

# **Perceptions of Green Spaces and their Connection to Volunteerism**

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# **Introduction**

## **What are Green Spaces?**

The earliest known use of the term ‘green space’ was by English poet and physician, Mark Akenside in his poem Ode to the Evening Star in 1741. It describes a large lush meadow framing the titular evening star in its rise, however green spaces have been around about as long as civilization has. Green space is defined by the Oxford dictionary as, “an area of grass or other vegetation, typically maintained or designed for recreational or aesthetic purpose in an urban area,” (Oxford). Within this article we will consider urban, suburban, and rural green spaces of many types such as parks, preserves, fields, recreation courts, forests, and many more.

Naturalized greenspaces are a type of green space that consist of native plant species. Naturalized areas tend to be more resistant and adaptable to the native landscape. Common naturalized areas include meadows, prairies, and woodlands. Non-native greenspaces feature plant species that have been introduced from other regions or countries. These areas are often designed for aesthetic purposes or specific functional requirements. Common non-native greenspaces are gardens, lawns, and other recreational areas (Marshall et al., 2023).

## **Benefits of Green Spaces**

### Ecological Benefits

As cities expand and develop, natural habitats are converted into urban areas, resulting in the loss of crucial habitats for many species. This habitat loss forces wildlife to adapt to new environments or face displacement, putting pressure on their populations and leading to declines in biodiversity. As a result, urbanization often leads to habitat loss and fragmentation for

wildlife, as well as subsequent changes in community-level species composition. (Apfelbeck et al., 2019).

The addition of green spaces to urban areas provides essential habitat, food resources, shelter, and breeding sites for a wide range of wildlife species (MacGregor-Forset al., 2016). These green spaces also serve as crucial stepping stones, connecting fragmented habitats and facilitating wildlife movement across urban landscapes (Apfelbeck et al., 2019). Green spaces also play a vital role in supporting plants and pollinators, including bees, butterflies, and birds, which are essential for facilitating reproduction for various plant species (Chan, 2020). Meadows have been found to host three times the amount of insect species compared to lawns and attract a greater diversity of wildlife, including birds and small mammals. The diversity in plant species and varying heights of plants in meadows provide sought-after shelter for many small mammals (O'Connell, 2021). It was also found that insects in green spaces significantly impact the small mammal population by pollinating and contributing to plant reproduction, thereby promoting ecosystem health (Chan, 2020).

Along with the effects on ecosystems, urbanization and development has the general effect of causing various negative abiotic effects on the soil, air, and water, either intentionally or unintentionally (Gregory et al., 2006). Soils and water regulation are intimately codependent upon one another, decreases in soil porosity and permeability will affect the flow and infiltration of surface waters. Soil compaction causes decreased water infiltration and increased surface water runoff, which can be associated with problems like erosion, reduced groundwater recharge within watersheds, increased incidence of flooding, and water quality issues (Bartens et al., 2008; Gregory et al., 2006; Berland et al., 2017). Soil compaction increases the strength and bulk density of the soil, this can be done intentionally for the construction of a foundation for



buildings, roads, or other infrastructure. In research conducted by Gregory and others, they found that sites of wooded areas with natural vegetation experience no significant difference in infiltration rates during times of construction if most of the vegetation was left in place (Gregory et al., 2006). This supports the researchers' hypothesis that vegetation does support soil infiltration and minimize the impacts of soil compaction in work sites where unintentional compaction of soil is highly likely. Bartens and others conducted an experiment to determine the effectiveness of tree roots as a method of reversing the effects of compaction of soils, in all cases of their experimentation the roots were able to penetrate the compacted soils and increase infiltration (Bartens et al., 2008). This experiment shows that roots are capable of penetrating into compacted soils to increase permeability by creating preferential flow paths. Upon death and decomposition, these roots will leave behind pores and organic matter which will further support water holding capacity and infiltration of water. This is an important service provided by trees as it represents the plants ability to repair soils which were previously damaged by compaction.

In addition to regulating soil and water, green spaces play an important role in the management of air quality and temperature. In a study conducted by Diener and others in 2021, they found that trees play an important role in the dispersion, deposition, modification and ventilation of particulate matter in the air (Diener et al.,2021). Particulate matter ranks 5th of the major health factors threatening human health globally, the first of the environmental factors (Diener et al. 2021). The implementation of green spaces in our urban spaces will have massive potential to reduce particulate matter, which will benefit human health. Furthermore, in a study conducted by Zhang and others in 2017, researchers found that green spaces are highly effective at reducing the heat island effect in Phoenix, Arizona (Zhang et al., 2017). Reducing the heat

island effect in cities has significant implications on sustainability, energy and water consumption, emissions, and human health (Zhang et al. 2017).

