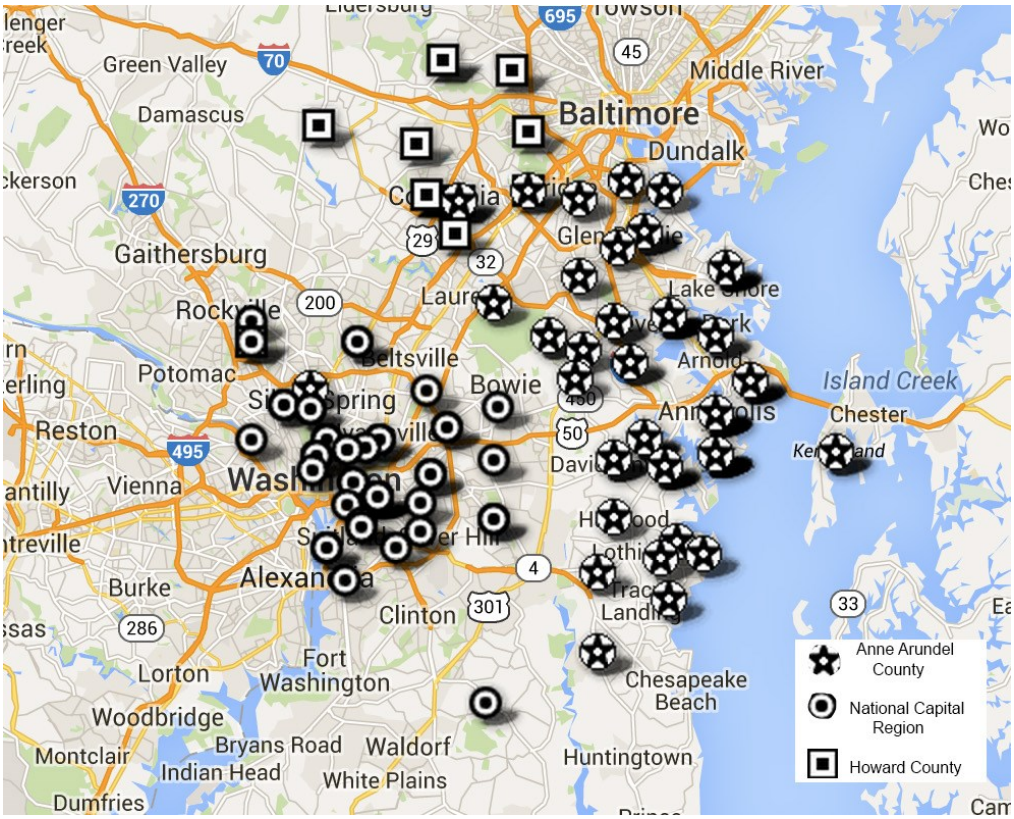
We focus on four main themes in the findings of this study of participants in the WSAs in Maryland and DC: demographics, civic engagement, watershed stewardship activities, and mobilization. We begin by providing some general demographic information on our sample population, comparing these demographics to countywide and national trends. Next, we explore the civic and political engagement of the respondents to our survey, comparing our sample to the national population. Then, we discuss WSA participants' engagement with watershed stewardship, both within and outside of the WSA programs. Finally, we look at the ways in which participants found out about, were recruited for, and participated in WSA programs.

[3] Based on preliminary analysis of the data, the results from the three separate WSAs are consistent and the findings can be presented in aggregate form. Tests for the analysis of variance were not found to be statistically significant and/or did not meet the assumptions of the test and any conclusions drawn from them would not be valid. Therefore, we find that the best means of presentation for these data are in aggregate form. In addition, in some cases, we also compare responses across the WSA.