### Sociological Benefits

Outside of benefits to ecosystem functions, green spaces also promote human wellness in a variety of ways. First and foremost, research supports that time spent in these outdoor areas promotes mental health and wellbeing. This happens both in combating mental illness, and in promoting positive mental health activities (Wood et al., 2017; Picavet et al., 2016). Additionally, these positive mental health impacts are often sought after by college administrators to increase satisfaction and quality of life for students. As stated within Wood and others' 2017 findings, "mental health is not merely the absence of mental illness," and so it is important to not understate the impact that green spaces can have on college campuses (Wood et al., 2017).

Continuing beyond mental health, green spaces also serve physical health in all types of people. Intuitively, we can understand that exercise and physical activity happens outdoors, however these green spaces serve not only as a conduit for activity, but as a motivator. Picavet and others detailed in their 2016 article how, "those [individuals] living in a neighborhood with more green space are suggested to experience better health than those living in a neighborhood with less," continuing to assert that rates of physical activity are raised within these areas (Picavet et al., 2016).

Similarly to mental health however, physical health is promoted not only in increasing positive health indicators, but in decreasing negative health indicators. Knobel and others discuss in their 2021 article how negative health indicators such as obesity decrease in areas with more green spaces (Knobel et al., 2021). Groups such as the American Heart Association, US Center for Disease Control, and World Health Organization also encourage time spent outdoors to

promote personal health, which can be accomplished more easily with readily available green spaces.

When examining sociological benefits of green spaces, it is important to keep in mind that these are not received uniformly across demographics and across green spaces. The perceptions of a green space impact use, and management of these spaces and so should be considered. Research has shown that age, gender, and income impact how green spaces are perceived and subsequently used (Braçe et al., 2021; Ode et al., 2016). For example, Braçe and others discussed how women within the study group valued green spaces that featured areas geared towards children, such as playgrounds (Braçe et al., 2021). This was correlated with the study neighborhoods population of largely traditional families and so many of the women being surveyed were responsible for children during a majority of their day. Researchers continued that this is just one example of how the society of a region can influence the perceptions of green spaces.

## **Volunteerism in Green Spaces**

Naturalized green spaces have gained increasing attention and support in recent decades (United Nations 2021). While the public is becoming generally more supportive of naturalized green spaces and more funding is becoming available, green space projects can be limited by labor needed for maintenance (Asah et al., 2014; personal communication, Katie Kingery-Page, February 6, 2024). In urban settings, including college campuses, naturalized green spaces are increasingly supported by volunteers (Asah et al., 2014). In response to this need, conservation organizations across the globe have developed volunteer programs to support this work.

While each volunteer program is unique in scale, organization, and focus, understanding the motivations and satisfaction of volunteers is important for the long-term success of these programs (Moskell et al., 2010; Jacobson et al., 2012; Winch et al., 2021). Below, we discuss volunteerism on college campuses to provide context to green space volunteerism.

### Benefits of Volunteerism in Green Spaces

Green spaces require maintenance to upkeep the appearance and function of these spaces. For traditional green spaces (turfgrass lawns, formal non-native planting beds, etc.) this maintenance includes mowing, string trimming, and the application of herbicide and fertilizers. For naturalized green spaces (ecological restorations, native planting beds, etc.) maintenance more heavily includes the correct identification and selective removal of undesirable species (personal communication, Katie Kingery-Page, February 6, 2024). Volunteering helps to address the issue of labor needed to maintain naturalized green spaces (Jacobson et al., 2012; Winch et al., 2020). Additionally, volunteerism in naturalized green spaces offers other benefits to the community and to the individual.

On the societal level, volunteerism in green spaces helps to maintain green spaces, connects people to the land and community, and can encourage environmentally-friendly behavior. When volunteering, individuals have direct experiences of nature. Direct experiences with nature have been correlated with pro-environmental behavior (DiEnno and Thompson, 2013; Seymour, 2018). For example, in one study, volunteer commitment (frequency and prioritization) was associated with positive attitudes and actions towards the environment (Ryan et al., 2001). This supports the idea that environmental volunteering can help people connect to local ecosystems (Ryan et al., 2001; Seymour, 2018).