Demographics

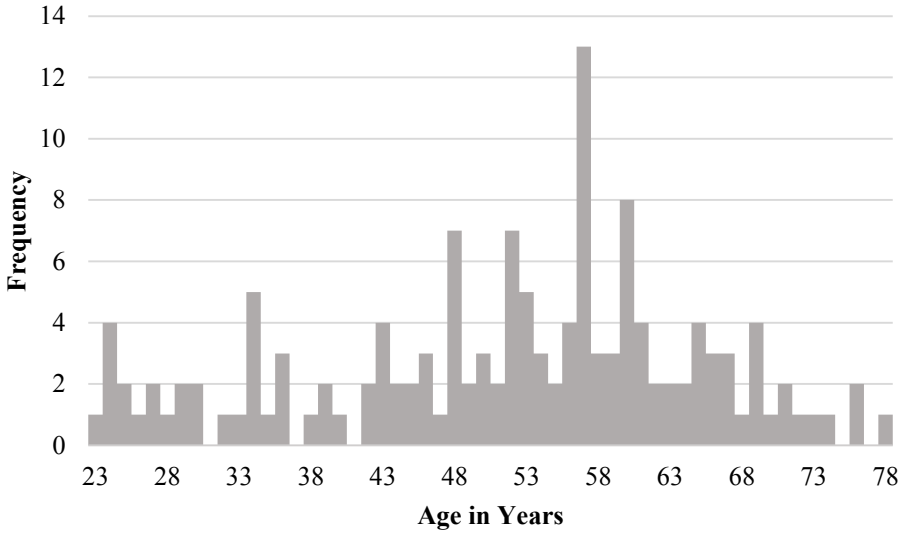
WSA participants live in and near the counties served by their WSA programs. Figure 2 presents the home ZIP codes of the WSA participants from the DC Metro area who participated in the study. In total, 151 respondents provided their home zip code, and we found that 92.1% of participants (82 of 89) affiliated with the Anne Arundel WSA live in Anne Arundel County, 97.8% of participants (45 of 46) affiliated with the North Capital Region WSA live in Prince George's County, Montgomery County, or Washington, D.C., and 80% of participants (12 of 15) affiliated with the Howard WSA live in Howard County.

Figure 2: Map of Home ZIP Codes of WSA Stewards



Consistent with research on volunteerism broadly (e.g. Verba et al. 2003; Schlozman et al. 2012) as well as environmental participation in the US (e.g. Travaline and Hunold 2010; Fisher et al. 2015), survey results show that participants in the WSAs were predominantly female, white, and highly educated. In addition, these individuals tended to be older: the mean age of volunteers was 51.5 years and the median age was 53.5.[4] Figure 3 presents the age distribution of the stewards who participated in the study.

Figure 3: Aggregate Age Distribution of WSA Stewards



Nearly two thirds of the respondents to the study were women (64.4%), while 35.6% were men. Of those who responded to the questions about their racial/ethnic backgrounds (92.5% of the sample), over three quarters (78%) identified themselves as white. Of non-white respondents, 14% identified as Black and 2% identified as Asian. No respondents identified as Hispanic or Native American. A small number of respondents (6%) reported other races in their surveys. WSA stewards in the sample were also highly educated. Half of respondents had completed a

[4] All respondents were over the age of 18, as required by Institutional Review Board protocol. It is worth noting that no WSA participants reported being under the age of 18.

graduate degree (50.7%), while 38.5% had completed university, 10.8% had completed some university or were still in school, and 100% had completed high school.

In comparison with the population of the counties in which the WSAs operate, our sample of WSA stewards contained a greater percentage of women, whites, and highly educated people. The gender ratio is skewed toward females, with 13.3% more females than the population of surrounding counties. Whites were overrepresented in the sample by 15.9%, while non-white populations (Blacks, Latinos, and Asians) were underrepresented. Respondents also indicated higher levels of education than surrounding populations: compared to the 19.6% of the county-level population, over half of the WSA stewards in our sample held graduate degrees. WSA stewards were also more likely to have completed college (38.5% versus 30.0% of the surrounding counties' populations). College students were underrepresented (10.8 % of WSA stewards versus 19.1% of county-level populations). Our sample did not include any respondents who had not completed high school or held only a high school diploma. Overall, that the demographic distribution of volunteer stewards is statistically significantly more female, white, and highly educated than the general population. Table 2 presents the general demographic characteristics of WSA stewards in comparison to the populations of surrounding counties.

Table 2: WSA Stewards versus Population in Surrounding Counties

		DC/MD Counties (weighted values)	WSA Stewards Sample
Gender	*Male*	48.9%	35.6%**
	Female	51.1%	64.4%**
Highest Level of Education	*Some High School*	9.1%	0%
	High School	22.2%	0%
	Some College/University	19.1%	10.8%***
	College/University	30.0%	38.5%**
	Graduate or Professional School	19.6%	50.7%***
Race[1]	*White*	62.1%	78.0%**
	Non-White	37.9%	22.0%***
Note: Weighted DC and MD Counties Values sample data from the American Community Survey 2012, 2012 American Community Survey 1-Year Estimates, see http://factfinder2.census.gov/ (Accessed 1 April 2014). Weighted values were calculated using mean averages for each WSA's geography and weighting those averages by the proportions found in our sample of stewards to find a grand mean.			
1) Race compared to proportion of American Community Survey respondents who indicated only one race			
*** indicates significance at the 0.001 level or higher (two-tailed p-value) ** indicates significance at the 0.01 level (two-tailed p-value)			

Politics and Civic Engagement

Research on environmental participation in the US shows that participants tend to be politically liberal (e.g. Dunlap, Xiao and McCright 2001). Consistent with these findings, WSA stewards reported being more politically liberal than the American population as a whole. Of those respondents who specified their political views, more than two-thirds (67.6%) identified themselves as extremely liberal, liberal, or slightly liberal (compared to 27% of the U.S. population as reported in the General Social Survey 2012). At the other end of the spectrum, 16.6% of WSA stewards identified as slightly conservative and conservative, and no respondents indicated that they were extremely conservative, in comparison to 34.6% of the national population that holds conservative political views. Those WSA stewards who indicated that they

were moderate or middle of the road in their political views made up 15.8% of the sample, in comparison to 38.5% at the national level. Overall, the difference between the distribution of WSA stewards' political views and the national population was highly statistically significant. Table 3 presents the distribution of respondents' political views compared with national trends reported in the General Social Survey.

Table 3: Political Views of WSA Stewards versus National Population

		National Sample	WSA Stewards Sample
Political Views	*Extremely Liberal/ Left*	4.0%	7.5%***
	Liberal	11.8%	42.1%***
	Slightly Liberal	11.2%	18.0%***
	Moderate, middle of the road	38.5%	15.8%***
	Slightly Conservative	15.4%	8.3%***
	Conservative	15.5%	8.3%***
	Extremely Conservative/ Right	3.7%	0.0%
Note: Weighted National sample data from the General Social Survey, cumulative file 1972-2012, see www.norc.org/GSS+Website/ (Accessed 3 November 2014).			
*** indicates significance at the 0.001 level or higher (two-tailed p-value) ** indicates significance at the 0.01 level (two-tailed p-value)			

When asked about their civic participation in the year prior to the survey (Fall/Winter 2013-Spring/Summer 2014), WSA stewards reported being engaged in all types of civic and political activities. Nearly two-thirds (62.9%) of the sample reported having contacted an elected official in the past year. A slightly higher number (65.1%) of stewards had signed a petition, and 81.8% had attended a meeting in their community. Overall, WSA stewards were more engaged in civic and political activities than the American population, with the exception of running for public office and working for political parties. These findings are highly statistically significant and consistent with previous studies of the civic engagement of environmental stewards

(Overdevest et al. 2004; Fisher et al. 2015). Table 4 presents the results of the civic and political engagement questions from the survey with significance levels for comparison of means tests with national sample values.