On the individual level, volunteers can experience numerous mental health, physical, professional, and social benefits. In studies on volunteer motivations, volunteers have mentioned the mental health benefits of working in nature. Volunteering in nature can provide mental restoration (DiEnno and Thompson, 2013; Winch et al., 2020; Miles et al. 1998). For example, a sense of meaningful action led to positive emotions and was found to be one of the strongest drivers for volunteers (Miles et al., 1998). Unlike passive experiences of nature (i.e. hiking), volunteering to restore nature “presents each participant with an environmental problem along with an active on-the-ground restoration solution, a solution for which each volunteer is a part, often with tangible results” (DiEnno and Thompson, 2013). Volunteering in nature also provides the physical benefit of exercise (DiEnno and Thompson, 2013; Miles et al., 1998; Winch et al., 2020). Professional benefits include learning opportunities, like learning about ecology, species identification, etc. (Ryan et al., 2001; Winch et al., 2020) as well as career building opportunities, like networking, resume-building, etc. (McDougle et al., 2011). Helping, enhancing, and learning about the environment are important factors for environmental volunteer satisfaction and retention (Jacobson et al., 2012). Social benefits were found to be important motivators in volunteers as well (DiEnno and Thompson, 2013; Francis, 2011; McDougle et al., 2011). Sense of community and other social factors Sense of accomplishment through meaningful action was another important motivator (Jacobson et al., 2012; Miles et al., 1998; Ryan et al., 2001).

Individuals are motivated to volunteer by different benefits, so understanding a groups’ volunteer motivations and satisfaction is important for increasing volunteer recruitment and retention. As a result, there have been many studies on the motivations behind volunteering. A popular model that has been developed is the Volunteer Functions Inventory (VFI). The VFI

examines six main functional motives: Values (humanitarian/altruistic tendencies), Protective (shield ego from negative features/feelings), Enhancement (expand positive attributes of the ego), Understanding (learn new skills), Career (develop career-related skills), and Social (do something that is favorably viewed by others or volunteering with friends (Francis, 2011; Moskell et al., 2011). These motivation categories can be measured in surveys and interviews to help volunteer programs prioritize benefits related to increased volunteer recruitment and retention. By highlighting the personal benefits of volunteering, volunteer programs can appeal to more college students (Francis, 2011; Jacobson et al., 2012).

#### Recruiting Volunteers on College Campuses

In a focus group of volunteer program coordinators, Moskell and others (2010) found that the primary engagement strategy used was education, but the volunteer coordinators realized engagement strategies needed to be more personalized to the motivations of their volunteers (Moskell et al., 2010). This is particularly true for college students, who show declining rates of volunteerism (Francis, 2011) and hold different motivations than the general public (McDougle et al., 2011). College students have different motivations than other age groups, so when trying to increase environmental volunteering on college campuses, programs must understand college student's leading motivations (McDougle et al., 2011).

For example, one study did not find environmental values as a predictor of environmental volunteering in college students (McDougle et al., 2011). Instead, two studies found that the social aspects of environmental volunteering was the strongest predictor of volunteering for college students (Francis, 2011; McDougle et al., 2011). It is important to note that these studies were of generation Y college students. Motivations tend to shift from generation to generation, so motivations may be different for today's generation Z college students (Francis, 2011). In a

review of an online community which was skewed towards younger individuals (generation Z), a study found that individuals were most interested in volunteer opportunities that offered physical activity, acquiring new skills, being outdoors, and close contact with wildlife (Winch et al., 2021). These studies highlight how motivations can vary greatly within larger groups.

## **Study Objectives**

Volunteer motivations can overlap and have complex interactions depending on the group being studied, so volunteer programs should conduct their own surveys to better understand how to recruit and retain their volunteers (Asah et al., 2014; Jacobson et al., 2012; McDougle et al., 2011). Here, we conduct a study on the perceived benefits of greenspaces and their subsequent impacts on likelihood of volunteerism at Kansas State University in order to understand how to further support ecological restoration efforts on campus. Specifically, we address the following objectives:

1. Understand perceived green space benefits by various groups on Kansas State University's Manhattan campus.
2. Understand ecological literacy and awareness of green space benefits by various groups on Kansas State University's Manhattan campus.
3. Understand how perceptions and knowledge of green spaces impact likelihood of volunteering in naturalized campus green spaces on Kansas State University's Manhattan campus.

## **Relevance**

By naturalizing campus green spaces (through ecological restorations, planting natives, etc.), the campus landscape can provide additional ecological, social, and mental benefits to the

community. However to accomplish this effort, there must be support from administrators, facilities, and the wider campus community. Support for naturalized green spaces can be limited by the perceived benefits and ecological literacy of stakeholders. Additionally, naturalized green space projects can be limited by the labor required to maintain these spaces, so volunteer labor must be secured to ensure the long-term success of the space (Asah et al., 2014; personal communication, Katie Kingery-Page, February 6, 2024). The project investigates these factors in relation to Kansas State University's Manhattan campus. Through a survey and analysis, the project aims to understand the campus community's perceptions of green space benefits, ecological literacy and awareness of green space benefits, and these factors' impact on volunteerism in naturalized spaces on campus. By conducting this study, the campus community's perceptions and support of naturalized campus greenspaces can be better understood.

## **Methods**

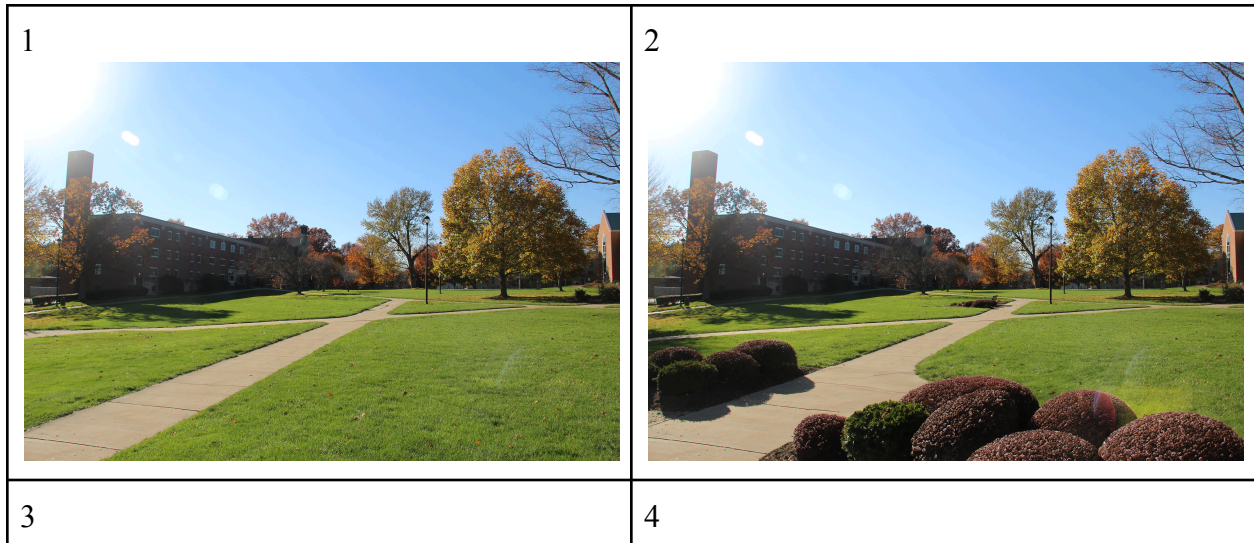
This study was conducted using a qualitative survey questionnaire administered to people across the Kansas State University (KSU) college campus in Manhattan, Kansas. The survey was created using the ArcGIS Survey123 software. The survey consisted of three to seven questions per objective, and was open and available for nine days. The survey was dispersed across the campus using flyers with an accompanying QR code, which would take responders directly to the survey. Furthermore, the survey was shared to various clubs and organizations, shared through various email newsletters, and passed from person to person in some cases.

The targeted audience of this survey were the people of KSU working and studying in their various capacities. The goal was to reach a diverse group of people within various roles at



KSU including faculty and staff, facilities management, administration, undergraduates, graduates, alumni, and others. The diversity of respondents' was then recorded via demographic questions at the beginning of the survey.

After survey responses were collected, data was analyzed to identify trends and correlations. An ANOVA model was used to determine correlations related to a person's self-reported likelihood to volunteer. The respondent's answer to the question, "How likely are you to volunteer?" (select 1-4), was compared to the number of correctly answered ecological literacy questions, if they reported they read scientific literature, and which values they associated with naturalized green spaces (aesthetic, mental, physical, environmental, or community). Results identified which factors were significantly correlated with a respondent's likelihood to volunteer.



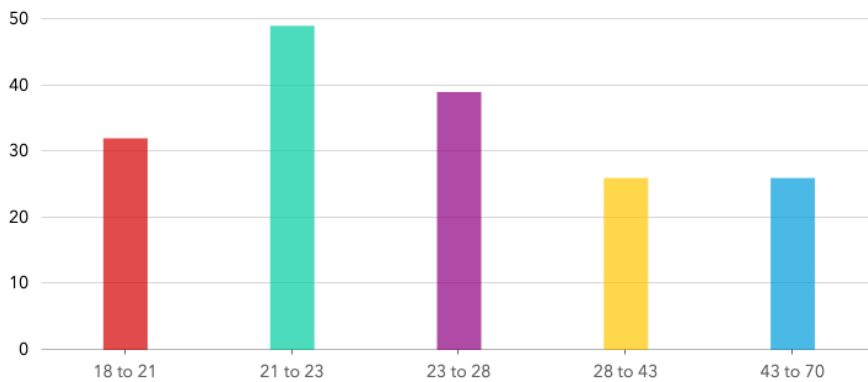


**Fig. 1 - Green Space Survey Images** - Survey respondents were asked to select their preferred green space from the options above. The images were created using AI software in Adobe Photoshop. The images exhibited the following: 1) mowed campus lawn (least naturalized), 2) formal non-native planting, 3) formal native planting, 4) native meadow restoration (most naturalized).