Table 4: Civic Activities of WSA Stewards versus National Population

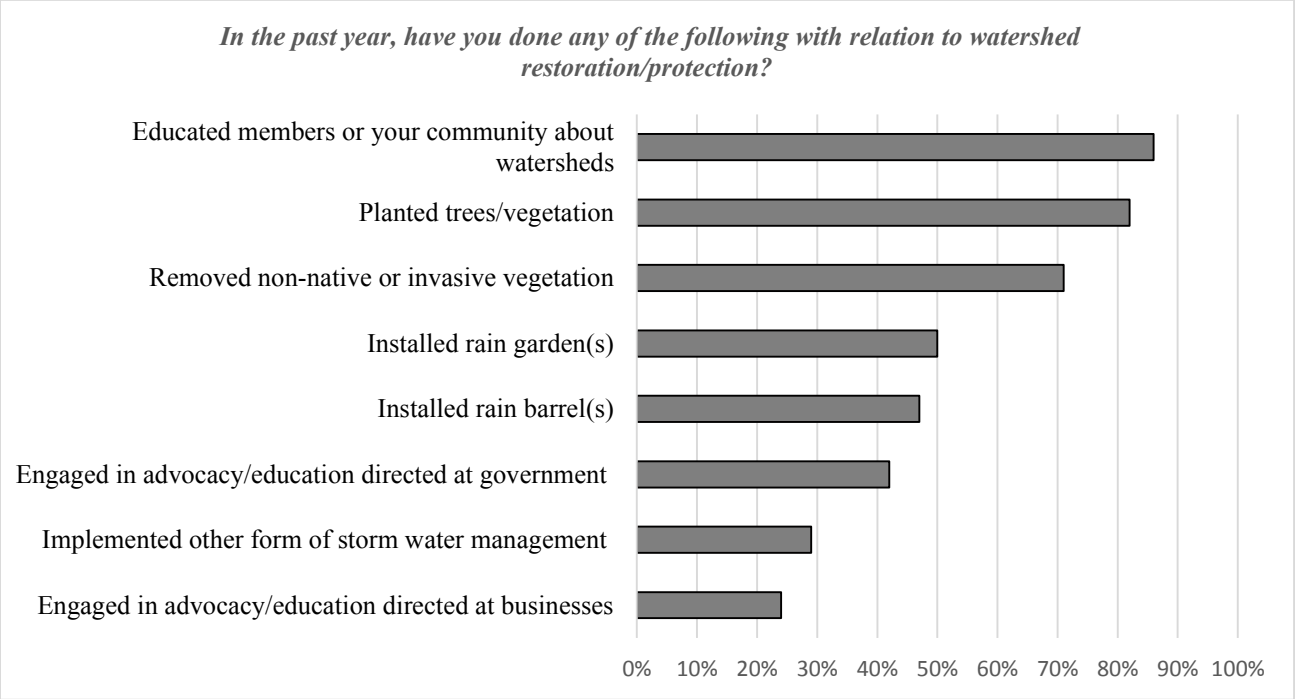
In which of the following civic activities have you participated in the past year?		
	National Population	**WSA Stewards**
Signed a petition(a)	35.2%	65.1%***
Contacted an elected government representative (a)	22.3%	62.9%***
Attended a public, town, community board, or school meeting (b)	24.0%	81.8%***
Wore or posted a button/flyer/sticker/poster of political campaign (d)	29.3%	25.0%*
Participated in a protest (a)	6.1%	18.2%***
Contacted the media to express view (a)	5.1%	28.8%***
Gave a speech (c)	4.4%	41.7%***
Held or ran for public office (c)	0.7%	0.7%
Engaged in political discussion on the Internet (a)	5.4%	25.0%***
Worked for a political party (c)	18.7%	8.3%***
(a)National sample data from the General Social Survey, cumulative file 1972-2008, see www.norc.org/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 (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 (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 (accessed 24 June 2010).		
*** indicates significance at the 0.001 level or higher (two-tailed p-value) ** indicates significance at the 0.01 level (two-tailed p-value) * indicates significance at the 0.1 level (two-tailed p-value)		

Watershed Stewardship Activities

WSA stewards engaged in a wide range of stewardship-focused activities related to watershed protection and restoration. In the year prior to the survey, 86% of the stewards reported that they had educated members of their communities about watershed stewardship. Advocacy directed at government officials and agencies was reported by 42% of respondents, while about one quarter

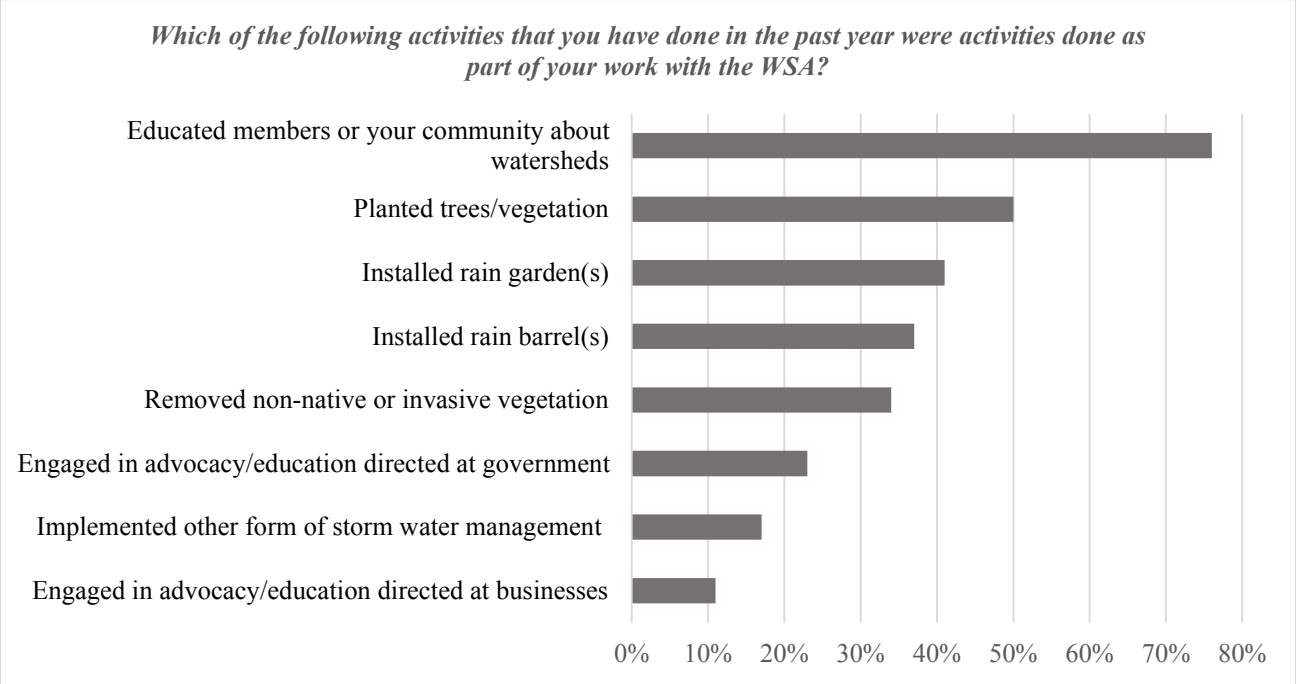
of respondents reported engaging in education campaigns directed at businesses. In terms of more hands-on activities, 82% of stewards reported having planted trees or vegetation. Another very common activity was removal of non-native or invasive vegetation, which 70% of the sample reported. Additionally, about half of respondents reported that they had installed rain barrels and/or installed rain gardens. Figure 4 presents the distribution of these general watershed stewardship activities.

Figure 4: Watershed Stewardship Activities in the Past Year



Respondents reported that most of their watershed stewardship activities were carried out specifically in connection with WSA programs. The most common activity was educating members of the community (75%), followed by planting trees, installing rain gardens, installing rain barrels, and removing vegetation (30-40%). These results are presented in Figure 5

Figure 5: Stewardship Activities Performed with WSA Programs



Stewards also reported participating in watershed stewardship *outside* of the WSAs, either with other organizations or on their own. These findings suggest that WSA stewardship activities are linked to broader participation by WSA stewards in their respective communities. There are marked differences between stewards' general stewardship activities and WSA-specific activities: in terms of vegetation removal, tree planting, and advocacy directed at government and businesses. In particular, half of the stewards reported that their participation was carried out with WSAs while the other half took place in other contexts. Table 5 provides details on the reported stewardship activities of stewards within and outside of the WSA programs.

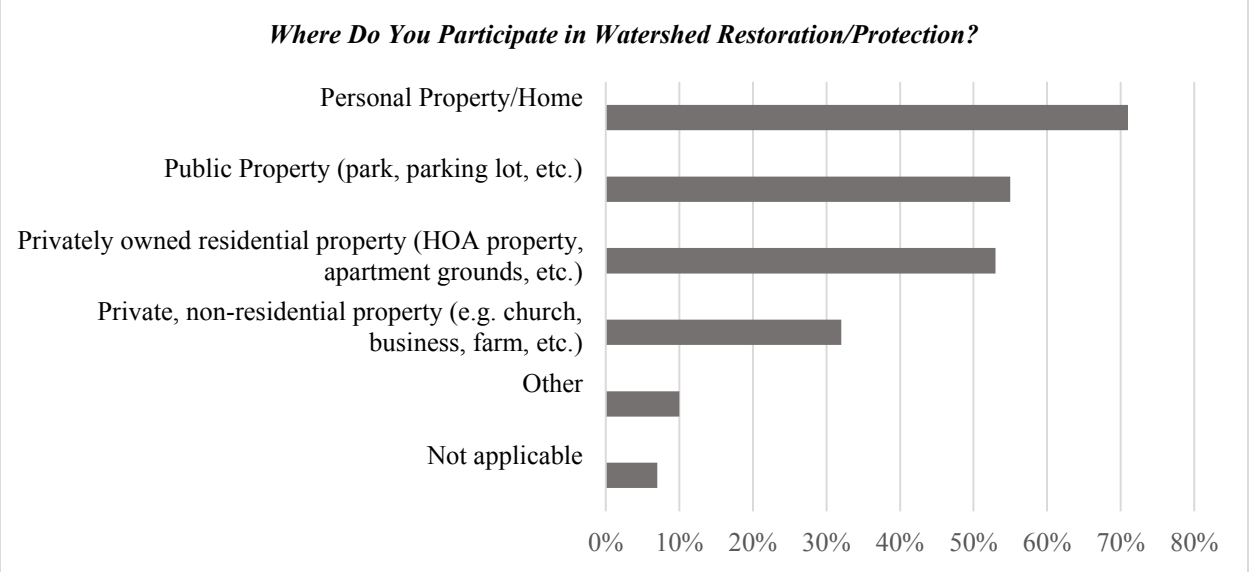
Table 5: Comparison of General and WSA-specific Watershed Stewardship Activities