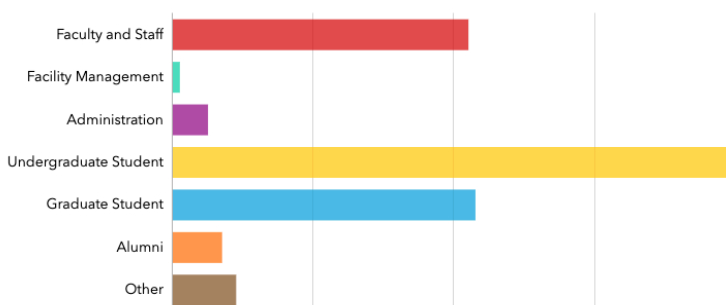
## Results

### Demographics

This survey was distributed through messaging to campus organizations, physical flyers displayed on campus, and posting to K-State centered social media. The survey was active from March 19th - March 28th of 2024 and received a total of 172 responses.

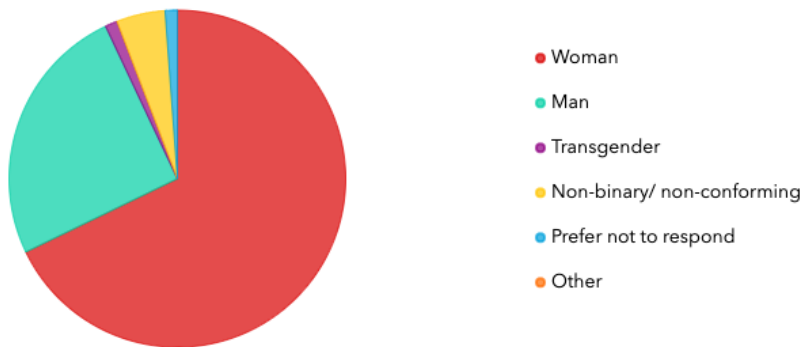


**Fig. 2 - Age responses of participants**



**Fig. 3 -**

### Self-reported roles at K-State of participants



**Fig. 4 -  
Reported gender of  
participants**

The average age of participants was around 28 years old, most respondents were undergraduates at K-State, and we received 117 responses from women as opposed to 44 responses by men. This heavy bias towards women may stem from the distribution of the survey in K-State's office for Advancement of Women in Science and Engineering (KAWSE). Additionally when examining which department/ major individuals were associated with, the top three were biology, architecture, and horticulture. This trend is continued in reported club involvement which leans towards clubs centered on natural science or architecture.

### Perceived Benefits of Green Spaces

To determine our study population's perception of the benefits of green spaces on KSU campus we asked them to describe, in free response form, what benefits they associate with green spaces. When given the freedom to describe what they believe to be the benefits we found, through grouped analysis, that respondents value mostly environmental benefits, then aesthetic value, followed by community benefits. Secondly we provided a list of perceived benefits that

the respondents chose from, the results suggested that people value aesthetic value most followed by mental and thirdly environmental (Figure 5).

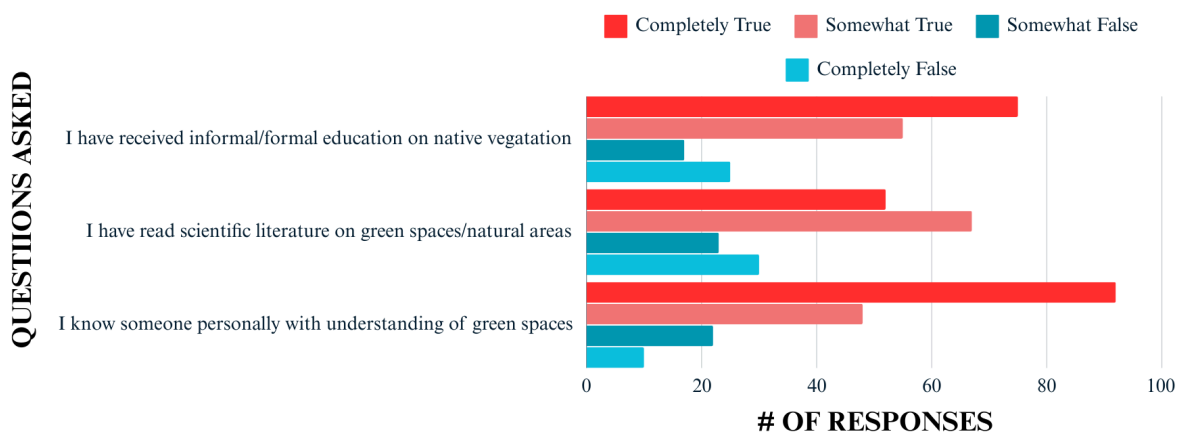


**Fig. 5 - Free Response v. Selected Green Space Value Priority** - Survey respondents were asked to explain why they chose the greenspace image they did as well as to select the top three values that they associate with green spaces. The results can be used to compare respondents' actual priorities with their perceived priorities. In the free response (actual priorities), environmental, aesthetic and community benefits were mentioned the most in the written statements. However, in the multiple choice selection of priorities (perceived priorities), aesthetic, mental, and environmental benefits of greenspaces were most often selected. Prioritization of benefits differed between actual and perceived priorities

### Ecological Literacy / Awareness

To determine participants' awareness of greenspaces, our group asked three questions covering topics including formal or informal education about the impact of native vegetation, engagement

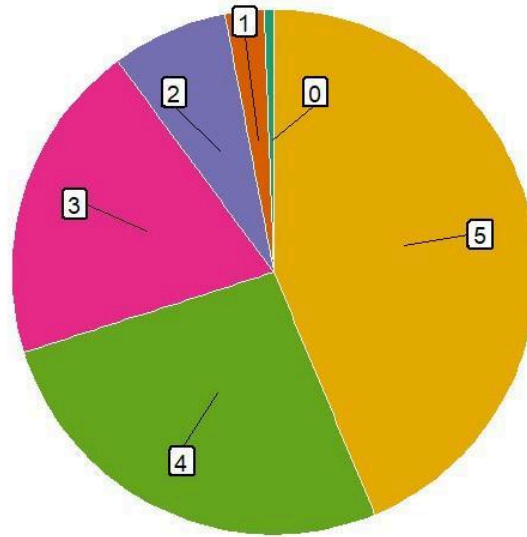
with scientific literature on greenspaces/natural areas, and personal acquaintance with someone knowledgeable about greenspaces. Participants were provided with response options including "Completely True," "Somewhat True," "Somewhat False," and "Completely False." The data showed that 76% of respondents answered "Completely True" or "Somewhat True" to having informal/formal education on native vegetation, while 24% of respondents answered "Somewhat False" or "Completely False" regarding any education on native vegetation. The data also showed that 69% of respondents answered "Completely True" or "Somewhat True" regarding their reading of scientific literature on greenspaces/native areas, while the 31% answered "Somewhat False" or "Completely False" to having read about green spaces. Lastly, 81% of respondents answered "Completely True" or "Somewhat True" that they knew someone who is knowledgeable about greenspaces, while the remaining 19% answered "Somewhat False" or "Completely False" to knowing someone with an understanding of green spaces (See Fig. 6).



**Fig. 6 - Prior Knowledge of Greenspace Row Chart-** Survey participants were asked to answer three questions relating to if they have received informal/formal education on native vegetation, if they have read scientific literature on greenspaces/ native vegetation, and if they know someone personally with an understanding of green spaces. Participants were asked to select their level of agreement on a True-False scale (completely true, somewhat true, somewhat false, completely false) with the response that corresponds to them. 75% of respondents answered “completely true” or “somewhat true” for all three statements.

Next, to assess the literacy of the group, we asked a series of five matrix questions. These questions showed different statements regarding what impact greenspaces had on soil health, water use, and other ecological services. The participants were able to select their level of agreement from "Completely True" to "Completely False" for the provided statements. By reading the responses, we could determine the accuracy of their understanding of greenspaces. To visualize the results we created a pie chart (See Fig. 7) ; on this chart we observed 43.7% of respondents answered all five questions correctly 26.3% of respondents answered 4 out of 5 questions correctly. 19.8% of participants answered 3 out of 5 correctly, 2.4% of respondents answered 2 out of 5 correctly, and .599% of respondents answered one out of 5 correctly.