In the past year, have you done any of the following with relation to watershed restoration/protection?

	Overall	With WSA
Installed rain barrel(s)	46.9%	36.5%
Installed rain garden(s)	50.3%	40.9%
Planted trees/vegetation	81.6%	50.4%
Removed non-native or invasive vegetation	70.7%	33.9%
Implemented other form of storm water management	29.3%	17.4%
Educated members or your community about watershed issues / protection	85.7%	75.7%
Engaged in advocacy / education directed at government agencies / officials	42.2%	22.6%
Engaged in advocacy / education directed at businesses	24.5%	11.3%

Stewards were also asked to provide details about their "shovel in the dirt" stewardship activities. The most common location for watershed-related projects was stewards' personal property (71%). Also, over half of respondents reported carrying out watershed restoration and protection projects on public property or privately owned residential property. In addition, over 30% of the stewards had participated in projects on private, non-residential property. Figure 6 presents the distribution of these locations.

Figure 6: Location of Watershed Restoration and Protection Projects



Mobilization of Watershed Stewards

Similar to other environmental organizations that rely on volunteer participation (e.g. Andrews and Edwards 2005; Martinez and McMullin 2004; Andrews, Ganz, and Bagetta 2010), the WSAs use a variety of methods to recruit participants to their programs. It was most common for stewards to find out about the WSAs through organizations and individuals in their social networks. The predominant way respondents heard about their respective WSAs was through members of an organization or group (42%). An additional 8% heard through the newsletter of an organization, bringing the total respondents in our sample who heard about the WSA via other organizations to half (50%). A quarter of respondents reported hearing from through family or friends. A small proportion (7%) reported hearing about the WSAs from an email list. In addition, respondents heard about the WSA through non-relational channels, such as newspapers and publications (13%), flyers and posters (11%), websites (6%), and social media (1%). Table 6 details this information.

Table 6: Methods by which Respondents Heard about the WSAs

How did you hear about the Watershed Stewards Academy?		
	Number	**Percent**
People from an organization/group	67	42%
Family/Friend(s)	39	25%
Newspaper or other local publication	21	13%
School/Work	21	13%
Flyers or Posters	17	11%
People from a government office	14	9%
Newsletter of an organization/group	13	8%
E-mail/Mailing list	11	7%
Web Site	9	6%
People from a local business	1	1%
Social Media (Facebook, Twitter, etc.)	1	1%
Total	214	

Most stewards reported attending the WSA Master Watershed Stewards trainings/courses alone (62%). These findings differ from previous findings on social participation in

environmental stewardship projects: Fisher and colleagues, for example, find that only 13.8 percent of tree planting volunteers attended events by themselves (2015). Some friends and neighbors attended courses together (16%), as did co-workers (18%). Members of organizations also participated in the courses together (12%). Only 10% of respondents attended the courses with family members. Table 7 presents these results.

Table 7: Attendance of WSA Programs

With whom did/do you attend Master Watershed Stewards trainings/courses?		
	Number	Percent
Alone	90	62%
Colleagues/Co-Students	27	18%
Friends/Neighbors	24	16%
With Members of Organization or Group, please name it	18	12%
Partner/Family	14	10%
Total	173	

Most respondents from Anne Arundel and Howard County WSAs reported being currently involved in WSA programs: for Anne Arundel County, 83% of the 93 respondents reported being active in their WSA, while for Howard County, 81% of the 16 respondents were active members. Respondents from the National Capital Region WSA, however, were more likely to be formerly involved, rather than active: 69%, or 35 respondents, said they were formerly involved, while only 31% (16 respondents) said they were current, active members. Tables 8 presents the numbers of active and inactive members.

Table 8: WSA Participants' Program Status

	Anne Arundel County		Howard County		National Capital Region	
Active members	77	82.8%	13	81.3%	16	31.4%
Formerly involved members	16	17.2%	2	18.7%	35	68.6%
Total Number of Participants	93		15		51	

Most of the respondents to the survey were either environmental volunteers, certified master watershed stewards, or participants in a course. Table 9 presents the positions held by respondents.

Table 9: WSA Participant Positions

	Anne Arundel County		Howard County		National Capital Region	
Paid staff	3	2.0%	1	6.7%	4	7.8%
Unpaid staff	3	2.0%	2	13.3%	1	2.0%
Educator/trainer for MWS courses	5	5.4%	1	6.7%	5	9.8%
Board member	4	4.3%	2	13.3%	3	5.9%
Consortium member	8	8.6%	2	13.3%	3	5.9%
Organizational volunteer	1	1.1%	2	13.3%	5	9.8%
Environmental volunteer	30	32.3%	5	33.3%	16	31.4%
Certified Master Watershed Steward	70	75.3%	5	33.3%	16	31.4%
Participant in MWS course	37	39.8%	10	66.7%	38	74.5%
Other	3	2%	1	6.7%	4	7.7%
Total Number of Participants	93		15		51	

Nearly all respondents had been enrolled in Master Watershed Stewards (MWS) training and certification programs (93.1% in total). Over half of respondents to the survey had completed MWS courses (60.6%), whereas 21.2% were currently involved in coursework. Some respondents (11.2%) indicated that they had started but had not completed the certification process. Of those who had completed the MWS certification, 86.3% were working as active master stewards in their communities. A majority of respondents had completed, or were working on, a MWS capstone at the time of the survey. Capstone projects are required of

stewards as a final stage of the MWS certification process and can be either "shovel in the dirt" projects (installation-based) or educational (community-oriented projects to teach about watershed stewardship). Table 10 presents these results.

Table 10: WSA Participant Activities

	Number	Percent*
Completed MWS certification course	97	60.6%
Currently involved in MWS certification course	34	21.2%
Started but did not complete MWS certification course	18	11.2%
Not involved in MWS certification	11	6.9%
Actively working as MWS in community	82	86.3%
Completed or working on MWS capstone project	120	81.1%
*of total responses to each question		

Conclusion

The WSAs have been successful in reaching out and mobilizing people throughout the Howard County, Montgomery County, Prince George's County, and Anne Arundel County areas in Maryland and Washington, DC to participate in stewardship training. Consistent with previous studies of environmental participation and volunteerism (e.g. Jones 1998; Verba et al. 2003; Barkan 2004; Travaline and Hunold 2010; Fisher et al. 2015), we find that, on average, former and active WSA members are politically liberal, well educated, civically engaged, female, and predominantly white when compared with the population of their communities. WSA participants tended to be of late career or early retirement age, a finding that reflects the time commitment necessary to participate in training courses and group projects. The most common stewardship activities for WSA volunteers were engaging in community-based advocacy work and planting vegetation as an effort to improve the health of the Chesapeake Bay Watershed. Finally, while most members attended the training classes alone, they reported hearing about

their WSA through friends, family, or from existing organizations or groups. This finding stands in stark contrast to the findings from research on volunteer stewards involved in New York City's MillionTrees Initiative who heard about the tree planting events mostly at school or work and attended the events with members of an organization or colleagues or co-students (for a full discussion, see Fisher et al. 2015).

Data from the online survey of WSA participants suggest that the WSAs have been successful in reaching out to a specific demographic of environmentally concerned individuals in their communities. At this stage, it remains unclear if the act of watershed stewardship is serving as a gateway to other forms of civic engagement as found in previous studies of other forms of stewardship (e.g. Overdevest et al. 2004, Fisher et al. 2015). Consistent with the work of Fisher and colleagues (2015), the next step in this project is to follow-up with respondents to ask more in depth questions about how they got environmentally and civically engaged to understand which came first and why. In these interviews, we also hope to learn more about how individual members became involved with the WSAs, and their work and experiences with the WSAs. These data will help us to understand the specific ways in which the WSAs are successfully mobilizing their communities as watershed stewards.

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