### Number of Correct Answers



**Fig. 7 - Tested levels Ecological Literacy-** Survey respondents were asked to answer a series of five questions on the environmental benefits of naturalized green spaces. Questions asked ranked statements on soil health, water use and other ecological services on a True-False scale (false, somewhat false, neutral, somewhat true, or true). The majority 43.7% of respondents answered 100% of the questions correctly.

### Likelihood to Volunteer

In an ANOVA model geared toward understanding whether respondents were more likely to volunteer depending on tested ecological literacy, whether they have read scientific literature, and whether they value any of the 5 primary benefits of greenspaces (aesthetic, mental, physical, environmental, or community), the only factor which significantly affected an individual's self-reported likelihood of volunteering was whether an individual has read scientific literature (see Fig. 8). Respondents that reported "completely true" to having read scientific literature were more likely to say they would volunteer in green spaces on campus ( $2.76 \pm 0.15$  on a scale of 0-4) compared to those who reported "completely false" ( $1.82 \pm 0.16$ ; see Fig. 9 and Fig. 10).

	Degrees of Freedom	Sum Sq	Mean Sq	F value	Pr(>F)
<b>Literacy</b>					
Number of Correct Ecological Literacy Questions	5	4.41	0.883	0.814	0.5411
<b>Read Science</b>	<b>3</b>	<b>14.74</b>	<b>4.913</b>	<b>4.534</b>	<b>0.000451*</b>
<b>Values</b>					
Aesthetics	1	0.1	0.095	0.088	0.767
Mental	1	0.12	0.117	0.108	0.743
Physical	1	0.29	0.29	0.267	0.606
Environmental	1	1.36	1.362	1.257	0.264
Community	1	1.04	1.039	1.959	0.329
Residuals	148	160.35	1.083		

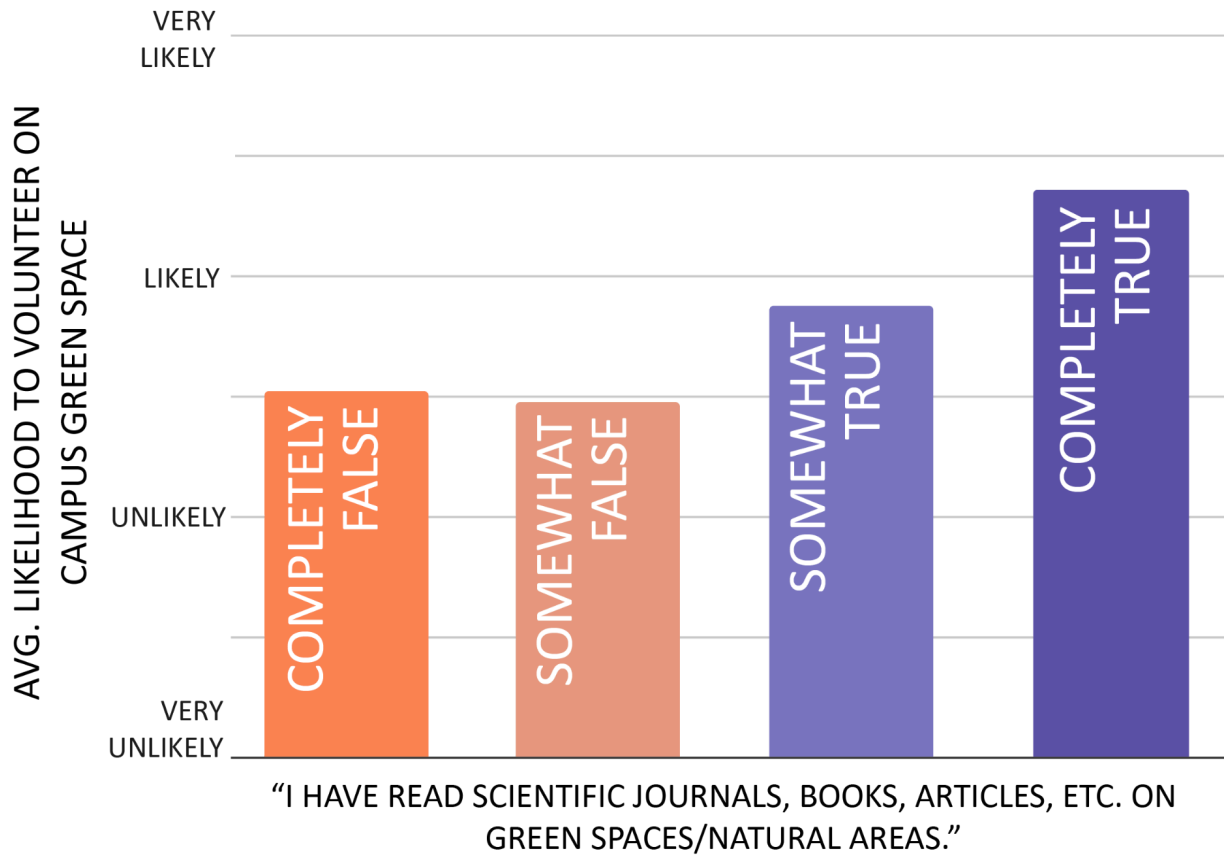
**Fig. 8 ANOVA Model of Respondent's Likelihood to Volunteer** - An ANOVA model was used to compare respondent's likelihood to volunteer with answers to questions regarding perceived green space benefits and ecological literacy. Of the comparisons, the only one found to have a positive correlation was if a respondent had read scientific literature.

<b>Have you read scientific literature?</b>	Number of Responses	Mean	Standard Deviation
Completely False	29	1.83	0.17
Completely True	49	2.76	0.15
Somewhat False	21	2.67	0.22
Somewhat True	63	2.62	0.13

**Fig. 9 Standard Deviations of Read Science Question** - Survey respondents were asked to self-report if they have read scientific literature. Answers were scaled with four options: completely false, somewhat false, somewhat true



and completely true. The majority of respondents reported that they have read scientific literature, answering somewhat true (39%) or completely true (30%).



**Fig. 10 Likelihood to Volunteer and Read Scientific Literature Correlation** - A correlation was found between a respondent's likelihood to volunteer and the extent that they had read scientific literature.

## Discussion

### Summary of Findings

The data collected from the ecological literacy questions indicates that a majority of survey participants possessed some level of awareness regarding greenspaces, whereas few participants exhibited a lack of prior knowledge on the subject (see Fig. 6). From this data we can conclude that the surveyed individuals generally exhibited a high level of awareness/ prior knowledge in greenspaces and/or natural areas. The results from the ecological literacy data collected (see Fig. 7) suggests that the overall literacy of the group regarding greenspaces was relatively high, indicating a majority of participants had an understanding of green spaces.

The data collected from questions asking about green space values shows a distinction between respondents' perceived green space values and their actual greenspace values (mentioned in written responses). When respondents were directly asked about green space values, the top three values selected were aesthetic, mental, and environmental benefits. Community benefits was the least frequently selected value. However, when written responses to another question on why they selected a chosen green space were analyzed, environmental and community benefits were more frequently mentioned (see Fig. 5). Environmental benefits were most frequently mentioned, followed by aesthetic and community. These results indicate that ecological and community benefits of green spaces are undervalued by respondents.

In relation to volunteerism, ranking of perceived benefits (aesthetic, mental, physical, environmental, community) was not found to be correlated with likelihood of volunteering. However, ecological literacy, in relation to if the individual read scientific literature, was correlated with the self-reported likelihood to volunteer. While ecological literacy was also

measured in the number of correct responses to a series of scaled True/False questions, this did not have a correlation with likelihood to volunteer. This is likely because a majority of respondents answered all ecological literacy questions correctly. This indicates a need to include more challenging ecological literacy questions in the future to better compare an individual's ecological literacy in relation to their environmental volunteerism.

## Projections

Understanding the perception surrounding green spaces and how they interact with volunteerism in these areas is critical to their continuation. Through this study, we understood that most respondents valued aesthetics of these spaces, the mental health benefits they provide, and the ecological benefits that come to them. Playing to these desires when trying to find volunteers for spaces may have a more plentiful outcome. Additionally, if a green space isn't well received or used, considering its success in these areas may illuminate a course of action.

Additionally, understanding who consider themselves 'likely to volunteer' can help when considering who to target volunteer efforts towards. Participants report higher likelihood to volunteer if they have read scientific literature, so volunteer programs should focus on reaching out to these individuals to have the greatest recruitment success. Additionally, finding ways to increase literacy in this subject at campus' could encourage a deeper appreciation for green spaces, one which can in turn create more support for their continued care.

Green spaces provide a host of benefits to ecosystems, people, and organizations for the many roles they serve. This survey examined just the community surrounding Kansas State University, but understanding the variety of influences that alter perceptions of green spaces can help organizers find people to appreciate green spaces, and aid in their continued care. A closer examination of the relationship between ecological literacy and volunteering can, in turn, expand

the understandings brought forth in this study. However, the impact of space aesthetics? has on appreciation is clear, as well as people's priorities of mental health and ecological importance. Understanding the interaction of these values, as well as people's usage of existing green spaces is a critical aspect to the preservation of these spaces and should be considered by those mandated with managing and maintaining green spaces of any area.

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